COMMUNITIES OF INNOVATION:
CYBORGANIC AND THE BIRTH OF NETWORKED SOCIAL MEDIA

by
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Jennifer C. Cool
Dedication

For my father
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Abstract

Cyborganic, the subject of this study, was a community whose members brought *Wired* magazine online; launched *Hotwired*, the first ad-supported online magazine; set-up Web production for CNET; led the open source Apache project; and staffed and started dozens of other Internet firms and projects—from Craig’s List to Organic Online— during the first phase of the Web’s development as a popular platform (1993-1999). As a conscious project to build a hybrid community both online and on-ground, Cyborganic’s central premise was that mediated and face-to-face interaction are mutually sustaining and can be used together to build uniquely robust communities. Yet, Cyborganic was also an Internet start-up and the business project provided both impetus and infrastructure for the community. The social forms and cultural practices developed in this milieu figured in the initial development of Web publishing, and prefigured Web 2.0 in online collaboration, collective knowledge creation, and social networking.

The objectives of this dissertation are several. The first is to demonstrate the role of Cyborganic in the innovation and adoption of networked social media through an ethnographic case study of the group, showing it as exemplary of the regional and cultural advantage of “technopoles,” and as precursor to contemporary phenomena of online social networking. The second objective is to interrogate the relation between entrepreneurial and utopian practices and social imaginaries in the Cyborganic project, identifying not only their synergies, but also their tensions.
Finally, my third objective is to ground celebratory and utopian discourses of new media genealogically, showing that the social media heralded today as “revolutionary” grew from earlier media and practices, similarly hailed as revolutionary in their day. Rather than representing rupture with the past, the narrative of social revolution through technologies is a cultural legacy passed through generations already, and one that draws on quintessentially American attitudes and practice.
Chapter One

Introduction: From Communities of Innovation to Cultural Critique

Cyborganic, the subject of this study, was a community whose members brought *Wired* magazine online; launched *Hotwired*, the first ad-supported online magazine; set-up Web production for CNET; led the open source Apache project; and staffed and started dozens of other Internet firms and projects—from Craig’s List to Organic Online—during the first phase of the Web’s development as a popular platform (1993-1999). Cyborganic was a conscious project to build a hybrid community both online via the Internet and offline via face-to-face interaction. It was also an Internet start-up and the business project provided both impetus and infrastructure for the community. The social forms and cultural practices developed in this milieu figured in the initial development of Web publishing, and prefigured Web 2.0 in online collaboration, collective knowledge creation, and social networking.

The objectives of this dissertation are several. The first is to demonstrate the role of Cyborganic in the innovation and adoption of networked social media through an ethnographic case study of the group, showing it as exemplary of the regional and cultural advantage of “technopoles” (Castells and Hall 1994:8), and as precursor to contemporary phenomena of online social networking. The second objective is to interrogate the relation between entrepreneurial and utopian practices and social imaginaries in the Cyborganic project, identifying not only their synergies,
but also their tensions. Finally, my third objective is to ground celebratory and utopian discourses of new media genealogically, showing that the social media heralded today as “revolutionary” grew from earlier media and practices, similarly hailed as revolutionary in their day. Rather than representing rupture with the past, the narrative of social revolution through technologies is a cultural legacy passed through generations already, and one that draws on quintessentially American attitudes and practice (Winner 1986; Bestor 1950).

Such a list of objectives may seem overly broad until one appreciates that they do not represent discrete research questions, but the untangling—via exposition and analysis—of phenomena tightly interwoven in Cyborganic, my object of study. Following the phenomena, my objectives themselves are interwoven in the description and argument of this ethnography, each building recursively on the others in each of the ethnographic chapters. Though separated and presented sequentially above, these objectives are co-constructed and coincide in a focus on the symbiosis of entrepreneurial and utopian in the Cyborganic project. Before turning to define the terms and concepts expressed in these objectives, let me illustrate how they took shape.

When I began thinking of how to write from my field research, one of the first tasks before me was to establish the wider relevance of my study of Cyborganic: a community that, at its height, included approximately 150 people. I came to focus on Cyborganic’s role in the development of Web publishing and on the group’s productivity—gauged in terms of its connection to successful firms, projects, and
products—as a way to demonstrate the general significance of this ethnographic case. This focus proved beneficial in that it linked the people I study to things of which my academic mentors and peers had heard: *Wired* magazine, online communities, open source software, and the phenomena of the Internet start-up, or “dot-com.” It also engaged me with research outside anthropology that highlights the role of local cultures and practices in creating self-sustaining regions of innovation and economic productivity (e.g., Castells and Hall 1994; Saxenian 1993, 1994). In this literature, regions such as Silicon Valley are identified as “technopoles,” or “milieus of innovation” (Castells and Hall 1994:21). Together these terms capture the argument that both *place* and *culture* form crucial bases for technical and economic growth.”

As a local community of computer geeks who played a central role in the development of Web publishing, Cyborganic exemplifies the continuing importance of place-based culture and practice in an age where telecommunications might seem to render geography irrelevant. Moreover, many of the social forms, cultural practices, and media that constituted Cyborganic prefigure contemporary genres of networked social media. Thus, I came to my first objective of

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2 This is a term Cyborganic members used to describe themselves. It is a group identifier that links them to the broader Internet culture, as will be discussed later in this introduction.
demonstrating Cyborganic’s innovation and productivity to explain the broader
significance of my study.

However valuable that demonstration in situating my subject, as ethnography,
it is clearly insufficient on many levels. First, it fails to engage the richest material
from a field study centered on the practices and social imaginaries of community,
rather than economic productivity per se. Cyborganic was not only an Internet
business and occupational community. It was also a project to use computer-
mediated-communication to create the kind of face-to-face community its leaders,
members, and social critics alike (e.g. Kunstler 1993; Putnam 2001) found lacking in
contemporary American society. Though the “milieu of innovation” analysis is
consistent with the idea that cultural factors—for example, communitarian
practices—play a crucial role in sustaining technopoles, it subordinates such factors
in a tale of economic heroism that engages my findings primarily in terms of
technical and economic productivity. In offering that reading alone, I would be
looking at my findings only within the framework of production, taking only samples
illustrative of arguments transplanted from other fields, and leaving vast swaths
untouched by the blade of my own analysis. While a focus on production might well
be appropriate, as an ethnographer, I saw that as a determination that could only be
made after more holistic consideration of the data. In other words—and this is the
most important limitation of the first objective—stopping with it would fail to
engage my research anthropologically.
Early on in writing up my fieldwork, I came to see the symbiosis of Cyborganic’s entrepreneurial and utopian dimensions as a key finding to be pursued analytically. This symbiosis was readily apparent, both in my field data, and in the expansive literature on Internet culture by academics, journalists, and members of the subculture of which Cyborganic was a part, i.e., insider or “native” texts (e.g., Raymond 1999; Behlendorf 1999; Pesce 2000). Seeing this confluence as ethnographically central led me to formulate a second objective: that of interrogating the relation between the entrepreneurial and utopian in Cyborganic. In particular, I sought to address the question of how to take Cyborganic’s communitarian practices and imaginaries seriously as social phenomena in their own right, without explaining them away in terms of their productive outputs in a functionalist mode. Or, to put the question in terms quintessential to cultural anthropology, the task was to understand how Cyborganic’s symbiosis of communitarian and entrepreneurial was “good to think,” as well as “good to eat.” By taking them seriously, I meant to examine Cyborganic’s utopian practices, discourses, and social imaginaries in terms of my informant’s self-understandings before interpreting them in terms of any analytic transplanted from other research, however apropos—e.g., the market, network society (Castells 1996), technopoles, cultural capital (Putnam 2001), or a new creative class (Florida 2002) of “no-collar” workers (Ross 2004).

3 I draw here on Claude Lévi-Strauss’s famous distinction between “bon à manger” and “bon à penser” (“good to eat” and “good to think”) in his analysis of totemic animals, which has become emblematic of the contrast between symbolic and materialist analyses of culture (Levi-Strauss 1963:89).
My third and final objective arose out of the challenge I faced pursuing the second. Put plainly, the most basic obstacle to understanding Cyborganic’s communitarian and utopian aspects ethnographically was their apparent obviousness and familiarity. Though online communities, dot-com cottage industries, and geek culture were news to most in 1993 when my fieldwork began, by the time I started writing up my research in 2003, so much had been written and said on these subjects that it became difficult to speak about Cyborganic apart from a host of other discourses, celebratory as well as critical, focused on utopian claims and revolutionary characterizations of the Internet and Internet culture. Such discourses became pervasive on a number of fronts beginning in the 1990s, and are reflected in the popularity of such books as: The Virtual Community (Rheingold 1994); Being Digital (Negroponte 1995); The Cathedral and the Bazaar (Raymond 1999); The Hacker Ethic (Himanen 2001); and in the sheer volume of accounts of hacker, geek, and Internet culture. At first, I was heartened to find so much valuable corroboration and contextualization for my focus on the symbiosis of entrepreneurial and utopian practice and imaginaries, not only in the academic literature on Internet culture, but also in the readings my informants referenced or suggested I read, many of which were also on academic reading lists (e.g., Oldenburg 1991; Rheingold 1994). In this context, both the milieu of innovation analysis of Cyborganic (objective one), and the story of the vital symbiosis of entrepreneurial and utopian social imaginaries (objective two) seemed, in a certain sense, obligatory, like textbook examples of an
Internet culture already familiar to pundits and university researchers alike, and discussed in similar terms by both.

I found the conjunction of scholarly and what I above call “insider” discourses disquieting. It confounded the emic/etic distinction “a principle—if not the principle—conceptual tool” of anthropologists that underlies “the ability to understand and interpret other cultures” (Headland 1990:17).

Emic statements refer to logico-empirical systems whose phenomenal distinctions or “things” are built up of contrasts and discriminations significant, meaningful, real, accurate, or in some other fashion regarded as appropriate by the actors themselves… Etic statements depend upon phenomenal distinctions judged appropriate by the community of scientific observers. (Harris 1968:571, 575)

In other words, “emic” refers to the perspective of “the actors themselves,” those who are the objects of knowledge, while “etic” refers to the perspective of those who seek to know these actors in scientific terms. Because it was impossible to neatly separate emic from etic sources, findings from analysis, my initial representations of Cyborganic came to seem too much like common sense for ethnographic analysis. On the face of it, this obviousness (i.e., this confluence of emic and etic) presents an obstacle to ethnography: what is to be explained and what is explanation? The obstacle being that an anthropologist cannot simply present the self-understandings of her informants as analysis, yet the categories and imaginaries of those self-understandings were largely indistinguishable from many expert perspectives on Internet culture. Such obstacles endure only when they go unnoticed and remain in the blinds where culture works its magic and appears the real, natural order of things.
Once noticed and questioned, they often prove to be rich veins of ethnographic knowledge. In pursuing my initial objectives, I found Cyborganic’s symbiosis of entrepreneurial and utopian—and the narrative of social revolution through computer technologies it articulates—presented just such a paradoxical obstacle: a blind spot of densely overlapping and aligned transparencies. Noticing, questioning, and working to make these visible, gave rise to the third and final objective of this dissertation: grounding the Cyborganic project genealogically within the broader cultural narrative of social revolution, and rooting both in a particular cultural history. The narrative of social revolution through computer technologies is precisely the sort of thing an anthropologist cannot take at face value.

James Holston encountered a similar challenge in his anthropological critique of Brasília’s modernism and utopian project. Recognizing that “a critical analysis cannot simply use for its own categories those that the theoreticians of modernism developed for themselves,” and must “distance itself from such an internal view,” Holston at the same time saw “two great dangers in critical interpretation that distances itself too much: reductivism and dogmatism” (1989:12).

To avoid these charges, a critique of modernism can neither dismiss it out of hand nor reduce it to something else. What is needed instead is a method of assessment similar to what Frankfurt school theorists call immanent or dialectical criticism. This procedure begins with the substance of what is to be criticized and establishes its self-understanding (its premises, intentions, categories, instruments, and the like). It then unfolds their entailments, implications, and consequences which it uses to reexamine the object of investigation. This reassessment reveals its gaps and paradoxes. (Holston 1989:13)
I have adopted a similar procedure in my analysis of Cyborganic, establishing the self-understandings that informed the project, examining the practices and imaginaries entailed, and their implications, seeking not critical distance (cf. chapter 2) but to draw out the tensions and limitations, the “gaps and paradoxes,” immanent in the emic view.

Having traced the development of my objectives, I must make clear that this is an ethnographic text focused squarely on a micro-level analysis of the Cyborganic case. I foreground my overarching arguments precisely because they are built up gradually and intertwined in the cultural history of Silicon Valley, and throughout my history and description of Cyborganic itself. Further, I delineate them at the outset in order to define the concepts and terms of my argument, several of which, as I have noted, have emic and etic meanings that overlap. Chapter 2 lays out my research project and the epistemological and anthropological grounds from which it proceeded. Thus, I focus here on introducing the concepts and social theory that inform my argument, and giving a sense of how I use the terminology I have deployed both descriptively and analytically herein.

**Networked Social Media: Key Terms and Definitions**

Time and again in making my analysis of Cyborganic, I found myself writing of *social imaginaries* and the practices and discourses in which they are articulated, rather than culture, subculture, values, or beliefs, though all are certainly bound up in the concept. Charles Taylor (2002, 2004), Michael Warner (1990), Jurgen Habermas
(1989), and Christopher Kelty (2005), “have suggested that the public, or public sphere, can be thought of as one example of a social imaginary.” “[N]either strictly ideas nor strictly institutions” (Kelty 2005:186), the nation (Anderson 1991), market, and citizen state are others. As Taylor defines the term, social imaginaries are the ways in which people imagine their social existence, how they fit together with others, how things go on between them and their fellows, the expectations that are normally met, and the deeper normative notions and images that underlie these expectations.

I want to speak of social imaginary here, rather than social theory, because there are important—and multiple—differences between the two. I speak of imaginary because I’m talking about the way ordinary people “imagine” their social surroundings, and this is often not expressed in theoretical terms; it is carried in images, stories, and legends…it is shared by large groups of people, if not the whole society…the social imaginary is that common understanding that makes possible common practices and a widely shared sense of legitimacy. In addition, we should note that what start off as theories held by a few people may come to infiltrate the social imaginary, first that of elites, perhaps, and then of society as a whole. This is what happened, *grosso modo*, to the theories of Grotius and Locke, although the transformations have been many along the way, and the ultimate forms are rather varied. (Taylor 2002:106)

In this passage, Taylor introduces several ideas key to my use of the social imaginary concept. First, the concept covers social phenomena an earlier generation of anthropologists, such as Kroeber and Kluckhohn (1952), would have spoken of as *culture*, defined as that complex of human behaviors—including language, symbols, beliefs, values, manners, customs and practices—through, by, and in which human collectivities are instantiated. However, though it touches on this whole range of phenomena, the social imaginary pertains more specifically, to the images through which people conceive both their collectivity and “their social surroundings,” the
conditions of their collectivity. Thus, in a manner similar to the culture concept, social imaginaries are both figure and ground, contributing, so to speak, to the gestalt of a unified whole. They extend to the “‘repertory’ of collective actions at the disposal of a given sector of society” and the “background understandings behind them” (Taylor 2002:107).

Warner examines the way uses of print media realized new publics, “imagined communities,” in 18th century America. Drawing on Habermas (1989) and Anderson (1991), he employs the phrase “mediated imaginings” to emphasize the importance of cultural context for common understandings and practices to emerge around the use of media.

The most salient difference between the traditional culture of print and the republican one is a set of assumptions developed in the late seventeenth and eighteenth centuries, on the basis of which print could be taken as normally impersonal. By ‘normally impersonal,’ I mean that the reader does not imagine him- or herself receiving a direct communication or hearing the voice of the author. He or she now also incorporates into the meaning of the printed object an awareness of the potentially limitless others who may also be reading. For that reason, it becomes possible to imagine oneself, in the act of reading, becoming part of an arena of the national people that cannot be realized except through such mediated imaginings. (Warner 1990:xiii)

Cyborganic’s collectivity centered on the production and consumption of networked media, new “mediated imaginings” of community, genres and practices of networked social media. Thus, Warner’s attention to publics and publications—spaces of discourse that exist “by virtue of being addressed”—extends the social imaginary to my topical locus. His observations—“A public is always in excess of its known
social basis;” “It must include strangers,” and “A public is a relation among strangers” (Warner 2002:55)—are of particular anthropological relevance to my analysis of Cyborganic, the community form in which it was realized, and publics it addressed through its website and other media. Warner’s keen analysis of “publics and counterpublics” highlights a useful point of distinction between a public as relation among strangers, and a community, which—in emic and etic parlance alike—has rather the opposite connotation.

Kelty (2004, 2005), too, imports the social imaginary to the topical domain of my study in his identification of a type of public “specific to the Internet”

whose defining characteristic is recursive in nature: a group constituted by a shared, profound concern for the technical and legal conditions of the possibility for their own association. I call this mode of association a “recursive public”; the people who participate in it will be called “geeks”; and the Internet is the condition of their association. (Kelty 2005:185-186)

Kelty studied a group of geeks focused on the technical and legal protocols that made possible the condition of their association. While a number of Cyborganics were also involved in groups such as the “Silk List” he describes (e.g. the Apache project), Cyborganic as a whole was a community constituted through its members’ shared concern for the social, practical, and everyday conditions of their association. As my examination of the group’s weekly dinners and mailing list (chapter 5) will show, Cyborganic, too, exhibited the characteristics of a recursive public.

Given that Cyborganic was an intentional project to create community, the term social imaginary has been invaluable for enabling me to speak collectively
about the group’s norms and practices without imparting to them the boundedness implied by the terms “culture” or “subculture”. The theoretical basis for my caution against assumptions of boundedness will be discussed in the next chapter, but the empirical basis lies in the fact that Cyborganics, the people I studied, were members of a community with its own set of social practices and imaginaries, and simultaneously members (natives?) of U.S. and Internet geek culture; and various youth subcultures (e.g., rave) that might be called “alternative.” Cyborganic members were also part of the age cohort dubbed “Generation X,” described in this passage from *alt.culture: an a-to-z guide to the 90s—underground, online, and over-the-counter* (Daly and Wice 1995).

With the notable exception of hip-hop, no major youth movement emerged during the ‘80s— in hindsight, the backlash looks inevitable. It came in the shape of a generation of musicians, designers, film- and other culture-makers who in large part defined themselves against the prevailing ethos, just as the original punks were galvanized by the rock-star excesses of the ‘70s. Comparisons were frequently made to America’s last youth culture boom, in the 1960s, but chief among many differences was the fact that where hippie culture organized itself around rockstar iconography, the ‘90s were a pantheistic throwdown of self-expression and consumer choice. (Daly and Wice 1995:xiii)

In this context, the social imaginary concept enables me to talk about the images and vernaculars employed by my informants whether they are part of mainstream U.S. culture, Internet culture (described in chapter 4), or a particular youth subculture.

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4 The title of is an allusion to the alt. (“alt-dot”) class of Usenet newsgroups.
Media is another key term in my description and analysis of Cyborganic, as my objectives and discussion of Warner and Kelty indicate.

Communications genres—culturally specific forms of communication such as songs, jokes, stories, and conversations—occur in media… In media studies scholarship, the term…encompasses communications channels, technologies, formats, genres, and products. At base, however, media in this sense is best defined by what it is not: face-to-face communication. (Spitulnik 2001:143)

Debra Spitulnik’s definition of media as communication that is not face-to-face is especially apt for my study of Cyborganic, a project rooted in the premise that online and face-to-face interaction are mutually sustaining and can be used together to build uniquely robust communities.

Lisa Gitelman’s remarkable examination of the ways new media “are experienced and studied as historical subjects”—through the emergence of recorded sound and digitally networked text in public life and memory—has also served as a conceptual building block for my understanding of media and Cyborganic (Gitelman 2006:1). Gitelman writes:

I define media as socially realized structures of communication, where structures include both technological forms and their associated protocols, and where communication is a cultural practice, a ritualized collocation of different people on the same mental map, sharing or engaged with popular ontologies of representation… Defining media this way admittedly keep things muddy. If media include what I am calling protocols, they include a vast clutter of normative rules and default conditions, which gather and adhere like a nebulous array around a technological nucleus. Protocols express a huge variety of social, economic, and material relationships. So telephony includes the salutation “Hello?” (for English speakers, at least), the monthly billing cycle, and the wires and cables that materially connect our phones. E-mail includes all the elaborately layered technical protocols and interconnected service providers that
constitute the Internet, but it also includes the QWERTY keyboards on which e-mail gets ‘typed’ and the shared sense that people have of what the e-mail genre is. (Gitelman 2006:7-8, emphasis mine)

Gitelman’s definition has been particularly instrumental in enabling me to describe the kinds of innovation Cyborganics engaged in through their mutually constituted online and face-to-face collocations and mediated imaginings (i.e. social imaginaries). In its focus on community and self-publishing, Cyborganic prefigured many of the norms, forms, and practices of networked social media that have —with the rise of blogging, websites like Friendster, Facebook, and MySpace, and a host of other many-to-many media collectively known as “Web 2.0”—become predominant. Thus, in pursuing my first objective, I assay Cyborganic’s productivity and innovation in terms of Web publications, firms, and software, but also in terms of new production processes, genres, and sensibilities.

Two further definitions figure in my analysis of Cyborganic as a community of new media producers and users. The first is Shoshana Zuboff’s identification of a “fundamental duality” between information technologies that automate, that is, “replace the human body…enabling the same processes to be performed with more continuity and control,” and those that, in her coinage, “infomate,” meaning they simultaneously generate “information about the underlying productive and administrative processes” of the work they automate. While the logic of automation “hardly differs from that of the nineteenth-century machine system,” Zuboff observes, “information technology supersedes the traditional logic” because it feeds back on itself by introducing
an additional dimension of reflexivity…Information technology not only produces action but also produces a voice that symbolically renders events, objects, and processes so that they become visible, knowable, and shareable in a new way. (Zuboff 1988:9-10)

Technologies that infomate form the technological nucleus for the array of phenomena which have recently been labeled “Web 2.0,” but which I prefer to call networked social media. The rationale for my preference is not simply that “Web 2.0” is, as Tim Berners-Lee has put it, “a piece of jargon,” but rather that it defines in technical terms phenomena (uses of media) that are not technically distinguishable from those they are said to supersede. Further, Web 2.0 excludes the most massively popular genres such as e-mail, text and instant messaging (IM) on the basis that they are not Web applications.

Open source software proponent and publisher Tim O’Reilly coined the term “Web 2.0” for a conference in 2004, defining it in late 2005, writing:

Web 2.0 is the network as platform, spanning all connected devices; Web 2.0 applications…[are] delivering software as a continually–updated service that gets better the more people use it, consuming and remixing data from multiple sources, including individual users, while providing their own data and services in a form that allows remixing by others, creating network effects through an “architecture of participation.” (in Scholz 2008)

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5 Tim Berners-Lee originated the World Wide Web protocols developing the first Web browser and server at CERN between 1989 and 1991 (Moschovitis et al. 1999:162-164; Castells 2001:15). His widely quoted comments (e.g., in Scholz) about “Web 2.0” were made in an interview with Scott Laningham of I.B.M.’s developerWorks, a full transcript of which is online at: http://www-128.ibm.com/developerworks/podcast/dwi/cm-int082206.txt.
Despite the talk of platforms, applications, and architecture, the social networking sites and services “Web 2.0” encompasses do not represent a change of technical specifications so much as the extension, popularization, standardization, and commercialization of social practices and “realized structures of communication” that emerged in the early days of the Web and through the long history of computer-mediated communication.

Thus, while I use “Web 2.0” as an emic term (one closely associated with the wider public of Internet geeks in which Cyborganic was included), in my analysis I employ the compound networked social media to refer to the exponential extension and popular proliferation of communications forms, practices, and mediated imaginings developed concurrently in the growth of networked personal computing (discussed in chapter 3). All communications media are axiomatically social. Thus, what I mean to highlight by applying the word “social” is a focus on infomated, many-to-many communication which, at the level of production, involves social design—that is, engineering the system to enable and promote certain forms of connection (e.g., “send this to a friend” links)—and at the level of consumption involves social networking (a particular way of using media). Similarly, the term “networked” points both to the technical infrastructure of these media that enable aggregation of infomated data streams, and to the practices and imaginaries of their use. Networked social media thus refers to the nexus of (1) user-generated content (aggregation/participation), (2) social design/social networking, and (3) computer-mediated community. All elements of the nexus are present in contemporary Web
phenomena such as Wikipedia, Flickr, YouTube, MySpace, and del.icio.us, though each element is positioned differently in different genres, services, and contexts.

For example, Wikipedia, “the free encyclopedia that anyone can edit”\(^6\), emphasizes user-generated content, yet building and maintaining it involves both social design/networking, as well as computer-mediated community. What I mean by community (a key term examined in the next section of the chapter) is that Wikipedia encompasses a hierarchy of “user groups” with different roles, relations, and rights (e.g., permissions to access and change front- and back-ends of the system). These “access levels” are listed on the Wikipedia site as:

1 User groups\(^7\)

1.1 Anonymous users
1.2 New users
1.3 Autoconfirmed users
1.4 Bots
1.5 Rollbackers
1.6 Administrators
1.7 Bureaucrats
1.8 Oversights
1.9 CheckUsers
1.10 Stewards
1.11 Developers
1.12 Founder

Though all are listed under “user groups,” the repetition of the word “user” in the names for groups 1.1 through 1.3 separates them from the rest. While these


“user/users” might generally be seen to constitute a public, a relation among strangers, that is not the case for the higher level groups that work to maintain and improve Wikipedia; decide what improvement entails; and arbitrate the application of standards—from formatting specifications to applying “notability guidelines”\textsuperscript{8} to determine whether or not a subject merits its own article. In doing so, these “producer/users” of Wikipedia (a term explicated in chapter 3) are not quite the strangers of Warner’s publics and, I would venture, in their core/corps of active members constitute a social form one might speak of as community. I have not undertaken ethnographic study of Wikipedia, but present the familiar example to clarify my claim that all three dimensions of networked social media delineated above are necessary to the amorphous array of phenomena known as “social networking” and “Web 2.0.” My claim itself will be argued through the cultural history of networked personal computing (in chapter 3) and ethnography of Cyborganic (chapter 4-6), that emphasize the role of communities of producer/users in realizing the structures and genres of communication encompassed in these new media.

**Community: Social Imaginary and Social Theory**

Having defined the other key terms of my analysis, I come now to the keynote itself, the tonic, or tonal center of this work: community. The word itself

carries such a freight of meaning, emic and etic, that my intention here is not to define it, but rather explain how I deploy the term in description, analysis, and argument. In essence, my aim is to present the reasoning that informs my use of “community.” From an ethnographic perspective, the first thing that must be said is that “community” is a word I encountered in the field. Cyborganic was a self-described community whose members used this appellation more than any other to refer to their collectivity. Indeed, community was the central social imaginary shared by members, whom I identify as “Cyborganics.” As such, it is as much the tonal center of my object of study as it is of the study itself. Yet, emic use is no reason to employ the term in social analysis. My second rationale for the term stems from seeing community as Cyborganic’s formative and framing social imaginary. Community is, to paraphrase Geertz (1976), what “the natives” say they’re up to. While this licenses using “community” to describe the emic perspective of my informants, I also use the term to make etic statements and this is the use that requires more exposition and contextualization.

In scholarly discourse, as in the vernacular, the term community carries a good deal of baggage and is the topic of a voluminous literature that has grown in conjunction with growth of the Internet. I, thus, begin by identifying questions my analysis does not address, namely, whether online communities are as real as those not mediated by computers or whether they instead represent a type of “pseudocommunity” (Beniger 1987). Or, from another angle, whether computer-mediated-communication engenders dynamic new forms of community, or breaks
down and subverts such social formations. The proliferation of the Internet and ubiquity of the term \textit{community} in popular and expert discourse precipitated widespread debate of such questions. Computer-mediated communication (CMC) has long been studied in work and institutional settings (Rice 1988; Sproull and Kiesler 1991; Jones 1995). However, since the 1990s a growing body of scholarship in a variety of disciplines has come to focus on communities online (Rheingold 1994; Kollock and Smith 1994; Jones 1995; Wellman and Gulia 1999). Steven Jones, who has edited three anthologies on communication and community in “cybersociety” (1995, 1997, 1998), has argued that both popular discourses hyping virtual communities and many academic discourses critiquing them reveal a yearning for community in contemporary culture (1995). The idea that the Internet can bring about new and better social forms is something many people seem to “want or need to be true” (Burnett 1996). Researchers have looked at the way online communities succeed or fail at creating meaningful, interpersonal connections and at the social and discursive norms and practices shaping that process (e.g. Baym 1995; Stoll 1995; Barnes 2001). They have focused on identity and embodiment and the way in which computer-mediated communication can contribute to both increased social connection as well as socially disruptive forms of identity play (Turkle 1984; Stone 1991; Dibbell 1998).

While I am deeply interested in what happens in social interaction online, I am not concerned with the “realness” or virtuality of communities. These are not the community questions I address, for I hold with Anderson that “all communities
larger than primordial villages of face-to-face contact (and perhaps even these) are imagined. Communities are to be distinguished, not by their falsity/genuineness, but by the style in which they are imagined” (Anderson 1991:6).

Even before Anderson’s watershed book, *Imagined Communities* (1991), the concept of communities as self-contained, bounded in place and defined by face-to-face interaction (Foster 1953; Redfield 1960), had been challenged in anthropology (Barnes 1954; Bott 1957; Mitchell 1969; Boissevain and Mitchell 1973), and it has fallen out of favor in current theory, if not entirely in practice (cf. Gupta and Ferguson 1997b, 1997c). This shift in anthropological thought is examined in the next chapter so let me simply state my agreement with Samuel Wilson and Leighton Peterson who write:

> Our view, and one that seems most consonant with current anthropological theory and practice, is that the distinction of real and imagined or virtual community is not a useful one, and that an anthropological approach is well suited to investigate the continuum of communities, identities, and networks that exist—from the most cohesive to the most diffuse—regardless of the ways in which community members interact. (Wilson and Peterson 2002:456)

These anthropologists also make another point of value to my study in “acknowledging that individuals within any community are simultaneously part of other interacting communities, societies, or cultures,” “bounded to different extents (2002:455).” Though Cyborganic constituted a community, as my case study will show, its members were simultaneously members of other collectivities (e.g. geeks, ravers, American society).
The online/offline conceptual dichotomy so prominent in early social research on the Internet has been supplanted by attention to ways the Internet is taken up in everyday life, and by a growing appreciation for the mutuality of these domains.

[Online] community extends beyond the Internet into face-to-face communities, inextricably linking the Net into local communities and struggles. Conversely, such struggles and perceptions are bound into a network which is mediated through the Internet, through other mass media such as television, and through individual social dialogue. The Net itself is mediated by everyday life. (Shields 1996:8)

The perspective that emerges in this literature is one in which online and offline worlds are interdependent and socially co-constructed. Communications scholars (Jones 1995, 1997, 1998; Shields 1996; Gurak 1999), social geographers (Kitchin 1998), sociologists (Smith and Kollock 1999; Wellman and Gulia 1999) and ethnographers (Miller and Slater 2000; Hine 2000) have all taken this approach in their work on the Internet. Wellman has been particularly influential in promulgating the understanding that people do not neatly divide their worlds into two discrete sets: people seen in-person and people contacted online. Rather, many community ties connect offline as well as online. It is the relationship that is the important thing, and not the communication medium. (Wellman and Gulia 1999:182)

Such understanding, which directs attention to the relationships mediated by technology, underlies the approach I have taken in highlighting the role of communities in milieus of innovation. By emphasizing the importance of community as a social form, and situating Cyborganic in the cultural history and social
geography of Silicon Valley, I have taken the perspective that online and offline realms are mutually interdependent and co-constructed.

Finally, in terms of social theory, the community concept invokes questions of social morphology, that is, of the relation between small face-to-face social forms—such as households and neighborhoods—and the larger society of which they are part. As Wellman framed it for urban sociology twenty years ago, “the community question” is essentially a structural one.

The basic question—*the community question*—is how the large-scale structure of social systems reciprocally affects the small-scale structure and contents of interpersonal relations within them. Traditionally the public (as well as scholars) have called such ties “communities” when they have clustered in neighborhoods. But much the same issues pertain to the study of kinship groups, households and work groups. (Wellman 1988:82)

The present work looks at the reciprocal effects of small and large-scale social forms in several places and ways. In situating Cyborganic within the long cultural history of Bay Area technocultures (chapter 3), I examine the role of the U.S. government, defense spending, and research universities in the genesis of Silicon Valley’s high technology industry and communities of producer/users. Reciprocally, I point up the role of these communities, their practices, and social imaginaries in spurring and structuring technical and business innovation in the region. In a similar way, my ethnographic chapters (4-6) describe the interplay of Cyborganic (and other face-to-face communities) with larger structures and systems of production and distribution in U.S. society: for example, those of venture capital, stockholder corporations, and advertising-supported media. Because this is an ethnographic text based on
participant-observation research, these larger structures are examined from the
ground, that is, the micro-level of my informants’ everyday lives. Therefore, in order
to frame my subject (Cyborganic) more broadly and situate it in relation to macro-
level social structures and forces, my analysis also draws on Manuel Castells’
theorization of network society in his trilogy on economy, society, and culture in the
interest in the structural question of community that Wellman delineates and, in
particular, the question of how information and communications technologies affect
the reciprocal relations of large- and small-scale social forms. Taken together
Castells’ analysis of “informationalism” as a new global mode of development
(1996, 1997, 1998); his characterization of the “culture of the creators of the
Internet” (2001:37); and his extensive research of cities and urban culture in
advanced capitalist societies (1977; Susser 2002); provide insight into the
community question and a comprehensive frame connecting my milieu of innovation
analysis of Cyborganic with my analysis of the group’s social imaginaries and
practices of community.

Chapters and Objectives

As noted at the outset, my three overarching objectives in this
work—showing Cyborganic’s milieu of innovation, elucidating the relation of its
entrepreneurial and communitarian aspects, and grounding a critique of the narrative
of social revolution through technology—are not treated discretely but advanced
throughout the work. Initially, I tried to separate description from analysis and grappled unsuccessfully with different ways to break up my ethnographic subject to support that aim, for example, dividing online from face-to-face, or the Cyborganic business from the community. In this process, I deepened my understanding of the mutualism of Cyborganic’s constituent parts and came to see my difficulties in separating them as further evidence of their symbiosis. Thus, while the structure of this work might seem unconventional, it takes its shape from my understanding of the object of investigation itself. Each chapter combines description, analysis, and argumentation of my main objectives, along with a number of contributory and corollary findings and interpretations.

I begin chapter 2, “Epistemology, Fieldwork, and Situated Knowledge,” with a description of my research project, fieldwork, and methods, giving an account of how I came to know what I claim to know about Cyborganic. Here I lay out the epistemological and anthropological grounds on which my research has proceeded, situating my work in relation to current thought and practice in the discipline. The understanding of situated knowledge articulated in this chapter shaped my field study and representation of its findings. This view of knowledge leads me to begin by situating my work within anthropology, and situating myself in the work, describing my positionality as the ethnographer of a community in which I was a member, and bringing the questions of objectivity, subjectivity, and “native” anthropology raised in the chapter to bear on my Cyborganic research. Situated knowledge also informed my decision to begin my representation of Cyborganic, not with a description of the
group itself, but by locating the community within a particular regional and cultural history (in chapter 3).

Chapter 3, “Cyborganic Sources: Technocultures and Countercultures,” traces the subcultures and cultural legacies that came together in Cyborganic. In one sense it is a cultural history of both networked personal computing and Silicon Valley (paragon of the technopole) that traces the role of communities of production and use in the rise of the Bay Area as a hub of technoculture over the last century. In another sense, this chapter is a genealogy of the “culture of the creators of the Internet” (Castells 2001: 37) attentive to the formation of practices, values, norms, and knowledge, rather than “a quest for their ‘origins’” (Foucault 1977:144-145).

Castells has characterized Internet culture as “a blending of military strategy, big science cooperation, and countercultural innovation” (1996:351). I work in this chapter to show how these disparate lineages came to be amalgamated in Internet culture and to establish Cyborganic’s relation to these ancestors. My aim through this chapter is to highlight the role of communities in the social construction of both the Silicon Valley region and the technologies through which it was developed. By emphasizing the importance of such small-scale social forms and situating them in the cultural history and social geography of Silicon Valley, I have taken the perspective that online and offline realms are mutually interdependent and co-constructed. This chapter works toward all three of my overarching objectives to different degrees. It prepares the way for the milieu of innovation argument by demonstrating Cyborganic’s kinship to the communities within which Silicon
Valley, the Internet, and the personal computer were developed. It elucidates the circumstances and processes through which entrepreneurial and communitarian imaginaries were alloyed in Internet culture. And, most importantly, it shows the long history and role of large-scale social structures in the development of Silicon Valley and Internet culture.

In chapter 4, “Cyborganic as Network of Innovation: A History of the Project,” I turn my focus to the Cyborganic community itself and to the first objective of demonstrating its innovation, showing Cyborganic as exemplary of the regional advantage of technopoles. Here I recount the history of the project, beginning with an explanation of Cyborganic’s vision and central premises. Though I describe Cyborganic’s growth as a local, online community, and as a business, this chapter is essentially a network history. That is, it gives a narrative account of the individuals, firms, projects, and communities that connected Cyborganics to each other and to San Francisco’s Web industry in the mid-1990s. As such, it identifies the contributions of Cyborganic members to the development of new Web-publishing firms, software, and production processes. Two thematic arguments are developed in the analysis of this network history, both in the service of my first objective—showing Cyborganic as exemplary of the regional and cultural advantage of milieus of innovation. The first compares Cyborganic to communities of producer/users discussed in chapter 3, enumerating the legacies inherited from this earlier generation of Internet culture, and highlighting their common symbiosis of technology, enterprise, and sociality. The second argues that Cyborganic drew on
Silicon Valley's culture of entrepreneurial sociality to join place, technology, and community in new productive relationships that yielded new businesses, commercially successful software products, and process innovation.

In contrast to tracing linkages to and from the community, chapter 5, “The Cyborganic Whole: Business and Community, Online and Onground,” looks internally at Cyborganic’s constituent parts, people, and practices. Business and community, online and face-to-face: these were the symbiotic pairs I had initially tried to partition. Thus, in this chapter I work to give an *in vivo* sense of the norms and forms of networked social media the group produced and practiced in its own community. The analysis in this chapter works to show the inseparability of Cyborganic’s business and community projects, and their mutually reinforcing articulation online and onground. This demonstration serves the first of my monograph’s objectives (the milieu of innovation argument), and also the second (examining the relations of entrepreneurial and communitarian), in two ways. First, it details a number of innovative forms and uses of networked media within Cyborganic that have—with the rise of blogging, websites like Friendster, Facebook, and MySpace—become predominant. Second, it illustrates the vital roles place, culture, and dense social ties of community play in milieus of innovation by showing the multiple synergies of Cyborganic’s online and face-to-face, entrepreneurial and communitarian dimensions.

In chapter 6, “Project for Life: Cyborganic’s Creative and Communitarian Imaginaries,” I turn from the milieu of innovation argument advanced in previous
chapters, to examine the utopian aspects of Cyborganic. By looking specifically at these phenomena, I seek to provide both a sense of their emic cultural meanings, and to clarify my characterization of them as utopian. I argue that Cyborganic’s creative and communitarian practices and imaginaries are best understood as a response to the economic, social, and cultural transformations of network society. I call this response a “project for life” to distinguish it from the business project, and to propose that Cyborganic be understood as a cultural commune of the type Castells describes as aiming to produce a “local utopia” addressed to “the real issues of our time” (Castells 1997:61). As such, it was a defensive project, aimed at providing a support system for its members and a refuge against the atomizing, individualizing forces of urban life. However, I argue, Cyborganic was also a creative project that can be understood in the broader context of “urban social movements” (Castells 1997:60). To support this analysis, I discuss the utopian ideals at the core of the business vision then show that the wider community also shared these ideals by presenting examples of member-organized projects. The significance of the group’s communitarian projects, practices, and imaginaries, I argue, can be seen in the continuing influence of Cyborganic as an exemplary community for imagining and managing life in contemporary, urban society. In the second part of chapter 6, I turn to the tensions between Cyborganic’s entrepreneurial and communitarian dimensions and, thus, to my second objective of elucidating the relation between the two. While earlier chapters emphasized the productive synergies of business and community, here I bring to the surface conflicts and contradictions—“gaps and paradoxes”
(Holston 1989:13)—apparent from the ethnographic material presented throughout the work. This analysis initiates my critical consideration of the ethnographic case and readies the way for me to pursue my third objective in the final chapter.

Chapter 7, “Cyborganic and Social Change: The Power and Limits of Community,” returns to the “community question” about the relation of large- and small-scale social structures. While the preceding chapter drew out the tensions between Cyborganic’s entrepreneurial and utopian imaginaries and practices, this one addresses the limitations of its community form in terms of addressing “the real issues of our time” (Castells 1997:61). The story of Cyborganic told in this ethnography is a story about the productive power of community, in particular, of intentional communities mobilized in conscious projects of self-creation. But it is also a story of constraints and limitations on this power vis-à-vis larger social structures and cultural forces.
Chapter Two

Epistemology, Fieldwork, and Situated Knowledge

Every judgment in science stands on the edge of error, and is personal. Science is a tribute to what we can know although we are fallible.

Jacob Bronowski (1973:374)

Feminist objectivity means quite simply situated knowledges…The goal is better accounts of the world, that is, “science.”


It is conventional in social science to account for research methods, explaining how one came to the knowledge presented, establishing both the basis and limits of this knowledge. While that is its purpose, this chapter moves beyond matter-of-fact description of the study and methods of data collection to produce a different sort of account. In it I seek to: (1) describe my field research and methods; (2) explain the epistemological and disciplinary grounds from which my work proceeds; and (3) address questions of my positionality as the ethnographer of a community I helped create, lived in as a member for many years, and in which I remain bound. Put simply, the goals are to outline my research, situate my work in anthropology, and situate myself in the work.

Central to these objectives—and implicit in the research project itself—is an understanding of knowledge as socially constructed, partial (Geertz 1973, 1983; Clifford and Marcus 1986), and situated (Abu-Lughod 1991; Clifford 1988; Haraway 1988; Rosaldo 1989), rather than universal and transcendent; and of ethnographic
fieldwork as an intersubjective process (Briggs 1970; Geertz 1971; Rabinow 1977) that involves “the whole self” (Kondo 1986). I refer to this perspective as situated knowledge. While the first section of this chapter presents a fairly conventional description of my research project, fieldwork methods, and data collected, I turn in the second section to explain what I mean by situated knowledge and identify the theories and practices of anthropology in which it is grounded. Not simply background, this context defines the basis for my claims to knowledge, guiding the conception of my Cyborganic research; shaping my practice in the field; and informing the representations and analysis in this ethnography. Drawing on this context, my third objective is to put situated knowledge into practice by addressing questions of objectivity, subjectivity, and positionality, in my work as the ethnographer of a community I helped build and have been part of for going on fifteen years. In a sense, the third section of the chapter, applies the theory described in the second section to the practice described in the first.

**Finding the Field**

On August 15, 1993, three days after handing in my Masters thesis, I packed a moving van with my worldly goods and drove from Los Angeles to San Francisco to become a participant-observer of the scene that was flourishing there around techno music, raves, multimedia, and networked computing. I felt an urgency to get into the field to investigate the groundswell of excitement and activity around new media technologies in the Bay Area. My awareness of this scene—and its palpable
Zeitgeist of enthusiasm for the expressive and socially transformative power of computer media—had been growing all year.

That January, I began collaborating with my college friend Jonathan Steuer on a grant proposal to conduct video research of computer use at Apple Computer's Vivarium magnet school in Los Angeles. Steuer, then a doctoral student in Communication at Stanford, lived in San Francisco in an apartment on Ramona Avenue that he shared with two roommates. In the course of working on the grant proposal, I made several visits to San Francisco and stayed at this apartment each time. I slept on the couch, ate with Steuer and his roommates, and joined them in the social activities of their everyday lives. The group household and “techno scene” in which its members participated impressed me. All in their twenties, Steuer and his housemates were a close group, sharing grocery and household expenses; coordinating tasks; attending raves, parties, and other multimedia events; and cooking and eating together along with other members of their growing community. I was particularly fascinated by this social life because at the time I was writing a Masters thesis on suburban homeowners and the subject of community was on my mind.

What struck me was the stark contrast between the lives of my suburban informants and the vibrant, urban life I saw in San Francisco. While the homeowners I studied, pink collar and middle-aged, were isolated via long commutes, bedroom communities, divorce, and the wider destabilizations of U.S. family and civic life;
the young “net ravers” I met in San Francisco were working to build lives against such isolation. They were using new technologies to pursue the same sort of lifeworld (Habermas 1987) projects my suburban informants pursued through homeownership; and were talking deliberately, and rather evangelically, about building community through “the Net.” My brief experiences of some of the communities that they were part of affected me profoundly. Cognitively and professionally, I saw a rich research subject; affectively and personally, I saw the kind of collaborative community to which I aspired. Thus, my visits to San Francisco in the spring of 1993 were my entry point into the San Francisco communities I would set off to study that fall.

A second, equally important, entrée also came about through collaboration on the Vivarium grant proposal. In order to facilitate working together at a distance, Steuer gave me an account on his department’s host computer, casa.stanford.edu. This was my first Internet account and facilitating work was only one of the things it was good for. It helped me maintain connections made during my visits to San Francisco after I returned to Los Angeles to finish my Masters thesis. It gave me access to the many wonders of the pre-Web Internet (mailing lists, Usenet, FTP and Gopher servers); and — later in 1993, after the release of Mosaic 1.0, the first popular Web browser — to the World Wide Web. The account opened a whole new world to me. Yet, rich and strange as it was, it was also a world populated, at least in certain neighborhoods, by welcoming, familiar faces: people I’d met in San Francisco, or
heard of, friends of friends, and fellow travelers. With online friends to demonstrate how and why they used the Internet and, most importantly, to use it with me in practice, I began to understand their enthusiasm. I also began to appreciate the power and value of combining face-to-face and online interaction. In this way, my visits to San Francisco in early 1993 and my first Internet account served as key points of entry into the research questions and fieldwork of this dissertation.

In addition to the sense that something anthropologically significant was taking place online and in San Francisco, my decision to go into the field to study the techno-communitarian practices and discourses I encountered there had other personal and practical inputs. One was a response to Donna Haraway’s “A Manifesto for Cyborgs” (1985) that urges all who would oppose domination (in its myriad forms) not to let technical knowledge remain the province of the “high-tech boys.” I read Haraway’s appeal as a personal call to take up ethnographic study of high-tech culture. Thus, when my friend Steuer asked in mid-1993 if I would be interested in collaborating with him on the Cyborganic project, I saw my opportunity. By the end of the summer, I had packed up my life in Los Angeles, and set off for the Bay Area to begin the fieldwork on which this dissertation is based.

The Research

My Cyborganic study followed the ethnographic tradition of participant-observation in which the anthropologist lives among those he is studying during an extended period of fieldwork. From August 1993 to June 1999, I lived and worked in
San Francisco among members of the Cyborganic community. As a participant, I resided in a group household in the neighborhood Cyborganic came to occupy; worked at Netscape Communications and a number of other Internet start-ups, including the Cyborganic Corporation; and took part in a variety of cultural activities and non-work communities, such as SFRaves, Anon Salon, and Burning Man. As an observer, I researched telecommunities for the Institute for the Future (IFTF); and pursued my own ethnographic work conducting interviews, writing field notes, studying and archiving the media generated by my subjects (Appendix A). Though I was a founding member of the Cyborganic project, fellow members knew me as a social anthropologist who had come to San Francisco to study networked communities and the burgeoning cyberculture.

Two IFTF research projects were particularly valuable to me in situating Cyborganic within the wider context of Silicon Valley culture and industry. The first was a study that examined the intersection of corporate intranets and online communities through case studies of groups at Hewlett-Packard, Silicon Graphics, and Cyborganic (IFTF 1997a). I developed the interview questions for the study (Appendix B) and, with three other researchers, conducted ethnographic interviews with group members. The interviews with Cyborganic members provided far more material than was taken up in the IFTF study and they have proven a valuable source for this ethnography.
In the course of this IFTF study, our research team also elicited a group history of Cyborganic at an open meeting held at Cyborganic’s offices on December 19, 1996 and attended by fifty-three community members. Two IFTF researchers (Andrea Saveri and Tomi Nagai-Rothe) facilitated the meeting using techniques honed in previous sessions with stakeholders in online communities. The main elicitation device was a huge sheet of paper (approximately 4 feet by 30 feet) affixed to one wall of the large, open space. The paper was blank except for a timeline with years marked out across the top (x-axis), and a column down the left side (y-axis) identifying the categories of information we wanted to collect. The categories were: “big ideas and themes;” “reflections and learnings;” “trends;” “stories;” “events;” and “challenges.” Cutout paper figures were provided and people were asked to write their names on these and attach them to the map at whatever point they became part of Cyborganic. The facilitators then asked group members to share reflections and recollections of Cyborganic, recording these on the map as they went along, pausing periodically to ask questions or moderate discussions that broke out. The group history gathered in this session was used to produce an illustrated timeline of “Cyborganic History and Evolution” (Appendix C) that has served to guide the chronicle and ethnography presented in chapters 4, 5, and 6.

In 1997 I participated in a second IFTF project as a visual ethnographer collecting images and conducting interviews for the workshop “Images and Stories of a New Silicon Valley: Transformation of Consumers, Communities, and Public
Space through New Media Technologies” (IFTF 1997b). The workshop looked at San Francisco’s South of Market Street area (SOMA), as a prime example of key shifts in technological innovation and development, including the growing role of consumers and users in driving innovation, and the phenomenon of “outposting” whereby businesses in established regions (such as Silicon Valley) spawn nearby outposts in a process of “short-distance decentralization” (Castells and Hall:235). Just as my earlier work for IFTF, this project provided valuable comparative data for my study of Cyborganic, pointing up those aspects of the group that were part of broader social trends.

**The Grounded Theory Method**

Essentially, my research has proceeded according to the grounded theory method of qualitative research. This method “stresses discovery and theory development” rather than reasoning from “prior theoretical frameworks” (Charmaz 1983:110). I began researching the techno-communitarian practices and discourses of San Francisco geeks because they appeared to represent an innovative response to the problem of making meaningful social connection in the highly individualistic and mobile society of late twentieth century America. I wanted to study this response anthropologically, examining the practices and social imaginaries of community that it entailed. In my initial period of field research I did not draw directly on any theoretical frame. Yet, in grounded theory, data collection and analysis proceed simultaneously: as my interests developed and specific themes and categories began
to take shape, I started to examine the pertinent literature. Ultimately, in writing up
my research, I worked to situate my own interpretations in relation to this
scholarship.

**Situated Knowledge: Objectivity as the View from Somewhere**

As the epigrams at its head suggest, the basic premise of this chapter is that
scientific knowledge is partial, personal, and situated; and even so, the production of
better accounts of the world\(^1\) remains its goal. Neither universal, nor transcendent, its
claims to knowledge do not rest on the separation of knowing subject from known
object. This understanding draws on Donna Haraway’s critical theorizing of a
feminist objectivity (1988) and also on the reconfigurations of thought and practice
with which anthropologists have responded to critiques of the discipline’s colonialist
and positivist legacies. As this discussion will show, both address the problem of
what can count as knowledge after the collapse of the Enlightenment’s grand
narratives.

In “Situated Knowledges: The Science Question in Feminism and the
Privilege of Partial Perspective” (1988), Haraway proposes a feminist objectivity that
charts a course between a radical constructivism in which science is merely “a
contestable text,” and a critical empiricism anchored in the modern projects of
humanist rationality. She argues that feminists cannot be content with critiques of

\(^{1}\) By this I mean, to use Haraway’s words, “enforceable, reliable accounts of things
not reducible to power moves and agonistic, high-status games of rhetoric or to
positivist and humanist objectivity; and that they need their own doctrines of objectivity—their own ways to talk about reality, and better or worse accounts of it.

The problem, as Haraway sees it,

is how to have simultaneously an account of radical historical contingency for all knowledge claims and knowing subjects, a critical practice for recognizing our own “semiotic technologies” for making meanings, and a no-nonsense commitment to faithful accounts of a “real” world. (Haraway 1988:579)

The solution Haraway proposes for this combination of knowledge practices is “a usable, but not an innocent, doctrine of objectivity” that she refers to as “situated knowledge,” “positioned rationality,” and “views from somewhere.” This situated objectivity differs fundamentally from Enlightenment doctrines of detached scientific objectivity. First, “partiality and not universality is the condition of being heard to make rational knowledge claims” (Haraway 1988:589). As Haraway writes, “only partial perspective promises objective vision. …Feminist objectivity is about limited location and situated knowledge, not about transcendence and splitting of subject and object” (1988:583). Second—while Enlightenment objectivity rests on distance between subject and object, and on knowledge as the view from nowhere or above (a disembodied, unlocated, unaccountable subject position)—situated objectivity asserts the connection of subject and object, and posits rational knowledge as embodied “views from somewhere” (Haraway 1988:590).

One of the most significant consequences of this understanding of knowledge is a radically altered view of subject-object relations. The subject-object split of
positivist objectivity is not only refused, it is replaced with a vision of objects as 
actors and of scientific inquiry as “power-sensitive conversation.”

Situated knowledges require that the object of knowledge be pictured 
as an actor and agent, not as a screen or a ground or a resource, never 
finally as slave to the master that closes off the dialectic in his unique 
agency and his authorship of “objective” knowledge. The point is 
pardigmatically clear in critical approaches to the social and human 
sciences, where the agency of people studied itself transforms the 
entire project of producing social theory. Indeed, coming to terms 
with the agency of the “objects” studied is the only way to avoid gross 
error and false knowledge of many kinds in these sciences. But the 
same point must apply to the other knowledge projects called sciences 
A corollary of the insistence that ethics and politics covertly or 
 overtly provide the bases for objectivity in the sciences as a 
heterogeneous whole, and not just in the social sciences, is granting 
the status of agent/actor to the “objects” of the world. Actors come in 
many and wonderful forms. Accounts of a “real” world do not, then, 
depend on a logic of “discovery” but on a power-charged social 
relation of “conversation.” The world neither speaks itself nor 
disappears in favor of a master decoder. …In some critical sense that 
is crudely hinted at by the clumsy category of the social or of agency, 
the world encountered in knowledge projects is an active entity. 
(Haraway 1988:593)

Haraway is explicit that the view of “objects as actors” pertains to all sciences. She 
explains that she has “refused to resolve the ambiguities built into referring to 
science without differentiating its extraordinary range of contexts” in order to 
foreground precisely this “field of commonalities binding exact, physical, natural, 
social, political, biological, and human sciences” (Haraway 1988:591).

The paradigm shift towards more active and interactive conceptions of 
objects of knowledge is one Haraway identifies, not only with late-twentieth century 
feminism and social theory, but also with the biological sciences, in particular with
the radical re-conception of genes in terms of coding and decoding, and of genetics as communication. Haraway’s situated objectivity joins the view of knowledge as constructed to the everyday practice of science. For example, she writes that by insisting on “a better account of the world,” feminists find themselves “conjoined with the discourse of many practicing scientists, who, when all is said and done, mostly believe they are describing and discovering things by means of all their constructing and arguing” (1988:579).

The understanding of situated knowledge with which my Cyborganic research proceeded draws from Haraway directly, as well as indirectly, through her influence on anthropology (e.g., Gupta and Ferguson 1997c; Downey and Dumit 1997). But it also draws on the reconfigurations of thought and practice that have taken place in anthropology since the 1960s. Fundamental transformations in the discipline’s traditional object, core concepts, and central practices created the conditions that made my Cyborganic project realizable as anthropology. By turning briefly to discuss these transformations I seek to explain their formative role in my research and the epistemology of situated knowledge that grounds it.

**Anthropology Reconfigured: Ethnography without the Ethnos**

My study of Cyborganic bears little resemblance to the traditional image of anthropology as the study of so-called primitive society, and ethnography as the description of “a culture.” Of course, that image of anthropology, with its “peoples
and cultures” approach, has been outdated in practice for quite some time. As Akhil Gupta and James Ferguson observed over a decade ago,

Ethnographically, much of the best work today no longer fits within the model of a study of “a culture,” while the most challenging contemporary fieldwork cannot be contained within the stereotypical “among the so-and-so” mold. What would once have appeared a logical impossibility—ethnography without the ethnos—has come to appear, to many, perfectly sensible, even necessary (Appadurai 1991). Theoretically, too, a move away from the “peoples and cultures” vision of the world, always a live concern for a small section of anthropologists, appears to have become a leading position within the discipline. (Gupta and Ferguson 1997b:2)

This shift represents a critical reconfiguration of concepts and practices that once defined the discipline. The view of “cultures” as bounded wholes and of “a culture” as “an integrated totality,” “a universe of shared meaning,” has given way to new theorizations and practices of anthropology. The sources of these shifts are many and varied. Some, such as post-colonialism, post-industrialism, and transmigration, are phenomenal2. Others are intellectual currents that have been active in anthropological theory since the 1960s (Ortner 1984). Scholars working in political economy, for example, had long argued against the view of isolated cultures in favor of a world system connected through historical processes (Gunder Frank 1967; Wallerstein 1974; Wolf 1982; Mintz 1985). And the theoretical orientation to practice that Sherry

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2 David Harvey has written of postmodernity as an historical condition—“a sea-change in cultural as well as in political-economic practices since around 1972” (1989: vii)—and anthropologists have similarly recognized that the fragmented, decentered, compressed, flexible, and refractive terms used to describe the contemporary world reflect material and phenomenal shifts, not simply a postmodernist ideology (Hannerz 1987, 1989; Appadurai 1990; Abu-Lughod 1991; Fox 1991).
Ortner identified as “the key symbol of eighties anthropology” (1984:158) emphasized agency; the relations of human action and “the system;” and the negotiated, conflictual nature of social life and reality. Both of these approaches have contributed to my Cyborganic research and view of situated knowledge.

However, rather than chart the sources of my methods and epistemology comprehensively, I focus here on the response of anthropologists to the “crisis of representation” precipitated by critiques of the discipline’s traditional practices of knowledge making (Marcus and Fischer 1986). These have been a major impetus for the reconfigurations of anthropological thought and practice that enabled my Cyborganic research. Moreover, though not discussed directly, I would argue that the influence of political economy and the practice perspective is implicit in this focus: both in the critiques that brought about the crisis; and in the theory and practice of anthropologists who responded to it. Most significantly, responses to “the crisis” have served as sources for my understanding of situated knowledge, addressing to ethnography the very questions of scientific objectivity Haraway raised. Thus, by turning briefly to discuss anthropology’s crisis of representation, I seek to give a more specific, more anthropological, explanation of situated knowledge and its application to my Cyborganic work.

After the “Crisis,” an “Experimental Moment”

The “crisis of representation” refers to the postmodern, postcolonial, postfeminist erosion of paradigmatic authority that beset anthropology and other
fields in the human sciences during the 1980s. This crisis posed significant
crances to anthropology—a discipline grounded in the Enlightenment project of
rationality and objectivity and intimately bound up in the history of Western
imperialism. Beginning with the critiques of Dell Hymes, Edward Said, Johannes
Fabian, Clifford Geertz, James Clifford, and George Marcus and Michael Fischer,
anthropologists were criticized for their unself-conscious production of cultural
representations.3 Descriptions and analyses written from observations and
fieldnotes—the very heart of ethnography—were called in to serious question,
epistemologically, as well as politically (Lutkehaus and Cool 1999). Anthropological
knowledge was shown as socially constructed, its authority and objects (“natives,”
“cultures,” “traditional society”) narrative effects, rather than natural facts (Clifford
1988:10). The so-called primitive Other—isolated spatially in a faraway place and
stranded temporally in the ethnographic present—was revealed as an invention of the
discipline (Fabian 1983; Kuper 1988; Appadurai 1988).

Responding to the critiques, many anthropologists explored new strategies for
representing “an emergent postmodern world” and worked to “make ethnographic
writing more sensitive to its broader political, historical, and philosophical

the Colonized: Anthropology’s Interlocutors,” (1989); Fabian, Time and the Other:
How Anthropology Makes Its Object (1983); Geertz, Works and Lives: The
Anthropologist as Author (1988); Clifford, The Predicament of Culture: Twentieth
Century Ethnography, Literature, and Art (1988); Clifford and Marcus, eds., Writing
Culture: The Poetics and Politics of Ethnography (1986); Marcus and Fischer,
Anthropology as Cultural Critique: An Experimental Moment in the Human Sciences
(1986).
implications” in what came to be called the “new ethnography” (Marcus and Fischer 1986:vii). These new ethnographies took a variety of forms, but shared in a self-conscious effort to portray the socially constructed nature of anthropological knowledge. Some focused on the dialogical nature of ethnographic inquiry (Crpanzano 1980; Dwyer 1982; Price 1983), others on revealing fieldwork as an intersubjective process (Briggs 1970; Geertz 1971; Rabinow 1977). Reflexivity, the practice of representing the ethnographer as a particular individual in the work—rather than an all-seeing, but unseen, authorial voice—was a common feature of these ethnographies; and some researchers began to practice a “reflexive anthropology,” critically considering their own cultural biases and foregrounding questions of identity, authority, and positionality (Hymes 1974; Myerhoff and Ruby 1982). The new ethnography also turned away from the exotic “other” to new subjects of ethnographic investigation, with anthropologists working increasingly in and on their own societies, including the contemporary West itself (Martin 1987; Traweek 1988; Luhrmann 1989; Ginsburg 1989). Integral to this turn, as Marcus and Fischer have emphasized, was a “repatriation of anthropology as cultural critique.”

The experiments in ethnographic writing have stimulated a search for creative ways to apply both the substantive results and the epistemological lessons learned from ethnography abroad to a renewal of the critical function of anthropology as it is pursued in ethnographic projects at home. (Marcus and Fischer 1986:112)

In these features, the new ethnography and theory that chronicled it opened the way, not only for new forms of ethnographic writing, but for new objects and practices of
anthropological knowledge more broadly. The significance of this work is not that it settled the crisis of representation with anthropologists turning *en masse* to experimental writing. Indeed, proponents of the new ethnography were criticized for a literary focus that “too readily collapsed the politics of ethnography into its poetics” (Abu-Lughod 1991:149). Rather, its significance lies in the broader changes it stimulated as the epistemological lessons of the crisis were brought to bear on fundamental disciplinary assumptions about “culture,” “the field,” and difference. Even those critical of its literary focus for skirting fundamental issues of domination (e.g., Abu-Lughod 1991), drew on the insights of this “experimental moment” and the possibilities it opened for re-imagining the practice of anthropology.

The works of this “experimental moment” influenced my Cyborganic research in several ways. Most visible is the choice to pursue ethnographic fieldwork in the United States, among people much like myself, in a group not bound by ethnos or received solidarities. Moreover, the renewal of anthropology’s critical function is evident in the critique of the narrative of social revolution that comprises the third objective of this dissertation. In addition to legitimating the object and critical approach of my research as *anthropology*, the new ethnography contributed to my understanding of anthropological knowledge as socially constructed and therefore: partial, intersubjective, and situated. Both the turn to reflexivity and to the wider political-historical contexts of ethnography address questions of location, or situatedness. While the former seeks to locate the ethnographer in relation to the
object of ethnographic knowledge, the latter seeks to locate both within the broader context of the world political economy. This idea of location is central to my understanding of situated knowledge, yet it draws more directly on anthropological work that followed on the “experimental moment,” than on the new ethnography itself. By turning briefly to discuss this work, I seek to round out my explanation of situated knowledge and the disciplinary context of my research.

Anthropological Locations and the Ethnography of the Everyday

The concept of location is central to situated knowledge in multiple senses, scales, and dimensions—from geographic locale and historical context, to the inner territories of identity and ontology. In this thinking, I draw on geographer Edward Soja’s concept of the “ontological nexus of space-time-being.” Soja argues that, just as the physical world is delimited in space, time, and matter, the abstract dimensions of spatiality, temporality, and social being “together comprise all facets of human existence” (1989:25). Thus, I understand situated knowledge as a process that entails locating ethnographic inquiry in each of these social dimensions, working to situate both knower and known within the ontological nexus through which they are constituted. While I have noted general sources for this approach in Haraway’s feminist objectivity and anthropology’s “experimental moment,” my understanding of what this process looks like in practice draws on Lila Abu-Lughod’s prescription for “writing against culture” (1991) and Akhil Gupta and James Ferguson’s theorization of “anthropological locations” (1997b, 1997c). These works present
examples and strategies for undertaking ethnographic research in the contemporary world that have guided me in putting situated knowledge into practice. Though their topical frames are quite different, both address questions of location in anthropology and build on their own and others’ critiques of the discipline to offer new perspectives on culture, the field, and difference.

In the last twenty years, anthropologists have problematized conventional notions of culture and the field by examining difference at home (Weston 1997); working from positions that blur the self/other dichotomy, such as native, feminist and “halfie” anthropologists (Abu-Lughod 1991); studying groups not rooted in stable territories, such as homeless (Passaro 1997), migrant worker (Leonard 1997) and refugee populations (Malkki 1997, 1995a, 1995b), and investigating social and cultural processes that are not spatially localized (Martin 1995). Within this flourishing of reconceived perspectives, I single out Abu-Lughod and Gupta and Ferguson for two reasons. First, they, too, draw explicitly on feminist epistemologies and argue for increased attention to the situatedness of anthropological knowledge. Second, they describe and theorize wider trends and bodies of work in the discipline, offering examples and strategies for doing anthropology in the present.

In her essay “Writing Against Culture” (1991), Abu-Lughod maintains that the concept of culture, “especially as it functions to distinguish ‘cultures’,” has outlived its usefulness and “become something anthropologists would want to work against in their theories, their ethnographic practice, and their ethnographic writing”
Like many in the wake of the crisis of representation, she criticizes the idea of cultures as homogenous, coherent, bounded, and timeless. However, her approach is distinct in focusing on the problematic opposition between self and other that has been "central to the paradigm of anthropology." Defining "halfies" as "people whose national or cultural identity is mixed by virtue of migration, overseas education, or parentage," Abu-Lughod argues that the dilemmas shared by feminist and "halfie" anthropologists clarify the problems of the self/other dichotomy and, ultimately, call in to question "the value of the concept of culture on which it depends" (1991:137-38). In the course of her argument, she draws out the shared elements of feminist and "halfie" anthropology and explains what insight they offer the discipline as a whole; she urges anthropologists to "consider strategies for writing against culture," and discusses three she sees as "promising" (1991:147).

Abu-Lughod begins by reflecting on what anthropology can learn from feminist theory, "an academic practice that also traffics in selves and others" (1991:139). Before anthropology faced the challenge of "ethnography without the ethnos," feminists faced the challenge of feminism without "the woman." That is, though "woman" was their subject, the differences encompassed in that category produced in feminist theory a crisis of subjecthood.

The crisis in feminist theory…was the problem of “difference.” For whom did feminists speak? Within the women’s movement, the objections of lesbians, African-American women, and other “women of color” that their experiences as women were different from those of white, middle-class, heterosexual women problematized the identity of women as selves. (Abu-Lughod 1991:140)
“From its experience with this crisis,” Abu-Lughod writes, “feminist theory can offer anthropology two useful reminders:” (1) “the self is always a construction, never a natural or found entity, even if it has that appearance;” and (2) “the process of creating self in opposition to an other always involves the repression or omission of other forms of difference” (1991:140). This crisis in feminism, she argues, should caution anthropologists against the dangers of assuming self and other as givens.

Both feminism and anthropology are constructed through opposition to “others.” While feminists “discover the self by becoming conscious of oppression from the Other,” anthropologists “constitute their selves in relation to an other, but do not view this other as ‘under attack’”(1991:138). Abu-Lughod criticizes those who characterize “the relationship between anthropological self and other as nonadversarial,” pointing out that the discipline is built on the historically constructed divide between the West and the non-West…and continues to be primarily the study of the non-Western other by the Western self, even if in its new guise it seeks explicitly to give voice to the Other or to present a dialogue between self and other… And the relationship between the West and the non-West, at least since the birth of anthropology, has been constituted by Western domination. (Abu-Lughod 1991:139)

The question that feminist and halfie anthropologists bring to the fore is: “What happens when the ‘other’ that the anthropologist is studying is simultaneously constructed as, at least partially, a self?” Abu-Lughod proposes that this split selfhood creates an awareness of “three crucial issues” that are instructive for anthropology generally: positionality, audience, and the power inherent in
distinctions of self and other. Because they stand at the intersection of systems of
difference, feminist and halfie anthropologists: (1) “cannot easily avoid the issue of
positionality” and recognition that “every view is a view from somewhere;” (2) are
accountable to multiple audiences and obliged “to confront squarely the politics and
ethics of their representations;” and (3), cannot escape “the dubiousness of
maintaining that relationships between self and other are innocent of power (Abu-
Lughod 1991:142). Anthropology as a whole, Abu-Lughod argues, needs to be more
attentive to the relations of power that feminists and halfies reveal as inherent in
distinctions of self and other.

Further, Abu-Lughod proposes that the concept of culture persists in
anthropology because “the distinction between self and other rests on it.” Drawing
on Said’s critique of Orientalism (1978), and examples of cultural feminism, she
compares use of “culture” to other “dividing practices,” arguing that “whether they
naturalize differences, as in gender or race, or simply elaborate them, as…the culture
concept does,” these practices “are fundamental methods of enforcing inequality.”
She shows that—despite its anti-essentialist intent to remove difference “from the
realm of the natural and the innate”—the concept of culture still operates in
anthropological discourse to freeze difference, and “enforce separations that
inevitably carry a sense of hierarchy” (1991:143, 144).

This critique of the notion of culture brings Abu-Lughod to the central argument
of her essay and she writes:
If “culture,” shadowed by coherence, timelessness, and discreteness, is the prime anthropological tool for making “other,” and difference, as feminists and halfies reveal, tends to be a relationship of power, then perhaps anthropologists should consider strategies for writing against culture. (Abu-Lughod 1991:147)

In this way, Abu-Lughod brings the insights of feminists and halfies to bear on her call for all anthropologists to work against the culture concept in their theories, ethnographic practice, and writing. She devotes the remainder of her essay to a discussion of three ways anthropologists might do this by focusing on (1) discourse and practice; (2) connections; and (3) writing “ethnographies of the particular.”

First, Abu-Lughod proposes that the terms “discourse” and “practice,” which have become increasingly popular in anthropological theory, “enable us to analyze social life without presuming the degree of coherence that the culture concept has come to carry.” She uses discourse in “its Foucauldian derivation…to refuse the distinction between ideas and practices or text and world that the culture concept too readily encourages;” and draws on the practice approach associated, in anthropology, with Bourdieu (1977) and Ortner (1984), to emphasize the role of agency and contradiction “over more static homogenizing cultural tropes of rules, models, and texts” (Abu-Lughod 1991:147).

Second, Abu-Lughod advocates that anthropologists work against the isolating tendencies of the culture concept by reorienting the problems and subject matter they address “to include phenomena of connection.” She writes:

An important focus should be the various connections and interconnections, historical and contemporary, between a community
and the anthropologist working there and writing about it, not to mention the world to which he or she belongs and which enables him or her to be in that particular place studying that group. (Abu-Lughod 1991:148)

She cites the writing of anthropologists working from a world-systems perspective (Wolf 1982; Mintz 1985), and of those concerned with national and transnational flows (Appadurai 1991), as examples of anthropological practices that “expose the inadequacies of the concept of culture and the elusiveness of the entities designated by the term cultures” (Abu-Lughod 1991:149).

Finally, Abu-Lughod advises anthropologists to eschew generalization as a “language of power” that tends to produce “the effects of homogeneity, coherence, and timelessness,” by writing “narrative ethnographies of the particular in a continuing tradition of fieldwork-based writing.” Looking closely at the lives and relationships of particular individuals, and the dependent paths by which social life proceeds, she argues, can work to “subvert the most problematic connotations of culture.” (Abu-Lughod 1991:152-54)

Each of the three strategies Abu-Lughod proposes has informed the conception of my Cyborganic research and guided me in putting situated knowledge into practice. As a community, Cyborganic is defined by the discourses and practices that brought it into being, rather than by an “ethnos.” This understanding is reflected in my research and writing by attention to everyday practices, such as the use of mailing lists, and the discourses of which they were a part. Further, I have sought in my ethnography to situate the Cyborganic project in time and place, emphasizing its
connections to the broader cultural history of the Bay Area as a “technopole” (chapter 3), while also producing a detailed account of the individuals and events through which the project was realized (chapters 4, 5, 6). As Abu-Lughod makes clear, the argument for particularity does not imply a disregard for forces and structures that are not locally based. Rather, it entails the recognition that “extralocal and long-term processes are only manifested locally and specifically, produced in the actions of individuals living their particular lives, inscribed in their bodies and their words” (Abu-Lughod 1991:150). As this discussion illustrates, the strategies Abu-Lughod proposes for “writing against culture” resonate deeply in my approach to situated knowledge. Both entail that anthropologists locate themselves in relation to their objects of knowledge—the people, practices, or discourses they study and represent. Both focus on agency and the social uses of discourses and practices. Both emphasize that attention to micro processes and connections of everyday life be complemented by attention to the macro processes and connections of history, political economy, and power. In this way, both work toward situating anthropological knowledge in Soja’s ontological nexus of space-time-being.

As noted, Gupta and Ferguson’s work on “anthropological locations” is a second source for my application of situated knowledge to anthropology. Though they focus critical attention on the spatialization of difference, rather than the self/other dichotomy, Gupta and Ferguson also propose revised strategies for practicing anthropology in the contemporary world. Their critique centers on the
“assumed isomorphism of space, place, and culture” that has dominated in anthropology; and on the challenges posed to this assumption by transnational flows of migrants, refugees, and cosmopolitan elites; by recognition of cultural differences within localities (multiculturalism, subcultures); and by “the hybrid cultures of post-coloniality” (1997b:34-35). They contend that assumed and naturalized divisions of space, such as “societies,” “nations,” “cultures,” “tribes,” and “peoples,” and “their” associated territories, persist even in contemporary anthropological practice. They criticize “articulation models” of the world economy that posit a primeval “precapitalist” local scene that is then “violated by global capitalism” for assuming the autonomy of this imagined pre-contact state rather than investigating how the local community was formed as a community “out of the interconnected space that always already existed” (1997a:36). Echoing Abu-Lughod, Gupta and Ferguson criticize the new ethnography for its unselfconscious assumption of “others” and cultural difference; and reproach Marcus and Fischer (1986) and the anthropology as cultural critique they championed for “spatializing cultural difference with ethnography as an unproblematized link between ‘home’ and ‘abroad’” (1997a:43). Gupta and Ferguson observe that the dialogical conception of much of the new ethnography assumes “others” and “other cultures” as givens, taking cultural difference as a starting point, rather than an end product of historical processes that differentiate the world as they connect it. It is precisely because the anthropological object can no longer be “conceived as automatically and naturally anchored in
space,” they argue, that anthropology “will need to pay particular attention to the
way spaces and places are made, imagined, contested, and enforced” (1997a:47).

Gupta and Ferguson’s approach centers on “the idea of ‘location’ that has
developed in feminist scholarship” (1997c:35). Recognizing that a well-developed
sense of location has always been the great strength of ethnography, they argue that
this strength becomes a liability “when notions of ‘here’ and ‘elsewhere’ are
assumed to be features of geography, rather than sites constructed in fields of
unequal power relations” (1997c:35). They therefore propose a new understanding of
location as actively constructed and situated within a field of interconnected
relations, structures, and histories. Here they draw on Haraway’s theorization of
situated knowledges (1988) and cite their debt to the feminist conception of
‘location,” not as *ascribed* (e.g., sex, race, parentage), but as “something one
strategically works at,” writing:

We are not advocating the abandonment of the practice of fieldwork,
but rather its reconstruction—decentering “the field” as the one,
privileged site of anthropological knowledge, then recovering it as
one element in a multistranded methodology for the construction of
what Donna Haraway (1988) has called “situated knowledges.” We
might emerge from such a move with less of a sense of “the field” (in
the “among the so-and-so” sense) and more of a sense of a mode of
study that cares about, and pays attention to, the interlocking of
multiple social-political sites and locations…. But a heightened sense
of location means most of all a recognition that the topics we study
and the methods we employ are inextricably bound up with political
practice. (Gupta and Ferguson 1997c:37-38)

In this manner, Gupta and Ferguson propose a more historical and structural
understanding of all locations, including the anthropologist’s, as *constructed*, rather
than given; connected historically and politically, rather than isolated; and shifting, rather than bounded. They emphasize both the constructedness of knowledge and the situtatedness of positions from which it is produced. Arguing that traditional conventions of “the field” entailed their own forms of political engagement, Gupta and Ferguson propose an updated view of “anthropological knowledge as a form of situated intervention” (1997c:38).

Gupta and Ferguson’s work also draws attention to “revitalized forms of fieldwork…already well under way in anthropological practice” (1997c:37). In doing so, it descends from theory of the field to practical questions of what and how to study. The discipline’s fieldwork tradition, they contend, has been valuable as a counter to Western ethnocentrism for its focus on everyday, embodied, and informal knowledge, and for its method of self-conscious shifting of social and geographical location. The essays collected in Gupta and Ferguson’s two edited volumes addressed to place-making in anthropology\(^4\) demonstrate research practices that work to preserve the traditional strengths of fieldwork, while at the same time adapting those strengths to the reconfigured contexts of contemporary anthropology. My own research draws on this work in several ways. Besides supporting my application of Haraway’s situated knowledge to ethnographic fieldwork, it has guided my focus, methodologically, to the study of everyday practices and informal knowledge. My

\(^4\) _Anthropological Locations: Boundaries and Grounds of a Field Science_ (Gupta and Ferguson, eds., 1997d) and _Culture, Power, Place: Explorations in Critical Anthropology_ (Gupta and Ferguson, eds., 1997e).
attention to domestic life, work processes, mailing lists, and voluntary association bears out that influence. Moreover, I took Gupta and Ferguson’s view of “a research area”—“less as a ‘field’ for the collection of data, than as a site for strategic intervention” (1997c:39)—as authorization for the highly participatory methods of my fieldwork. Because there are no locations outside fields of unequal power relations, no knowledge is disinterested or apolitical. Thus, rather than striving for distance, anthropologists are called upon to situate themselves in relation to their subjects and reflect on their positionality, whatever the extent of their participation or connection.

Objectivity Revisited: Subjectivity and the Native Question

If distance has certain arguable advantages, so too does closeness, and both have their deficits. Yet classic social science has endowed the former with excessive virtues, and the latter with excessive vice...The present chapter contests the equation of analytical distance and scientific objectivity by arguing that social analysts should explore their subjects from a number of positions...

Renato Rosaldo (1989:169)

Implicit in the case for situated knowledge presented in this chapter is an argument against “the equation of analytical distance and scientific objectivity” (Rosaldo 1989:170). This argument is especially important for my research of Cyborganic given my closeness to and participation in the community. From the start of my fieldwork, my informants knew I was an anthropologist researching networked communities and this identity was central to my position in the Cyborganic project and community. While my roles as observer/researcher and
participant/member were openly interconnected—and fed back into one another in productive ways—the combination of subject positions entailed in fieldwork and ethnography is never simple or unproblematic. The tensions inherent in the fieldworker’s double persona as participant-observer are, however, a valuable source of ethnographic knowledge as many anthropologists have contended. Dorinne Kondo (1986), Renato Rosaldo (1993), and Lanita Jacobs-Huey (2002) have all examined the trade-offs entailed in identification as a source of anthropological knowledge and, in doing so, all make the case for epistemological reorientations away from the conventions of distanced objectivity towards what I have called situated knowledge.

Kondo (1986) and Rosaldo (1993) argue for the value of more experiential, participatory, and affective modes of knowing that involve, as Kondo has put it, “the whole self” (Kondo 1986:75, 85). Drawing on anecdotes from the works of Geertz (1968), Briggs (1970), and Fanon (1967), Rosaldo critiques the Weberian ethic of “passionate detachment” for restricting too severely “the legitimate sources of knowledge for social analysis;” and excluding insights from such “lesser” sources as the ethnographer’s feelings of “feebleness,” “depression,” and “rage” (1993:193). Kondo makes a similar case against distanced objectivity, writing:

We must recognize that our emotions and sympathies are inevitably implicated in our foreunderstandings. These too can be legitimately productive of knowledge, for knowledge is not purely cognitive. It is also the product of our emotional sensibilities and affinities. I am not suggesting that anthropologists attempt a Romantic fusion with the Other, for this is not only impossible but merely perpetuates the two poles of our own conceptual oppositions: tight-lipped reason and Sturm und Drang emotion, objectivity and subjectivity, mind and
body. What I am suggesting is that knowing involves the whole self (at least as we define it), and not simply what we think of as “the intellect.” Accordingly, moments of identification, as well as moments of distancing, may occur during all phases of knowing, from the definition of the problem, to the experiences in the field, to the writing of the ethnographic text. A more honest appraisal of the anthropological enterprise would take these other elements—so often treated as illegitimate, unscholarly, “soft”—as integral to the process of understanding. (Kondo 1986:85)

For Rosaldo and Kondo, the ethnographer’s position as a situated subject is not simply a limit on knowledge, or barrier to objectivity, but is itself “integral to the process of understanding.” The ethnographer’s cognitive and visceral moments of identification and distancing are, they argue, crucial sources of ethnographic knowledge. Thus, they assert, rather than imprisoning anthropology in contingency, recognizing “the role of experience, power, and of the involvement of the entire self” (Kondo 1986:86) results in richer, more accurate understandings, or in Haraway’s phrase, in “better accounts of the world.”

Kondo (1986), Rosaldo (1993), and Jacobs-Huey (2002) all argue that the ethnographer’s degree of distance from his or her informants is never simply a neutral fact. That is, one’s position inside or outside the culture being studied can never be unreflectively taken for granted because: (1) it is always negotiated in the ethnographic encounter; (2) it invariably encompasses multiple positionings that can move along a continuum from complete identification to total alienation during fieldwork; and (3) it shifts as the ethnographer moves from the more participatory role of fieldworker to the more observational, distanced roles of social analyst and
writer. The fieldworker’s double persona as participant-observer is matched by the
ethnographer’s dual identity as both fieldworker and writer. Critical reflection about
the way these multiple positionalities are negotiated is a valuable source of
ethnographic knowledge.

Kondo (1986), Rosaldo (1993), and Jacobs-Huey (2002) each make this case
but do so for ethnographers working from different subject positions. For the most
part, Rosaldo examines the conventional case of ethnographers working among
people who are not “their own,” while Kondo focuses on her experience as an
anthropologist “not completely outside the culture” she is studying; and Jacobs-Huey
reflects on the problematics of “native” anthropologists working in “their own”
communities. I reference the three anthropologists jointly because together they
demonstrate that identification and distancing are integral to ethnography regardless
of the ethnographer’s position as “outsider” or “native” to the studied culture.
Indeed, they show that ethnographers are never simply inside or outside the cultural
groups they study; their subject positionings are more complex, shifting, and
negotiated; and these negotiations play a vital role in the ethnographic enterprise.

The issues of identification and distance these anthropologists bring to the
fore have been a crucial resource for me in addressing questions about my position
as the ethnographer of a community in which I was a founding member and active
participant for almost ten years. Though these issues remained in the background
during fieldwork, they arose upon my return from the field to the university where I
encountered the question of whether researching Cyborganic made me a “native” anthropologist. Given my membership in the community, and extent of my fieldwork, the case could be made for my native status. Yet I had never thought of myself in those terms and was initially quite resistant to identify in that way. My research had brought me to Cyborganic and I clung to my identity as participant-observer as though it were a talisman against accusations of having “gone native.”

Yes, I had lived among the Web geeks for many years, I conceded, and they considered me one of their own, but, for my part, I had always been a participant-observer. Though I made no secret of my membership in Cyborganic, I certainly did not want to “play the native card” in an uncritical privileging of “insider” status. However, I came to see that I was already invoking insider status by framing my research in terms of the “repatriation of anthropology as cultural critique” that Marcus and Fischer (1986) proposed. Puzzling over the contradictions of my subject position led me to Kondo’s, Rosaldo’s, and Jacob-Huey’s works. These, in turn, allowed me to face the question of my insider status without approaching it as an either/or proposition. That is, they let me see that I might safely consider my identity as a Cyborganic member, without ceding legitimacy as ethnographer, or promulgating an uncritical notion of the “native” anthropologist.

Because they focus on ethnographers for whom the “Other is not totally Other” (Kondo 1986:75, 83), Kondo’s and Jacob-Huey’s essays have been particularly useful to me in understanding my position as the ethnographer of a
community in which I was a member. Though Kondo writes as a Japanese-American anthropologist working in Japan, and Jacobs-Huey as an African-American anthropologist working in the United States, the issues of identification, distancing, and accountability they raise parallel and illuminate my own experiences of fieldwork and writing. Their analyses led me to reflect on my position inside and outside Cyborganic, first, as a negotiation with my informants that changed with time and context, and, second, as integral to the research and writing process.

In many ways, Kondo’s experience and “ambiguous insider/outsider position in the field” parallel my own (1986:82). Just as her informants worked to make her over in their image and guide her toward cultural competence, my Cyborganic informants evangelized the virtues of Internet culture and, particularly during my early days in the field, worked to school me in its ways. Kondo emphasizes both her own and her informants’ agency in the “collusion” to incorporate her in a variety of meaningful cultural roles, from daughter, guest, student, and young woman, to “prodigal Japanese who had finally come home” (1986:77).

During the fieldwork experience itself, my informants often tried to recreate me as Japanese. I collaborated in this attempted recreation with various degrees of enthusiasm and resistance. The play of identities was constant in the field, changing with time and with context. (Kondo 1986:82)

She writes of being “forced to abandon the position of observer” by expectations that she would behave as a Japanese, and of feeling “bound by chains of obligation” to her informants. Finally, Kondo observes, fieldwork culminates in writing the
ethnographic text, a process that requires distance and entails “drawing away from
the immediacy of the ethnographic encounter.” Though she emphasizes that her
participation and “openness to Otherness” were “crucial determinants” of the field
experience and the task of defining her research problem, Kondo asserts that “some
degree of remove from the Other was necessary in order to recover meaning from”
her experience of identification. (Kondo 1986:79-84)

Jacobs-Huey also emphasizes the way “participants and researchers co-
construct the native researchers’ identities, roles, and research agendas in overt and
subtle ways” (2002:796). She synthesizes the work of several native scholars to
“expose the fallacy of presuming commonalities with research participants based on
their shared ethnic, gendered, and class backgrounds,” arguing that all scholars,
“particularly native ones, must diligently strive to negotiate legitimacy in the field”
(Jacobs-Huey 2002:793).

The process whereby native scholars are attributed particular social
roles—along with their subsequent attempts to comply with or contest
these positionalities—illuminates how native/insider is an insufficient
descriptor for the manner in which scholars negotiate multiple
identities in the field. (Jacobs-Huey 2002:794)

Jacobs-Huey’s analysis attends to the multiplicity and tensions hidden in the
assumption of native/insider status. She also draws attention to the dilemmas native
anthropologists face in reconciling “multiple allegiances and accountabilities to their
ethnic and academic communities;” and in writing for both lay and academic
audiences. While recognizing that these tensions are, to some extent, shared by all
social scientists, Jacobs-Huey illustrates how “managing the politics of representation may entail additional challenges for native scholars” (2002:797).

Like Kondo, Jacobs-Huey examines the role of identification and distance both in fieldwork and in representing knowledge in the ethnographic text. These examinations made me attentive to the ways in which my subject position as ethnographer changed over the course of research. Kondo’s and Jacobs-Huey’s examination of the tensions and value of identification as a source of ethnographic knowledge enabled me to confront the questions of insider identity analytically. They equipped me with ways to think and talk about the multiple, negotiated, and fluid nature of my positionality; and drew my attention to the particular challenges of audience and accountability faced by ethnographers who are not completely outside the communities they study. Through their analyses, I came to see that the issue to address is not whether the anthropologist is a “native” for this settles nothing and simply opens the question of “How native is a native anthropologist?” (Jacobs-Huey 2002:792). Instead, the question to consider is what “insider” and “outsider” roles and identities constituted my subject position vis-à-vis the Cyborganic community.

**Insider Roles and Identities from Fieldwork to Writing**

As I have argued above, following Kondo (1986), fieldwork entails multiple positions that can move along a continuum from complete identification to total alienation and that tend to shift during the course of research. Therefore, in considering my positionality as ethnographer of Cyborganic, I begin by describing
my insider roles and identities before, during, and after fieldwork; then shift to consider my positioning as outsider over these same three stages of research and writing. Figure 2.1 below gives a schematic representation of the roles and identities that constituted me as a Cyborganic member.

<table>
<thead>
<tr>
<th><strong>Before Fieldwork</strong></th>
<th><strong>During Fieldwork</strong></th>
<th><strong>After Fieldwork</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Friend, Age-cohort Member (“Generation X”), College-educated European-American with Counter-cultural Identities and Attitudes</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Computer User, BBS User, Film Sound Technician (“Audio Geek”)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Cyborganic Community Member (1993-present)</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Neighbor/Housemate (Ramona Empire resident 17 months)</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>TND Organizer &amp; Host (16 months)</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Co-worker, Partner, Employee: Principle in Cyborganic Business, Community &amp; Education Director, Mailing List Administrator (28 months)</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td></td>
<td>Community Historian</td>
</tr>
</tbody>
</table>

**Figure 2.1: Insider roles and identities of the ethnographer**

As described at the start of this chapter, I entered the field more as friend than as stranger (Powdermaker 1966). I knew Cyborganic founder, Jonathan Steuer, from college and through collaboration with him was introduced to the group household on Ramona Avenue, and to the wider community of Internet geeks in which I lived and worked for about six years. Even before I moved to San Francisco to undertake
fieldwork I was connected to the people who formed Cyborganic by common
identities (ascribed and achieved), bonds, experiences, interests, and sensibilities.
These pre-existing commonalities are listed in the first two rows of Figure 2.1 above.
Like most of my informants, I was in my twenties, had grown up with video games
and personal computers (PCs), and identified with the artsy and counter-cultural.
Most of us had recently finished college, or graduate programs, and had chosen San
Francisco as the place to embark on post-school lives and careers. In this regard,
Cyborganic was a peer-cohort of middle-class Americans at a particular life stage,
negotiating new roles and identities as full-time professionals living independently of
school and family.

A further source of identity stemmed from the fact that I had used a PC for
about 10 years when my fieldwork began; was familiar with bulletin-board systems
(BBSes) and commercial online services; and had technical training and work
experience in film sound and digital multimedia (Figure 2.1, line 2). In the course of
this experience, I developed a number of practical, linguistic, and cultural
competencies that enabled me to speak, act, and be seen as a geek or “techie,” a
person capable and interested in technical matters. Initially, I identified more as an
“audio geek” because I had only started to use the Internet nine months before
entering the field and felt like a “newbie” in relation to anyone who had been “on the
Net” longer. Nevertheless, a common do-it-yourself orientation to technology paved
my way in the field. This identity and orientation equipped me with habits (practices
and imaginaries) of self-directed learning in a context where such learning was a central feature of social life. Like many of my informants, I gained knowledge, skills, and contacts through my involvement with Cyborganic that enabled me to earn my living in the emerging Web industry.

Together these commonalities of generation and orientation to technology drew me to my Cyborganic research, shaping not only what I studied, but also when and how. At the time I decided to go into the field in August 1993, I had just finished my Masters in Visual Anthropology and been admitted to a Ph.D. program in Social Anthropology. Rather than start my study by writing a research proposal and seeking funding for fieldwork, as is customary, I decided to take leave from my university and immediately begin an extended period of participant-observation fieldwork. The plan was to live and work among the people and social phenomena I sought to investigate; supporting myself and my research through the research itself, doing the same kind of work my informants did to support themselves. Several factors informed my decision to begin fieldwork right away and undertake it in this manner. First, it seemed clear from the groundswell of activity around new media technologies in the Bay Area that something significant was taking place with great momentum. To delay, even for a semester, seemed an unimaginable setback. Second, I was influenced by the do-it-yourself ethos and example of my San Francisco informants to take this entrepreneurial approach, bootstrapping my research project with my own wages, rather than applying and waiting for institutional support. There
were jobs to be had in the Bay Area and people with computer and Internet experience could earn significantly more than graduate researchers and still have time to pursue their own creative projects. This was the approach Steuer was taking with his Cyborganic project, and that others had taken in creating salons and innovative communities in the Bay Area. It seemed only natural for me to bootstrap my own research in the same way. In so doing, it might be said that I “went native” by choosing a direct, independent, market-supported means to accomplish my project, rather than a more institutional approach. Both the form and content of my research served as key sources of identity with my informants and enabled me to undertake fieldwork as a member of their newly forming community.

Once my fieldwork was underway, I developed a number of other insider roles and identities as one of Cyborganic’s founding members (Figure 2.1, lines 3-6). After I got to the Bay Area and secured paid employment, I began to work with Steuer on the Cyborganic project, initially as a volunteer, later as a contractor and employee. A few months after I arrived in the field, the apartment next door to the group household on Ramona Avenue opened up and I moved there with two other new Cyborganics. Within a year, I began hosting weekly potluck dinners (TND) that were key to expanding Cyborganic and demonstrating its central premise that online and face-to-face interaction are mutually sustaining and together build uniquely robust communities. In addition, I took on a variety of roles within Cyborganic, from bookkeeping and mailing list management to the writing of business plans,
manifestos, and community guidelines. For almost two years, my personal and professional life revolved around Cyborganic and during the seventeen months I lived on Ramona Avenue there was little separation between the two. During the most intense period of fieldwork, I lived in the apartments at 65/67 Ramona where Cyborganic was headquartered and also worked there as a full-time employee of the Cyborganic business. At that time, the project regularly occupied most of my waking hours and was the ever-present context of my sleeping ones. Both space and time in the apartments were organized around the business. Work and live space were integrated: residents and staff shared the kitchen, bedrooms doubled as offices, meals doubled as meetings, and community dinners spilled into the entire house. Project meetings were held evenings and weekends to accommodate staff and volunteers who had other “day jobs” and were working on Cyborganic on their own time.

Many anthropologists have written of the collapse of personal boundaries that fieldwork can entail (Briggs 1970; Kondo 1986) and the constant demands of participant-observation. What I point to specifically in this case is that I, the ethnographer, was hardly alone in co-mingling work and the rest of life this way. Home offices, 60- to 80-hour workweeks, and using the wages from one job to underwrite one’s own creative projects, were familiar phenomena for most

5 The following fieldnote illustrates my point: “This morning, at about eight o’clock, my boss and housemate (Steuer) stormed into my bedroom [and office] with the company check book, woke me up, and asked to see [Cyborganic’s] books and bank statements. Good thing I sleep with both nightmare and computer on” (Cool, fieldnote, March 23, 1994).
Cyborganics during the dot-com boom. Living and working in this way was, thus, a source of common experience and identity with my informants—as was “burning out” from it, and learning to recover. The period of fieldwork in which I lived, worked, and socialized on Ramona Avenue involved the greatest collapse of personal boundaries. In mid-1995, after about a year and a half in the group households on Ramona, I moved across town to an apartment of my own, but continued to work for Cyborganic. This move marks the start of a second phase in my fieldwork in which I distanced myself from the business project: first by moving off Ramona and then, six months later, by quitting my job at Cyborganic altogether.

From this new vantage, I saw that my experience of Cyborganic had thus far been the exception, not the rule. Most members neither lived on Ramona, nor worked for the Cyborganic business. In my second phase of fieldwork, I joined the ranks of this majority. For the next three and a half years, I worked in the Bay Area Web industry and participated in Cyborganic’s online forums and community, without involvement in the business. I also broadened the scope of my research, studying Cyborganic and other community networks at the Institute for the Future; and returning to graduate school for a year. My position outside the Cyborganic business during this stage of fieldwork brought my experience closer to that of my informants’, making me more of a community insider in the “regular Joe,” rather than “inner circle,” sense. It gave me the opportunity to work at a number of different Internet companies—large ones, such as Netscape, as well as small Web-
shops run by other Cyborganics—and to develop co-worker and colleague relationships, and friendships, more broadly within the community and wider Web industry. While I’d previously associated with other Cyborganics primarily in the community’s own forums, we now interacted regularly in contexts outside our home territory: at corporate workplaces and events, and in the company of people who were not members of the group. I saw how others spoke of Cyborganic, and presented themselves as Cyborganics outside the group and gained insight from similar self-presentations of my own. I retained my identity as Cyborganic’s community maven (and TND founder) during this period of fieldwork; and even strengthened it in some ways. One was that I had more time for recreation in the community than I had had when employed by Cyborganic. Another was that I continued to participate in public discussions of Cyborganic’s community, policies, and ideals, where my knowledge of group history and Internet communities served to bolster that reputation. I continued to be identified with Cyborganic’s communitarian aims even after I disengaged from any official role in the project, and this dovetailed well with my identity as the community’s resident ethnographer, an outsider position.

When I left the Bay Area in June 1999, I thought I was bringing my fieldwork to a close. By that time the Cyborganic community was dispersed and its activity much attenuated. The weekly dinners had stopped in the spring of 1997 and by the end of that year the Cyborganic business had closed its doors and website.
The community mailing list remained active, as did a small server cooperative that provided electronic mail and Web hosting, mostly *pro bono*, to dozens of organizations and about a hundred individuals, myself included. A number of people on the mailing list no longer lived in the Bay Area, and those who did no longer met face-to-face as Cyborganics on any regular basis. By mid-1999 most members had found or formed new associations, cooperatives, and identities in place of those they’d had in Cyborganic. Thus, even before I left the Bay Area, Cyborganic had become more distributed, less close-knit, as a community. Individual members still met in person with varying frequency at work and play, but the group’s only public presence was on the community-wide mailing list. Though the list continued to operate until the end of 2002, it was no longer a focal point of everyday life the way Cyborganic had been in the past. For all these reasons, I looked upon my fieldwork as over when I returned to Los Angeles, where I completed my doctoral work.

In hindsight, however, I see that, though I left my field site simply by moving away from the Bay Area, this move did not, in any sense, constitute leaving the community. When Cyborganic started, it was emphatically a place-based community, but it had changed. Cyborganic had changed, but it had not disappeared: it had reconfigured and, though I did not recognize it at the time, my field site had done the same. It was no longer place-based and, thus, leaving the Bay Area did not change my experience as a Cyborganic member as much as I supposed it would. I continued to be part of the server cooperative, and to read and post to the mailing list.
and, in these ways, continued participant-observation long after I thought I’d left the field. Reconfigured, both Cyborganic and the field remained with me. I subsequently came to see this period as a liminal one in which my fieldwork proper had ended, but interaction with my informants continued in the course of everyday life, even as I turned to writing up my research. In the process of organizing, transcribing, sifting-through my data, and writing, I developed new relationships with key informants who helped track down sources and supplementary data, and were regularly willing to discuss ideas and questions. From time to time, I also talked about my work on the mailing list, sharing amusing facts or anecdotes from my research, and answering questions about the group’s history. In these interactions, I felt I was simply continuing as resident ethnographer, a role I had played since my arrival in the field.

However, as time went on, Cyborganic’s largest, most active period as a community receded further into the past and traffic on the mailing list tapered off, stopping altogether at the end of 2002. At this point, my role as Cyborganic ethnographer started to become the source of a new insider identity: community historian. I did not become conscious of this identity until I returned to graduate school full-time and began working to analyze my field research. In discussions, interviews, and e-mail surveys during this period (2004-2007), nearly all my informants expressed that they were happy someone was recording what they saw as an important period in the growth of the Internet, one rapidly disappearing from view in the wake of mass popularization and constant change. From their perspective, my
work had new value as history, or perhaps, salvage anthropology of a bygone era when the Web was new. Given the length of my fieldwork and pace of change in and around Cyborganic, my informants came to see my role as ethnographer as that of recording the community’s history. James Home, a key informant, first made me conscious of this shift in a 2004 interview. As we sat down to talk, he said he was going to share stories he used to think he would one day write himself because he wanted them told and wanted Cyborganic’s legacy to be remembered. On hearing this, I was struck by a deep feeling of inclusion linking Home and me, not as individuals, but as fellow Cyborganics. Of course, I was grateful to him personally for sharing his stories, but even more profound were the sense of solidarity in working together to get “the Cyborganic story told;” the honor of being entrusted with its telling; and the humbling, somewhat daunting, sense of responsibility that quickly follows on such honors.

Once Home made me conscious of it, I noticed other informants also looking to me to preserve the history of Cyborganic and early days of the Web. While I saw research and writing about Cyborganic as roles associated with my (outsider) identity as ethnographer, my informants saw these same activities in a different frame. In doing so, they were incorporating me into a new role within the community in much the same way Kondo described her informants had done “by placing [her] in meaningful cultural roles” (1986:77). By casting me as the community historian, my

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informants drew me in to a new insider position, illustrating the way ethnographic subjects can co-construct the researcher’s identities and roles both during and after fieldwork (Jacobs-Huey 2002:796). Though my outsider identity as ethnographer and insider identity as community historian were different framings of the same interactions, the two entailed very different positionalities. Their difference was muted when I was in the liminal period of beginning to write from my research, but still engaged in participant-observation. However, as I moved deeper into the writing process, the distinction became more significant. Recognizing and naming the historian role made me conscious that other Cyborganic members would be reading my ethnography. It brought into focus what Jacobs-Huey has written of as “the dilemmas of translation that native scholars may experience while negotiating accountability to multiple audiences—which are often inclusive of the academy and the communities in which they work” (2002:797).

Decisions about representation, including whose, and which, voice(s) to incorporate in published reports, entail “cultural brokering,” that is, reconciling disparate views about how and to whom one should represent the intricacies of everyday life among individuals within a community. Although this is a challenge that is, to some extent, shared by all social scientists (see D’Amico-Samuels 1997; Duranti 1997), managing the politics of representation may entail additional challenges for native scholars. For example, native researchers must be especially sensitive to the dangers of disclosing cultural secrets or airing what community members may consider “dirty laundry” (Behar 1993, 1995; Nakhleh 1979; Visweswaran 1994; Whitehead 1986, 1992). Given native scholars’ presumed communal ties, negative perceptions and consequences of such admissions may be more acutely felt by native researchers and their participants; further, missteps may make it more difficult to return home. Native scholars who accommodate publication or manuscript requests by their study
participants must also be mindful of the accessibility of their rhetorical strategies—if published reports are so technical as to be impenetrable, lay readers may suspect the ethnographer of being evasive or elitist. (Jacobs-Huey 2002:797-798)

In the case of my ethnography, the most salient of these challenges was the need to write for multiple audiences that included members of both my Cyborganic and academic communities. Given the cultural value placed on open sharing of information among Cyborganics, it was not a question of accommodating “manuscript requests” from my informants, but rather an expectation that my work would be made available to the community, either on the Web or via electronic mail, when it was complete. Completing the work thus entailed negotiating insider (community historian) and outsider (ethnographer) positions in choices of language, voice, and how to represent myself in the narrative. For example, I worked to make my academic language penetrable to the Cyborganics and other Web geeks who might read it, and to make discussions of the technicalities of networked computers accessible to academic readers across the disciplines. In this ethnography, the cultural brokering goes several ways. The descriptions above of identities and roles that position me inside Cyborganic relate only to one direction of translation. Thus, I turn in the following section to those that position me outside the community.
Outsider Identities and Roles: From Participant-Observer to Ethnographer

While it is accurate to see me, the ethnographer, as an insider in the community I studied, that representation is incomplete. I was also an outsider in a number of anthropologically significant ways. Figure 2.2 below charts subject positions I occupied throughout the research process that situate me outside Cyborganic.

<table>
<thead>
<tr>
<th>Before Fieldwork</th>
<th>During Fieldwork</th>
<th>After Fieldwork</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Born and raised outside the U.S. (age 0-15), Half-American/Half-Australian Second-generation Anthropologist Third-generation Expatriate</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Social Anthropologist</td>
<td></td>
</tr>
</tbody>
</table>

Figure 2.2: Outsider roles and identities of the ethnographer

Broadly speaking, the roles and identities that separate me from my informants are of two types: (1) those formed through personal life history prior to fieldwork; and (2) those formed through training and practice as a social anthropologist, before, during, and after fieldwork.

Unlike the vast majority of Cyborganic members, I was born and raised outside the U.S. My father, an American, social anthropologist working in
development⁷, spent his career abroad and I grew up in Nepal, India, Pakistan, and the Philippines before moving to the U.S. at the age of 15. To add to the mix, my mother is an Australian who was born and raised in British Malaya, the daughter of Colonial civil servants. Growing up, my brothers and I went to American and International Schools where instruction was in English but the students were from all parts of the world. We carried U.S. passports, and were part of the American expatriate community wherever we lived, but did not travel back to family or a hometown in “the States” on the annual “home leave” provided by my father’s employers. By the time I was born, my father’s parents had died, so we visited my maternal grandmother and relatives in Australia during summer holidays, or traveled as tourists in Europe, Asia, and the U.S. Though my mother became a U.S. citizen in the 1950s, she never fully assimilated and to this day, like the stereotypical immigrant mother, laments her children’s American ways whenever we deviate from her expectations of proper behavior.

This cross-cultural background constituted me as an outsider in American society in a number of ways, two of which have significance for the present research. One is that it led me to follow my father in becoming a social anthropologist; and the other is that it prevented my exposure to most of the American popular culture and media my college and Cyborganic peers were raised on. When I first entered college

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⁷ He worked, first for the U.S. Agency for International Development (USAID), and later for the Ford Foundation, Agricultural Development Foundation, and Winrock International.
in the U.S., I planned to study biochemistry. However, by the end of my freshman year—after a rough experience with culture shock and a good experience with a medical anthropology class—I declared anthropology as my major because it, at least, was familiar territory. Though I passed for and was supposed to be an American, I certainly didn’t feel like a native. Studying the culture anthropologically seemed like it would be a good idea. By the time I was a graduate student studying homeownership in America, I joked that I was a “native anthropologist” because I had been born into the discipline and felt as if I had no other home. While classmates who did not know my background might think “native anthropologist” referred to my doing research in my own society, those who knew it got the pun. This ironic self-identification reflects my liminal insider/outsider identification with the U.S. and highlights my decision to undertake ethnographic fieldwork there as a way to resolve that liminality by making a virtue of it. In a sense, becoming a social anthropologist allowed me to hide this personal dual identity in plain sight professionally, as the double persona of a participant-observer.

One reason I felt like a cultural outsider when I arrived in the U.S. is that I had had relatively little exposure to American popular culture and media. As a child, I remember my father listened to Voice of America and the BBC on his shortwave radio; brought home magazines (The Economist, Time, Newsweek) and newspapers (International Herald Tribune); and we went out to the occasional Hollywood movie (usually a classic) at the American Embassy compound. But that was about the
extent of my media exposure. When I was in eighth grade, my family moved to the Philippine capital, Manila, where theaters showed recent American movies, television broadcast a few American shows each day, and radio stations played U.S. Top 40 hits. Though, I had seen all these media before during family vacations, seeing them once a year and having regular access to them are rather different experiences. As most teenagers would have, I began learning from school friends how to engage and consume this media. Yet, television, movies, and entertaining diversions in general were not part of my family’s routine. Thus, it was not until I came to the U.S. that I became aware how deeply such media were integrated into the everyday lives of my peers there. Habits of consumption such as tuning into a favorite television show each week, record shopping, reading local weeklies for event or film listings and reviews, all were foreign to me. Though I did not think of it in these terms at the time, it was not simply that I lacked knowledge of popular culture (sports, entertainment trivia, commercials, etc.), but that I lacked a sense of being part of a popular public (Warner 2002). I also lacked basic skills of consumption (how to tune in, find event information, etc.), as I learned from observing college friends. The significance of this outsider position to the present study is that it made me viscerally aware of my peers’ habits of media use, and imaginaries of popular culture, as learned; and as things I would have to learn, if I wanted to avoid being taken for a bumpkin. I was keenly attentive to them in my efforts to fit in with my cohort of college friends. They were visible to me as cultural norms, rather than normal life; and this visibility proved immensely valuable to me
in studying the production and consumption of networked social media in the Cyborganic community.

In addition to life history, my work as a social anthropologist also positioned me in various outsider roles and identities in relation to my research subjects. Though the Cyborganics I lived and worked among knew I was engaged in anthropological research, to the outside observer, my activities as a field researcher were largely indistinguishable from my work on the Cyborganic project. During the first phase of fieldwork, that work entailed researching online services, taking notes, writing minutes and reports, making contacts, and coordinating volunteers. Even when my research activities were foregrounded, for instance, in the formal interviews and group history elicitation undertaken for the IFTF project on telecommunities, they were assimilated with my insider role as Cyborganic’s community person. This took place in much the same way that my post-fieldwork role as ethnographer came to be framed as that of community historian. The idea of someone studying the community and writing about it was familiar to my subjects and only became more so as growing interest in the Internet regularly brought reporters and news crews to Cyborganic’s weekly dinners. Thus, my sense of researcher as an outsider status stemmed primarily from my own self-understandings and identification as an anthropologist. These led me, for example, not to participate anonymously (or under a pseudonym) in online forums, though that was common practice; and not to take any work that required signing a non-disclosure agreement.
These, however, were private, individual choices of which few of my informants were aware.

While in the field, it seemed felicitous that my work as a participant-observer was readily assimilated with roles that were culturally meaningful to my informants. After my fieldwork, however, this very assimilation posed a challenge. My training in anthropology had prepared me to expect difficulties entering the field, but in the case of my Cyborganic research, it was exiting that proved most challenging. One challenge, as I have discussed, was that my field site followed me home, in a sense, and my participation in the community continued online after I left the Bay Area. In this context, my process of writing up was compromised by continued interaction that kept me from “drawing away from the immediacy of the ethnographic encounter” (Kondo 1986:82). Leaving the field after such a protracted period proved exceedingly difficult, particularly because it entailed replacing a dense field of social relations and collaborative activity with the solitary tasks of writing up. During fieldwork, I had come to regard my computer, not simply as a place to work, but also as a social portal. With e-mail and instant message channels open on the desktop, the temptation to ask informants to elaborate some point or confirm some detail was ever present. Initially, I saw this situation as beneficial to my work. Not until I encountered Kondo’s essay on the “dissolution and reconstitution of self” entailed in ethnographic practice did I recognize my exit from the field as incomplete. As Kondo argues, writing the ethnographic text requires distance and closure, “freezing
the disturbing flux” (1986:82). In my case, the process of distancing required me to change my view of what it meant to sit down at a computer. It required a conscious break with habits and expectations of networked sociality developed over the course of fieldwork. I could no longer regard my computer as a window on my social world and had to remove myself from the various online forums that had become part of my daily life.

Once I realized the need for remove and closure, I found that the writing process itself produced distance along with an awareness of writing for multiple audiences. Defining terms that were common place to my informants and developing an analysis of their social imaginaries and practices strengthened my identity as an ethnographer and recognition of this as an outsider position. Finally, I found reflecting on and articulating the various subject positions I had occupied over the course of research and writing to be a necessary component of the distancing process entailed in the production of the ethnographic text.
Chapter Three

Cyborganic Sources: Technocultures and Countercultures

A number of sub-cultures and cultural legacies came together in Cyborganic, providing the narrative frames, social, and cultural resources to imagine and realize the project. The histories of Silicon Valley as a high-technology zone of entrepreneurial innovation, of personal and networked computing, and of Bay Area bohemian countercultures are all, in the long view, branches of Cyborganic’s genealogy. As Castells has noted, the history of the Internet’s development is a “unique blending of military strategy, big science cooperation, and countercultural innovation” (1996:351) and that history is expressed in the Internet culture he describes as “characterized by a four-layer structure: the techno-meritocratic culture, the hacker culture, the virtual communitarian culture, and the entrepreneurial culture” (2001:37). This is an apt summation of the cultural tributaries to Cyborganic and understanding how this confluence of cultural layers came about is essential to understanding the role of communities of production and use in the development of networked social media. Many studies and histories of Silicon Valley have emphasized the role of the military-university-industrial complex in the development of the Internet (Abbate 1999) and region as a hub of technological innovation (Sturgeon 2000; Leslie 2000; Saxenian 1994; Hanson 1982) and these are paths through which the blending of cultural layers (i.e. sub-cultures) occurred. In addition,
journalists (Hafner and Markhoff 1991; Markhoff 2005) and scholars (Turner 2005, 2006) and have traced the historical connections and social networks linking the countercultural substrates of Internet culture (hacker and virtual communitarian) and the institutionalized ones (techno-meritocratic, entrepreneurial) to one another and to the Bay Area. Drawing on this work, this chapter presents a historical account of the way these layers came together in the development of Silicon Valley, personal computing, and the Internet in order to trace the long legacy of producer/users and their communities of practice in these parallel endeavors.

**Founding Narratives and Origin Myths**

Two origin myths are associated with the birth of Silicon Valley in both popular lore and scholarly literature. First is the story of two Stanford graduate students, William R. Hewlett and David Packard, who founded the firm Hewlett Packard in 1939 with the help of their professor, Frederick Terman, in their garage at 367 Addison Avenue in Palo Alto (Hanson 1982; Rogers and Larsen 1984; Saxenian 1994). In 1989, California state landmark officials installed a plaque designating the Hewlett Packard garage “The Birthplace of Silicon Valley” (Sturgeon 2000; Darlin 2005). The heroic ideal of “the garage start-up” looms large in Silicon Valley and has since been pursued many times (with varying degrees of success) in companies from Apple (founded in a garage in Los Altos) to Google (started in a garage in Menlo Park) and thousands of lesser known ventures.
The second event often cited as seminal in the history of the Valley is the formation of Fairchild Semiconductors in 1958 (Casement 1984; Morgan and Sayer 1988; Scott and Angel 1987; Scott and Storper 1987; Storper and Walker 1989; Bahrami and Evans 1995). In the mid-1950s William Shockley, who with John Bardeen and Walter Brattain invented the first practical transistor at Bell Laboratories in 1947, moved back to his one time hometown, Palo Alto, to set up his own company. He recruited from the East Coast a team of eight scientists. This team “became the founding nucleus for the growing West Coast semiconductor industry” when they left en masse in 1957 and started their own company, Fairchild Semiconductor (Bahrami and Evans 1995:168). Over time, Fairchild founders and employees started many “spin-off” companies of their own in a pattern of new firm formation and collaboration that has come to typify Silicon Valley: “a genealogy of semiconductor start-ups through 1986 indicated that 124 start-ups could trace their roots to Fairchild” (Kenney and Von Burg 2000:231). Though the term “Silicon Valley” dates only to 1971\(^1\), the origin story of Fairchild and its many “Fairchildren” was already being told in the pages of *The Economist* in 1979:

[Shockley] recruited from the east coast [sic] a number of the most brilliant young electronics men around. Several of them were dissatisfied with Shockley’s management style. They left and started a company of their own, Fairchild Semiconductor. Some of them then left Fairchild to start more companies. And so on. The process is still going on. The ancestry of most of the companies forming Silicon

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\(^1\) The term appeared in print in a 1971 article that Don C. Hoefler wrote for *Electronic News*, a weekly electronics industry paper. (Malone 2002:xix)
Valley can be traced back to Shockley through his recruits to Palo Alto. It was one of his protégés who was co-inventor of the integrated circuit. (Casement 1984:17-18)

The protégé mentioned is Robert Noyce, who along with fellow Fairchild founder Gordon Moore, left to start Intel, the company that launched the microprocessor in 1971 and has dominated the semiconductor industry ever since. Advanced Micro Devices (AMD), National Semiconductor, and LSI Logic are other noted spin-offs of Fairchild Semiconductor.

The Hewlett Packard garage and Fairchild spin-offs are significant, both as historical events and origin myths that circulated among my Cyborganic informants, but like the term “Silicon Valley” itself, they take the semiconductor industry as the origin point for the region’s unique blend of technical innovation and economic productivity. In doing do they privilege the role of entrepreneurial culture, giving only a nod to the techno-meritocratic in recognizing Terman’s and Stanford’s role in the founding of Hewlett Packard and Bell Labs’ connection to Fairchild. This obscures the formative roles of the military, world history, and earlier communications technologies in the genesis of the region and its unique cultural hybrids in the thirty years before the founding of Hewlett Packard.

**Before Silicon: Telegraph, Radio, Microwave Electronics**

In 1909 Stanford graduate Cyrus Elwell founded Poulsen Wireless Telephone and Telegraph with $500 in venture capital from Stanford University President, David Starr Jordan. Initially named for the Poulsen arc transmitter it used, the firm
soon became the Federal Telegraph Company (FTC, later bought by ITT). With investment from San Francisco financiers such as the Crocker family, FTC built a profitable business providing wireless telephone and telegraph services on the West Coast. The vacuum tube—which preceded the transistor and integrated circuit\(^2\) as the basic component of the region’s emerging radio, television, and military electronics industry—was perfected at the FTC laboratories in Palo Alto in 1912 by inventor Lee de Forest with funding from Stanford. FTC is also notable for the spin-off companies that came from it. The first, only a year after FTC’s founding, was Magnavox in 1910, and later Litton Industries (1932) and Fisher Research Laboratories (1936). By 1917 Magnavox “had perfected the design that most loudspeakers are still based on today” (Sturgeon 2000:30). At the outset of World War I the Navy contracted FTC to provide shipboard transmitters for all the Liberty Ships and “probably all” battleships. The “war work at FTC culminated in installation of a pair of one-thousand-kilowatt transmitters at the Layfayette Radio Station, fourteen miles southwest of Bordeaux, France,” and though the war ended before the project was finished, the French Government paid the company to complete it. (Sturgeon 2000:22-23)

The end of World War I brought cancelled orders and lean times for Bay Area electronics firms struggling to survive in an industry still dominated by Eastern

\(^2\) Each was a more miniature and efficient way to modify a signal by controlling the flow of electrons in an evacuated space which is the basis of both radio and electronic logic signals.
Laboratories and contentious battles over radio patents (Leslie 2000:52). Though none of the Bay Area companies became very large before the Second World War, the regional tradition of technical cooperation and innovation took shape in the period between the two World Wars. The region not only played a pioneering role in the development of the vacuum tube industry in the 1920s and 1930s, but also in the development of television when Philo Fransworth, backed by San Francisco financiers, made the first completely electronic transmission of a television image in San Francisco in 1927 (Sturgeon 2000:34-5). Ralph Heintz, pioneer in short-wave radio systems for aircraft, and inventor of the “gammatron” tube, together with his partner Jack Kaufmann, and their companies H&K, Heintz and Kaufmann, and Globe Wireless, also played a leading role in the Bay Area electronics industry of this period.

In his essay “How Silicon Valley Came to Be” (2000) Timothy J. Sturgeon describes the aggressive and litigious Radio Corporation of America (RCA) as an unwitting catalyst for Silicon Valley’s culture of open standards and inter-firm cooperation. During World War I radio became so crucial that the federal government made it illegal for foreign companies to hold more than 20 percent interest in any U.S. based radio station. Thus, by government mandate General Electric (GE) acquired American Marconi in 1919 and the new company became RCA. With the rapid rise of commercial radio in the 1920s, RCA became a dominant force as electronics came to permeate more and more social arenas; and under the
management of David Sarnoff, General Manager of the company from its founding until his retirement in 1970, RCA worked vigorously to protect its patent monopoly. In the mid-1920s, Westinghouse and GE refused to sell vacuum tubes to FTC because its parent company (Mackay) “was perceived as a threat to RCA’s near monopoly on long-distance radio communications.” FTC brought in Heintz and he reminded them that because Lee de Forest had made his discoveries while an employee of FTC, the company held “shop rights” under de Forest’s patent to manufacture vacuum tubes for internal use without paying royalties (Sturgeon, 29). Besides FTC, Magnavox, Farnsworth, H&K, and a host of smaller companies had similar encounters with RCA lawyers. In this manner, RCA not only spurred the development of local tube production and the practice of using technical means to circumvent patent restrictions, but also shaped the regional economy and culture in other important ways. As Sturgeon argues:

the early electronics industry in the San Francisco Bay Area labored under constant threat of RCA litigation…A few Bay Area companies were persistent thorns in the side of David Sarnoff, and some were able to beat him in court. Many others were small enough and far enough away to simply fly under RCA’s radar. If the cooperative nature of Bay Area electronics companies during the 1920s, 1930s, and 1940s had any one source, it was opposition to the domination of the field by RCA. (Sturgeon 2000:28)

RCA’s dominance also influenced the region’s firms to specialize in instrumentation, electronic components, military electronics, and advanced communications: markets in which RCA had no interest and where their patents were less relevant. A similar pattern was seen again in the 1990s, with Microsoft in the role of RCA as the
opposition against which Valley firms cooperated and the open source movement coalesced.

The early history of the electronics industry is significant because it undermines the myth of “instant industrialization” showing that Silicon Valley is “entwined with the long history of industrialization and innovation in the larger San Francisco Bay Area” and that the characteristics for which the Valley is known today were already present more than thirty years before the founding of Hewlett Packard (Sturgeon 2000:47). Rather than instant industrialization, Sturgeon argues:

what emerges instead is a portrait much more typical of studies in economic and historical geography: industrial development takes a long time to build up momentum, is profoundly structured by place and historical context, and acquires path-dependent characteristics that continue to influence outcomes far into the future. (Sturgeon 2000:16)

From local venture capital and university-industry collaborations, to a culture of open protocols, inter-firm cooperation, “and a keen awareness of the region as existing largely outside the purview of the large, ponderous, bureaucratic electronics firms and financial institutions of the East Coast—all of these well-known characteristics of Silicon Valley were as much in evidence from 1910 through 1940 as they have been from the 1960s onward” (Sturgeon 2000:16-17).

This earlier history is also important because it underscores the crucial role of the military in the formation of Silicon Valley, not only as a market for the Valley’s wares, but also as an agent that intentionally set bid requirements beyond known limits to spur technical development (Sturgeon 2000, Leslie 2000). As historian of
science and technology Stuart Leslie has argued, Silicon Valley “owes its present configuration to patterns of federal spending, corporate strategies, industry-university relationships, and technological innovation shaped by the assumptions and priorities of Cold War defense policy” (2000:49). As the rest of this history will show, from FTC’s World War I Navy contracts to the opening of Moffet Naval Airbase in Santa Clara county in 1933, and founding of dozens of local firms during and after World War II, the military has played a formative role. Throughout this history, *communications* has been the regional specialty, from telegraphy and radio to all manner of microelectronic transmission, reception, detection, countermeasures, and signal processing.

**From Military-Industrial Complex to University-Technology Park**

Most histories of Silicon Valley begin with Frederick Terman, professor of Electrical Engineering at Stanford University whose vision and leadership in fostering university-industry collaboration were central to the genesis of the region. Son of a Stanford psychology professor, Terman grew up on the campus and attended college there. A radio enthusiast since boyhood, he earned a degree in chemistry by the age of 20 and another in electrical engineering before heading off to MIT for a doctorate in 1922. He returned to teach at Stanford in 1925, bringing with him a philosophy of university-industry cooperation learned at MIT, evidenced in his practice of taking students on field trips to local radio and electronics firms, including Farnsworth’s television lab in San Francisco. In 1927, Terman wrote in the
journal *Science* of his vision for “a community of technical scholars…composed of industries using highly sophisticated technologies, together with a strong university that is sensitive to the creative activities of the surrounding industry” (Winner 1992:37). Terman built a pioneering program in radio engineering at Stanford and was full professor and head of the Department of Electrical Engineering by 1937 (Sharpe 1991). As previously noted, David Packard and William Hewlett studied with Terman and, though Packard took a job on the East Coast upon graduation, Terman persuaded him to take a leave of absence in 1938 and return to Palo Alto to participate in the “Wide Grid Tube Project” with Russell Varian and Charles Litton. The next year, Hewlett Packard started in Palo Alto’s most famous garage, and “spurred by massive orders” from the military “for its line of electronic measuring instruments, jumped from nine employees and $37,000 in sales in 1940 to one hundred employees and $1 million in sales just three years later” (Leslie 2000:53).

In 1941, Vannevar Bush, Terman’s mentor at MIT, was named director of the new Office of Scientific Research and Development (OSRD), the group that administered the Manhattan Project. Bush, who had been Dean of Engineering at MIT from 1932-1938, “revolutionized the relationship between science and government by funding universities rather than government labs to pursue basic military research” (Saxenian 1994:13). He tapped Terman to become director of the Harvard Radio Research Laboratory (RRL), in Cambridge, Massachusetts. Throughout the war, Terman not only developed radar jamming and
countermeasures technology, but also taught companies like RCA, Western Electric, and General Electric how to manufacture the designs. When he returned to Stanford in 1946 as Dean of Engineering, he brought with him: 1) a team of RRL alumni; 2) the conviction that the collaboration of government, industry, and academia had won the War; and, 3) the vision of applying that formula to the development of a local electronics industry in Silicon Valley.

One case that illustrates this confluence of university, industry, and military interests is that of Russell and Sigurd Varian. In 1937 the Varian brothers, working with Stanford physicist William Hansen, invented the klystron tube under “an unusual contract with the university” in which they “were granted access to faculty, laboratory space, and modest funding for materials, in return for a half interest in any resulting patents” (Leslie 2000:52). The klystron was rapidly developed during the War for use in radar and aircraft navigation. Sperry Gyroscope Company came to produce the tubes under an agreement that provided substantial funding for klystron research at Stanford and “gave Sperry an exclusive license to make, use, and sell any microwave equipment developed in the university laboratory” (Leslie 2000:52). Sperry relocated the Stanford klystron group to their Long Island laboratories during World War II to bring it closer to manufacturing. However, after the War, group members returned to California with plans to set up a business of their own. In 1948, the Varian brothers founded Varian Associates to manufacture klystron tubes. With financing to extend manufacturing capacity from the Defense Production
Administration and the Air Force, and the demand created by the Korean War, “Varian’s sales climbed from $200,000 in 1949 to $1.5 million two years later, to $25 million by the end of the decade, with military tubes accounting for all but a small fraction” (Leslie 2000:55-6).

In 1951 Stanford University leased land to Varian and Hewlett Packard. Three years later, to extend and institutionalize university-industry cooperation, and corporate funding of academic research, university trustees decided to establish Stanford Industrial Park. In addition to Hewlett Packard and Varian, early tenants included General Electric, Admiral, Eastman Kodak, and Watkins-Johnson. Renamed Stanford Research Park, the site now occupies 655 acres on the Stanford campus “and leases space to some seventy technology-oriented firms” (Winner 1992:37). NASA (then NACA) opened the Ames Research Center at Moffet Field in 1939 and in the post-War period the nation’s major electronics firms followed the government’s lead: Xerox, IBM, Westinghouse, Philco-Ford, General Electric, Sylvania, ITT and Lockheed all opened research and development facilities in the region. Companies were drawn to the region’s concentration of technical talent and many located new facilities in and around Santa Clara County. When the Army Signal Corps contracted Sylvania to build and run a new lab for missile countermeasures in 1954, the company situated it in Sunnyvale, close to Stanford’s pool of faculty consultants and graduate students (Leslie 2000:59). Annalee Saxenian, who has studied the development of Silicon Valley closely, asserts: “Three
institutional innovations during the 1950s reflect the relationships that Terman pioneered in the region.” One was the development of Stanford Industrial Park. Another was the Honors Cooperative Program through which engineers at local companies were encouraged to take graduate classes, either “directly or through a specialized televised instructional network which brought Stanford courses into company classrooms.” Third was the establishment of Stanford Research Institute (SRI) “to conduct defense-related research and to assist West Coast businesses.” The importance of SRI will be discussed in connection with the later history of the personal computer and Internet. (Saxenian 1994:23)

**Spawn of Sputnik: Transistors, Microchips, and Consumer Electronics**

The launch of Sputnik in October 1957 is often cited as setting off the “space race,” as the U.S. Government, alarmed by the technological capability of the Soviets, embarked on a major initiative to achieve superiority in space and missile technology. The Sputnik crisis led to the creation of NASA and the manned space program; educational programs in math and science to train a new generation of engineers; dramatic increases in funding for scientific research;³ and the Polaris and Minuteman missile programs. The Cold War transformed the U.S. economy as the

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³ In 1959, Congress increased the National Science Foundation budget to $134 million, almost $100 million higher than the year before and by 1968 that budget was nearly $500 million (National Science Foundation, “An Overview of the First 50 years,” [http://www.nsf.gov/about/history/overview-50.jsp](http://www.nsf.gov/about/history/overview-50.jsp), accessed February 27, 2006).
federal government stimulated industrial development by funding high technology research at universities. MIT and Stanford were the chief recipients of defense and aerospace contracts that remade the regional economies around them in the 1950s and 1960s. By 1970, Route 128, near MIT, and Silicon Valley, near Stanford, had become the world centers of electronics research and production (Saxenian 1994). Between 1959 and 1979 Fairchild Semiconductor, celebrated as the original spin-off, “spawned fifty new companies” in the Valley “including Intel, National Semiconductor and Advanced Micro Devices (AMD)” (English-Lueck 2002:761).

From a purely technical perspective, at the center of this massive growth lies the transistor, the small device that over the last fifty years has become more integral to our society the more it has dropped in price and size. Though the first patents on the transistor principle were made in Germany in the late 1920s, Shockley, Bardeen, and Brattain at Bell Labs were the first to make a practical transistor in 1947. In 1953, Bell began licensing its transistor technology to other companies. Among the first licensees were: General Electric, IBM, Raytheon, the newly formed Texas Instruments, and Tokyo Telecommunications Engineering, a small Japanese company that became Sony Corporation when it entered the U.S. market in the mid-1950s. Over the next twenty years, transistors replaced vacuum tubes in most electronics and made possible many new technologies, such as integrated circuits and personal computers.
Early transistors were expensive, but within seven years of their invention had fallen in price to less than a dollar each and were entering the mainstream of American industry. Hearing aids and radios were the first commercial products to incorporate the new technology. The first consumer transistor radio went on the market in time for Christmas in December 1954 and used transistors manufactured by Texas Instruments (TI). The announcement issued by the company for the occasion describes the product as a historic milestone.

The introduction of this first mass production item to use the tiny transistor to replace the fragile vacuum tube leads the way for the long-predicted transistorization and miniaturization of many other mass production consumer devices. TIers can justly be proud of being the first to produce a high-gain transistor at a cost permitting its application to the high-volume commercial market. (Texas Instruments, October 18, 1954)

Though it is not unusual for announcements from technology companies to claim historic importance, this one is noteworthy because it describes consumer electronics as “long-predicted” and underscores *miniaturization* and *cost* as the key material conditions for its realization. However necessary, material conditions are insufficient and attention to the social conditions and construction of electronics technology sheds light on the apparent paradox that while mass consumer applications were widely anticipated in the 1950s, it was only in the late 1970s and 1980s that they became part of mainstream, everyday life in America. Despite the great expectancy surrounding transistors in the consumer market, the market itself did not drive research and development of ever smaller and more powerful electronic components.
While the Japanese took the lead in bringing mass-produced “transistorized” goods to consumers in the late 1950s and 1960s, Silicon Valley remained focused on developing increasingly sophisticated electronics for the defense industry. As Markoff so eloquently put it: “The shrinking silicon chip did not emerge in isolation… but grew out of the twin geopolitical challenges of placing a man on the moon and squeezing navigational circuitry into the nosecone of an ICBM” (2005:xii). Unlike the instant industrialization associated with men such as Edison, where inventions are rapidly turned into consumer products, microelectronics involved a longer period of research and development in which science was applied to technological objectives shaped by the Cold War.

By the start of the 1960s multiple transistors were being integrated on a single layer of semiconductor material to create integrated circuits (ICs) or microchips (chips). Though Jack Kilby of Texas Instruments was the first to demonstrate an IC in 1959, Noyce at Fairchild developed one independently at about the same time and held the key patent for the “planar” process of chip making. In hindsight, putting more and more components on a single chip leads fairly directly from the invention of the IC to the production of the first microprocessor in 1971, yet this evolution was neither automatic, nor inevitable. The first commercial ICs were more expensive and less versatile than transistors and were slow to catch on. Producing new chips was capital intensive and if 10% of an initial manufacturing run worked, that was considered good. Advances in industrial processes, such as
photolithography and ion implantation, and in business processes, such as
standardizing production on a few basic circuits (a tactic Silicon Valley has
employed ever since), were key to the cost reductions that made microelectronics a
transformative social phenomenon. (Casement 1984: 62)

With the exception of Motorola, RCA, and Texas Instruments, most of the
semiconductor companies of the 1960s were in the Santa Clara Valley. While the
ingenuity of the Valley’s engineers and entrepreneurs was necessary, it alone was not
sufficient to effect the spiraling reduction in cost of computing power that has been
central to the microelectronics revolution, and the success of Silicon Valley. As
many have noted (Sturgeon 2000; Leslie 2000; Saxenian 1994; Hanson 1982;
Winner 1992), the U.S. government and military played a crucial role in the region’s
“start-up” phase, pushing technological limits, funding basic research, and creating a
steady “cost plus” market for Silicon Valley’s wares.

New means of working with electricity usually have been forged in
the crucible of military necessity. Often, however, the carrot held out
by the military has not been so much in the form of direct funding,
although there has been plenty of that, but in the form of a first market
for untested, still-expensive devices considered too risky for the
commercial market. For the computer, the transistor and the IC, the
military served as first customer, followed by government bureaus,
business, industry, and, finally a broad range of commercial and
consumer applications. With the microprocessor, however,
semiconductor developments began unfolding so rapidly that the
military found it hard to keep up. (Hanson 1982:119)

Ever since the launch of the transistor in the early 1950s the complexity of electronic
circuits has doubled every two years, while the cost has decreased several thousand-
fold. This phenomenon has come to be known as “Moore’s Law.” In 1965, when no
more than fifty transistors could be fit on a chip, Intel co-founder Gordon Moore
wrote, “by 1975 a chip would be built with as many as sixty-five thousand
transistors” (Markhoff 2005:12-13) Both the press and the semiconductor industry
seized on the statement and it was enshrined as a sort of law of technological
development stating that the complexity of integrated circuits will double (and thus
halve the price) approximately every 18 months. Though in practice, it turns out to
be closer to 24 months, this rate of increase has held for the last thirty-five years,
setting the pace of local life in the Valley as well as the material conditions for the
more global economic and social transformations of the information age. Both
Michael S. Malone (2002), said to be the country’s first high-technology journalist,
and anthropologist Jan English-Lueck (2000), have written insightfully about the
ramifications of this continual acceleration on Silicon Valley life.

Though the U.S. government served as first customer or, as Stuart Leslie has
put it, “the biggest ‘angel’ of them all”⁴, innovation in semiconductors was also
spurred by the high volume civilian market pioneered by the Japanese and Texas
Instruments beginning in the late 1960s. In 1971, in response to an order from a
group of Japanese desktop calculator manufacturers, Ted Hoff at Intel in Silicon
Valley led development of the first microprocessor by putting all the required math

⁴ “Angel” is the term for venture capitalists that provide companies their first round
of investment.
and logic circuitry on a single silicon chip. Hoff, working with chip designers Stan Mazor and Federico Faggin, was simply trying to fit within the size constraints set by the calculator makers, yet the microprocessor they created was a significant breakthrough. As Hoff insightfully noted, “The actual invention of the microprocessor wasn’t as important as simply appreciating that there was a market for such a thing” (Hanson 198:118). But the invention was important because it brought about further economic efficiencies and broadened the range of functions that chips could perform.

With the microprocessor the semiconductor industry could build a standard chip with stored programs in memory to fit a range of applications, from pocket calculators to video ping-pong. The “computer on a chip” as it was somewhat inaccurately dubbed, came at a very good time for Silicon Valley and U.S. electronics companies. As the Vietnam War and defense spending waned in the early 1970s, the microprocessor opened many in the U.S. and abroad to new business and consumer applications of computing power. These provided Silicon Valley with new customers, markets, and businesses to offset the cut backs of their “first customer,” the U.S. military:

Military and aerospace markets accounted for a diminishing share of the semiconductor business as the growth of the computer industry fueled demand for transistors and integrated circuits. Government purchases, which had accounted for half of total semiconductor shipments during the 1960s, dropped to only 12 percent in 1972, and continued to fall throughout the decade. Silicon Valley…thus
managed to achieve gradual transition to commercial production during the 1960s and 1970s. (Saxenian 1994:26)

In 1971, the year Silicon Valley got its name, the region was primarily in the semiconductor business, but ten years later it was the center of a vast computer industry, a hub in a network of related industries from minicomputers, databases, and software, to video games and personal computers. This transformation did not simply arise as a natural result of the falling cost of computing power. It was a cultural transformation.

In 1967 computer music researcher John Chowning developed a technique known as frequency modulation synthesis that made it possible for electronic components to approximate the sound of orchestral instruments. “Four years later, he handed the technology to Stanford’s Office of Technology Licensing, which in turn approached a number of American instrument makers. None of them were interested and it was Yamaha [of Japan] that ultimately licensed Chowning’s invention” (Markhoff 2005:100). I note this turn of events to point out how industry in Silicon Valley was not yet oriented toward the civilian market. As Hoff indicated, that was something to be discovered and developed, not simply an effect of technology. During the 1970s the primary costs of computing lay in hardware and processing power, but by the 1980s these had fallen to the commodity level and software represented the major cost. That transition, from hardware to software, marks an important departure from industrial to post-industrial. It was a sort of socio-economic phase change akin to the way increasing miniaturization of the circuit
brings chip design into the realm of quantum mechanics. Silicon Valley’s approach lay not so much in exploiting commercial applications of the microprocessor\textsuperscript{5}, as in driving and adapting to this transition: First by developing the technology and manufacturing that made computing power so micro in terms of cost, size, and heat/electrical power; and second by building on its regional tradition of inter-firm cooperation to create a “network-based industrial system that promotes collective learning and flexible adjustment among specialist producers of a complex of related technologies” (Saxenian 1994:2). As many scholars have noted (Saxenian 1991a, 1991b, 1993, 1994; Castells and Hall 1994; Bahrami and Evans 1995; Cohen and Fields 1999; Kenney, 2000), it is this second development that distinguished the region as a hub of technical innovation and economic dynamism as it emerged from the economic crises of the 1970s engaged in a host of new enterprises known today as the computer industry. While the region’s industrial system may have enabled its nimble transition, the computer industry did not arise whole cloth from the semiconductor and electronics industries of the 1960s. Rather, a number of different tributaries came together to produce it. Consideration of these sources will serve to further highlight the cultural and conceptual changes that coalesced in Silicon Valley starting in the 1970s in the production of personal computing.

\textsuperscript{5} Commercial applications were certainly pursued in a wave of consumer electronics that appeared in the 1970s (e.g. digital watches, Pong\textsuperscript{TM}, Speak and Spell\textsuperscript{TM}). However, as Hanson shows these markets quickly stagnated as chip-makers found, for example, that selling watches required knowledge of the jewelry and fashion business, and was unlike the semiconductor business in other significant ways.
In his book on innovation and economic growth in nineteenth century America and Britain, Paul David (1975) questions the practice historians of technology have adopted of separating “the history of inventions” from “the history of common practices” and studying these independently. Noting David’s distinction, James Boyle argues that “the fixation on authors, inventors, and entrepreneurs tends to obscure the importance of continuity, indebtedness, and evolution and to overemphasize that of transformation, originality, and revolution” (Boyle 1996:207). Structured thus far by the narratives of technical invention and mass production, this account could be seen as perpetuating the fixation Boyle critiques. Yet, it has also worked to underscore the long gestation preceding Silicon Valley’s christening in 1971 and the role of the state, military, and U.S. taxpayers, in the genesis of what became, in the words of venture capitalist John Doerr, “the largest legal accumulation of capital in the twentieth century: the PC industry” (Markhoff 2005:197). Langdon Winner argues the importance of this role in his critical examination of Silicon Valley as a “model of what a postindustrial society might look like” (1992:32).

Without the military’s enormous subsidies throughout 1950s and 1960s, the microelectronics industry would certainly have developed more slowly, for there was no socially pressing need for its semiconductors, no significant domestic market. The government in effect absorbed the burden of risk of a number of highly uncertain enterprises—a point usually ignored in media and industry folklore. As silicon chips began to enter video games, microwave ovens,
personal computers, and other consumer goods in the late 1970s, credit for the industry’s success was showered on entrepreneurs…and their venture capitalist counterparts… The true long-term risk-takers, overlooked by Fortune and Business Week, were ordinary American taxpayers. (Winner 1992:42-43)

Because the Valley’s myths of heroic entrepreneurialism and technical innovation are themselves an object of study, I have organized this account in terms of the technical evolution from vacuum tubes to microprocessors, loosely following conventional history, but also highlighting the role of the military and Cold War. While this approach risks the artifactual bias of a “history of inventions,” it also enables me to show that, even among those most closely involved in the creation of these technologies, the evolution of common practice was more gradual, multiplex, and sometimes surprising, than conventional accounts indicate.

The PC industry did not spring from the microprocessor *ipso facto*, the inevitable result of the invention itself; and Silicon Valley did not transform overnight into a global hub of information society. The region is defined by almost one hundred years of development as a high-technology zone, by the countercultural social movements of the 1960s and 70s, and by the separate histories of the personal computer and computer networking. What we understand today as the Internet represents the confluence of a number of distinct forces, some of which are contradictory, many of which are redundant (e.g. multiple, independent instances of similar technologies), and most of which involve the gradual improvement of
process and technique through the ideas and energies of many thousands of people applied over many decades.

Ideas of personal computing and computer networking preceded microelectronics and both have long pre-digital histories that span a variety of technologies such as the telegraph and amateur radio. Desktop and even portable calculating machines existed in the first half of the twentieth century. Vannevar Bush, who had been Terman’s mentor at MIT, wrote in a 1945 article for *Atlantic Monthly* of his idea for the “memex,” a “device in which an individual stores all his books, records, and communications, and which is mechanized so that it may be consulted with exceeding speed and flexibility” (Bush 1945). The article, “As We May Think,” predicted many kinds of technology, from hypertext, speech recognition, and personal computers, to the Internet and World Wide Web, and influenced such computer pioneers as Douglas Engelbart and Ted Nelson. Yet despite the long history and wide influence of these ideas, neither the PC nor the Internet emerged along an expected path. For those acquainted with its history, the puzzle of personal computers is why they took so long to arrive. As Ted Nelson, who coined the term “hypertext” in his 1965 proposal for a memex-like system called *Xanadu*, wrote in 1977: “The question is not why have home computers come? The question is what held them back?” (Nelson 1977) One obstacle Nelson and others (Freiberger and Swaine 2000; Markhoff 2005) point to was a “high priesthood” in government and corporate bureaucracies that kept computers large, remote, and
locked away from users in air-conditioned rooms. In the last twenty years scholars in science and technology studies (STS) have called attention to the role of users in the social construction of technology (e.g. Bijker et al. 1987). Though they are typically viewed as consumers acting through the market only after, in the language of social constructivism, “closure of debate about the emerging technical (and cultural) artifact is in sight” and specific practices have coalesced into a new medium (Feenberg and Bakardjieva 2004:41), STS scholarship has worked to counter this approach. In terms of the personal computer and the Internet, recent accounts by veteran journalists of Silicon Valley (Freiberger and Swaine 2000; Markhoff, 2005), STS and other scholars of the Internet (Abbate 1999; Castells 2001), have emphasized the direct involvement of producer/users in creating these technologies. The account that follows of the shift from defense and semiconductors that characterized early phases of Silicon Valley’s development, to the PC and Internet industries that followed, draws on all these works to highlight the importance of recognizing the close, symbiotic, and cybernetic connection between the history of invention and the history of common practice in the social construction of these technologies. Several good chronicles tell of the development of the personal computer (Hanson 1982; Freiberger and Swaine 2000; Roy 2001; Waldropp 2001; Markhoff 2005) and I will not present a comprehensive overview here, but will focus instead on the vital role of users and the symbiosis between their communities of practice and the development of the personal computer industry after 1975.
In the thirty years following World War II, IBM dominated the U.S. computer industry and centered it firmly within the East Coast research-military-industrial complex that Terman had sought to transplant to Silicon Valley. Through most of the 1960s IBM remained the largest of eight major computer companies (with UNIVAC, Burroughs, Scientific Data Systems, Control Data Corporation, General Electric, RCA, and Honeywell). These were known in the business world as “IBM and the seven dwarfs” (Kidder 1981:11), given IBM’s much greater size and influence. Scientific Data Systems was a Santa Monica, California company later sold to Xerox, but all the others were in the Northeastern U.S. IBM, itself a large, corporate, bureaucracy, fostered the “high priesthood” approach to computers, where giant, costly machines were leased to users, serviced by expert consultants and technicians, and sold by zealous salesmen in white shirts. IBM, and therefore everybody else, saw computers as serious tools for serious people and focused on making mainframes for government, military, and corporate customers, not individual consumers.

As transistor and core memory technology developed in the late 1950s, smaller “minicomputers,” the size of a few filing cabinets rather than a room, became possible. “Like other important postwar technologies, the minicomputer was developed through the combined efforts of federal military funding and university research” (Saxenian 1994:18). Ken Olsen, a researcher at MIT’s Lincoln Laboratory who had been working on ways to make a smaller, more general-purpose computer,
left academia in 1957 to found Digital Equipment Corporation (DEC), the first and largest of the minicomputer companies of the late 1950s and 1960s. By the early 1970s, the computer industry consisted essentially of two types of companies: those that sold room-sized mainframes that “were designed by an entire generation of engineers, cost hundreds of thousands of dollars, and were often custom-built one at a time;” and those that sold cheaper, more compact, minicomputers, built in larger quantities and sold primarily to businesses and scientific laboratories (Freiberger and Swaine 2000:24). IBM and the dwarfs were in the first business, while companies such as DEC, Hewlett Packard, Wang, Data General, and Prime, were in the second. Though minicomputer companies were known for an aggressive, fast-paced, high-risk corporate culture that differed from the button-down world of IBM⁶, they did not essentially challenge the high priest approach to computing. As veteran computer industry journalists Paul Freiberger and Michael Swaine have observed, despite having means and motive, neither group of computer makers brought the personal computer to market.

The mainframe and minicomputer companies had the money, expertise, and unequaled opportunity to place computers in the hands of nearly everyone. It didn’t take a visionary to see a personal-sized computer that could fit on a desktop or in a briefcase or in a shirt pocket at the end of the path toward increasing miniaturization. In the late 1960s and early 1970s, the major players among mainframe and minicomputer companies seemed the most logical candidates for producing a personal computer…It was only logical, but it didn’t

⁶ For example, see Tracy Kidder’s account of Data General Corporation in The Soul of a New Machine (1981).
happen that way. Every one of the existing computer companies passed up on the chance to bring computers into the home and on top of every work desk. The next generation of computers, the microcomputer, was created entirely by individual entrepreneurs working outside the established corporations. It wasn’t that the idea of a personal computer had never occurred to the decision makers at the major computer companies. Eager engineers at some of those firms offered detailed proposals for building microcomputers and even working prototypes, but the proposals were rejected and the prototypes shelved. In some cases, work actually commenced on personal computer projects, but eventually they, too, were allowed to wither and die. The mainframe computer companies apparently thought that no market existed for low-cost, personal computers, and even if there were such a market, they figured it was the minicomputer companies who would exploit it. They were wrong. (Freiberger and Swaine 2000:25)

Minicomputer makers DEC and Hewlett Packard both had engineers leave after squelching their proposals to market computers for individuals. PC magazine pioneer David Ahl, left DEC in the mid-1970s when, after seeing his plan to market personal computers, company founder, Olsen, is reported to have “said that he could see no reason why anyone would want a home computer” (Freiberger and Swaine 2000:28).

Apple Computer co-founder Stephen Wozniak began building personal computers while employed as an engineer at Hewlett Packard. After several unsuccessful attempts to interest his employer in a microcomputer project, he asked the company if they would sign a release so he could pursue the work on his own and they did. (Segaller 1998:153)

The computer companies were not the only firms in a position to develop and market personal computers. Semi-conductor firms developed microcomputer expertise in the course of designing microprocessors and making them useful. As
general-purpose, programmable chips, microprocessors needed programs and were useless without them. In order to write those programs, chipmakers had to build what were essentially microcomputers around their chips. Such development systems also involved writing the first microcomputer programming languages and operating systems. Intel was in the forefront with such technology; many of those who started PC companies in the 1980s (Mike Markkula, Gary Kildall, Adam Osbourne, Fredrico Faggin), honed their microcomputer knowledge working at Intel in the 1970s; and the first personal computers were built around off-the-shelf Intel processors\(^7\). However, Intel, too, passed up the opportunity to get into the personal computer business. There were several reasons for this beyond the perception noted earlier that computers were industrial products that had no consumer market. First, Intel’s primary business had always been computer memory chips and it was not until the mid-1980s that microprocessors took the lead. Intel co-founder Noyce had also guided the company not to compete with its customers, to supply components, but leave the tasks of marketing and supporting whatever products might be made with them to other firms. When Hoff and his team developed their first microprocessors (the 4004 and 8008) as custom orders for corporate clients (Japanese calculator maker Busicom), Intel did not retain the right to sell the chips to other customers. When they eventually did secure the rights, as Freiberger and Swaine note, they were reluctant to release the chips to “the general engineering

\(^7\) The Scelbi and Mark-8 on the 8008, and the Altair on the 8080.
public” because they were not set up for that kind of business. Memory chips “were easy to use and were sold in volume like razor blades.” Microprocessors, however, required that customers learn how to use them, how to program them, and how to make them interface with other chips and devices. Providing that type of documentation and customer support is difficult and costly. Within Intel, Hoff had to evangelize the virtues of selling microprocessors as off-the-shelf components persistently before the company finally hired an advertising manager—Regis McKenna, who later handled Apple’s advertising—to promote their microprocessor “in a fall 1971 issue of *Electronics News*” as “a microprogrammable computer on a chip.” At about the same time, Texas Instruments released and filed a patent for what it called “a single chip computer.” With these developments microprocessors became available to individual engineers and hobbyists. By the early 1970s, those who were aware of the advances in computing technology chaffed against the strictures of time-sharing on mainframe and minicomputers and many began to experiment with building microcomputers of their own. (Freiberger and Swaine 2000:17-20)

As, Freiberger and Swaine point out in their history, *Fire in the Valley: The Making of The Personal Computer* (2000), “Intel’s marketing department had been right about the amount of customer support the microprocessors demanded,” even when the customers were engineers building their own devices (2000:20). The magnitude and type of support required to bring to market a computer that would be useful to people who were not computer experts is difficult to imagine, let alone
calculate, even in hindsight. Thus, the resistance of established firms and industries to developing the PC cannot be explained simply, as yet another example of big organizations failing to harness the technologies created within them.\(^8\) Deciding not to develop and market PCs seems entirely reasonable when one takes a moment to consider all the various kinds of cultural supports, not to mention personal investments of time and effort, required to make these machines useful, even today, let alone in the early 1970s. As historians of technology have argued, many inventions require complementary inventions before they can be usefully deployed (Rosenberg 1994:143) and all technologies require a cultural milieu to support their meaningful application (i.e. are socially constructed). In the case of the PC, a host of complementary inventions in hardware and software came together around the microprocessor, but the social and cultural infrastructure, the support, required for these developments did not, and arguably could not, come from the mainframe, minicomputer, or semiconductor companies. Instead, Freiberger and Swaine contend, it emerged through “a grassroots movement of hobbyists fully conscious that they were ushering in not just a technological revolution, but a social one as well” (2000:xx). Their book is valuable, not only for drawing attention to the many different types of support and complementary invention involved in the development of the PC, but also for its insight into the vital role of three social practices that came

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\(^8\) For example, Xerox’s famous “fumbling of the future” described inter alia in Smith and Alexander (1988) and Brown and Duguid (2000).
together around personal computing in the 1970s: (1) The publishing and reading of popular periodicals about microelectronics among engineers and hobbyists; (2) the formation of clubs and user groups, and hosting of conferences and “faires” among PC makers, users, entrepreneurs, and enthusiasts; and (3) the first store-front retailers who sold and proselytized PC products, and also provided hand-holding and local sites of dissemination and community building. Freiberger and Swaine summarize their insight into these three distinct (though overlapping and mutually reinforcing) social realms, writing:

It’s perfectly accurate to say that computer magazines, user groups, shows, and stores were crucial to the development of the personal computer. But saying this creates a misleading impression unless one explains that the magazines, shows, and stores of the early days of the personal computer revolution were very different from magazines, shows, and stores today. The essence of the difference is that, whatever the motives of the editors, organizers, or storekeepers, the magazines, shows, and stores were primarily about community building. They all helped to create a culture in which computers for individuals could be imagined, built, understood, and, almost incidentally, bought and sold. (2000:213)

One need not accept the contention that buying and selling were incidental to the evolution of the personal computer to appreciate the value of Freiberger and Swaine’s insight into importance of communities of practice in making the PC “thinkable” and “doable.” By looking briefly at the role of PC magazines, clubs and conferences, and shops, I seek to give some sense of the tight interconnection of producers and users in the evolution of PC technology. I adopt “producers/users” from Castells who employs it in his analysis of the Internet culture to “refer to those
 whose practice of the Internet feeds directly back into the technological system; while consumers/users are those recipients of applications and systems who do not interact directly with the development of the Internet, although their uses certainly have an aggregate effect on the evolution of the system” (2001:36). My proposition is that understanding the role of the three social practices that Freiberger and Swaine highlight shows how the term “producers/users” is also useful and applicable in the context of the development of the PC.

Once microprocessors became generally available, the growing interest in single-user microcomputers was both showcased and fanned in the pages of hobbyist electronics magazines that featured designs for home computers and news of the latest products and technologies. Computer enthusiasts relied on these popular periodicals to keep up with the latest developments; read tutorials and product reviews; connect to others like themselves; buy and sell; and engage in a variety of educational, economic, and social practices centered around the PC. “The magazines defined a market, spread important news, and helped bring hobbyists together” (Freiberger and Swaine 2000:217). Between 1974 and 1977 several different personal computers were marketed, most as kits that required customer assembly, in the pages of such periodicals as Popular Science, Radio-Electronics, and QST magazine, a publication of the American Radio Relay League (ARRL). Computer hobbyist magazines emerged from earlier practices of radio enthusiasts and ham operators. The first kit computer, called the Scelbi, was advertised in the March 1974
issue of *QST* and the second, the Mark-8, was featured a few months later in the July issue of *Radio Electronics*. The first commercially successful PC, the Altair, often cited as launching the PC industry, was announced in a *Popular Electronics* cover story in January 1975. The Altair was an instant hit with amateur computer enthusiasts, who placed thousands of orders during the first few months it was advertised. Suddenly, a technology that had been restricted to authority figures in academia, business, and government was in the hands of teenage hobbyists. Members of a new hacker subculture quickly made improvements to the Altair and began devising more user-friendly machines, and by the late 1970s there was a thriving market for personal computers. (Abbate 1999:137-138)

Though “Altair” is the name by which it became famous, Freiberger and Swaine report that the machine was originally dubbed the PE-8, for *Popular Electronics*, reflecting the involvement of the magazine in the development of the technology. *Popular Electronics* editors, Les Solomon and Arthur Salzberg, actively sought good designs for a personal computer about which they could run a story. Judging the initial submissions to the magazine inferior, Solomon contacted several talented engineers asking them to submit designs; traveling to meet them; and facilitating their business collaborations. He also shaped and set the pace of the Altair’s development by holding out a cover story as the prize for a prototype that met the magazine’s deadlines and requirements. One requirement: Salzberg insisted that *Popular Electronics* “had to offer its readers more than just instructions on building the device. [They] also had to offer one solid application, a practical purpose for the Altair that could be demonstrated right away” (Freiberger and Swaine 2000:46).
Though Solomon initially had no idea what that application might be, he contributed to its development by introducing Roger Melen and Harry Garland, two Stanford graduate students who had created a digital camera called the Cyclops, to Ed Roberts, whose company MITS made the Altair. As Freiberger and Swaine report:

Soon after the meeting between Melen and Roberts, Solomon wrote to Garland and Melen suggesting a television adapter for the Cyclops. They replied that it would be prohibitively expensive, and instead described their plan to link the Cyclops device to the Altair for use as a security camera. Solomon was gleeful. The security camera was the practical application that Art Salzberg had wanted. He incorporated the idea into Garland and Melen’s article on the Cyclops. (2000:49)

This is a vivid illustration of the tight interconnections linking the popular electronics periodicals (the community of practice of publishers and readers) and the producers/users of personal computers during this period. Garland and Melon went on to found Cromemco, an early and successful Silicon Valley computer company that began making video camera and supporting cards on the strength of the symbiosis between their Cyclops camera and the Altair. The Sol Terminal computer⁹, the first PC packaged with a built-in video display, and also one of the first with ROM memory that eliminated the need to enter programs by flipping switches, came out in 1977 from Processor Technology in San Francisco’s East Bay. The name Sol is a reference to Popular Electronics editor Solomon, another indication of the productive feedback relationships between the magazines, engineers, and entrepreneurs in the emerging PC industry. A variety of successful personal

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⁹ The computer featured in the film War Games (1983) a Net generation classic.
computing magazines were started in the mid-1970s, such as *Byte*, founded in 1975, which had a subscription of 50,000 by January 1977; *Kilobaud*, founded in 1977; and *Dr. Dobb’s Journal*, the first software magazine, launched in 1976 by the People's Computer Company, a Silicon Valley non-profit created to promote the personal use of computers. As PCs became big business in the 1980s, so, too, did computer publishing and every new development—networking, gaming, desktop publishing, and the Internet—has spawned a complementary development in print media around the technology, its production, use, and marketing.

As the magazines circumscribed a national community, personal computer clubs, users groups, conferences and fairs provided local and face-to-face venues for the creation and expression of that community. Within such groups and events, new computer hardware and software—and knowledge and information thereof—was demonstrated, discussed, troubleshooted, and exchanged. As Freiberger and Swaine point out, the clubs provided day-to-day support for computer hobbyists, while the fairs “were technology spectacles” where a “carnival atmosphere ignited each attendee’s enthusiasm for the growing field” and “gave hobbyists the opportunity to try out the latest novelties with their own hands.” The Altair is a milestone in PC history, not simply because a significant number were sold, but because of the newsletters, clubs, and conferences that formed around it. The Homebrew Computer Club, probably the most famous hobbyist group in PC history, started in Menlo Park.

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10 That is, in Benedict Anderson’s sense of “imagined community (1991).”
(Silicon Valley) in 1975 in the excitement surrounding the newly released Altair. Demand far outstripped expectations and early customers faced long waits for their Altairs, so those who had machines brought them to club meetings for show and tell. The first large PC conference, held in early 1976, was a single-company event hosted by MITS, makers of the Altair, in Albuquerque, New Mexico. But soon thereafter, as Freiberger and Swaine (2000) report, computer clubs and conferences were started all over the U.S. In 1976 the Amateur Computer Group of New Jersey (ACGNJ) organized the Trenton Computer Festival that “pioneered the idea of an open computer conference that wasn’t tied to a single manufacturer.” Other early PC users’ groups include the Boston Computer Society (BCS), which “eventually developed…into a 7,000-member organization with 22…committees;” and the Midwest Area Computer Club, which drew nearly 4,000 attendees to its first conference in June 1976. In April 1977, Dr. Dobb’s editor Jim Warren organized California’s first PC conference in San Francisco, which he called “the West Coast Computer Faire,” in reference to the popular Renaissance faires where attendees dressed in Elizabethan garb. With nearly 13,000 attendees, the West Coast fair was three or four times larger than any previous computer conference and became an annual Bay Area event that played a significant role in the development of the PC industry. (Freiberger and Swaine 2000:224-230)

In addition to user initiated clubs, MITS itself sought to facilitate support for the Altair through a newsletter, user conference, and a rather unusual marketing
tactic that involved driving a motor home, known as the “MITSmobile” or “Blue Goose,” around the country, to promote microcomputing and get people to start computer clubs. “One of the clubs it helped initiate was the Southern California Computer Society, which in turn published an early influential microcomputer magazine, the *SCCS Interface*” (Freiberger and Swaine 2000:59). Started with two members in September 1975, the SCCS had grown to 20,000 members just one year later (Endelso 2001). As Freiberger and Swaine explain, there were many good reasons to start a computer club at the time.

The equipment in these early days didn’t always work or work properly, and software was often unusable or nonexistent. Although buyers were typically engineering hobbyists, few of them had all the skills necessary to fully understand a microcomputer. The clubs encouraged a synergistic sharing of knowledge among the sophisticated but stymied users of the machines. Without this interaction and mutual aid, the industry would not have blossomed as it did. (Freiberger and Swaine 2000:59)

In addition to providing technical support, and creating local communities of practice, clubs and users’ groups also played an important consumer advocacy role in the fledgling days of the PC industry. Freiberger and Swaine argue that these groups “worked to protect computer buyers to an extent that was unprecedented for any American industry.”

The clubs fostered a spirit of voluntarism and adherence to consumer advocacy that was carried over into the users’ groups…Committees worked diligently against shoddiness in manufacturing and deception in advertising. The clubs were responsible for directing the efforts of the free-spirited microcomputer manufacturers of the day. Without the feedback from the clubs, the early hobbyist-oriented microcomputers
might never have developed into the useful personal computer of today. (Freiberger and Swaine 2000:225-6)

Given the great number of microcomputer makers who were themselves members of such clubs—the most well known being Apple Computer, a company started in the context of The Homebrew Computer Club—the feedback that took place through these social forms clearly went beyond consumer advocacy, blurring conventional boundaries of producers and users. Reviews in club newsletters could make or break new products and many industry entrepreneurs began by selling their wares (hardware, software, computer books) at club meetings. In the context of cultural freedom, hybrids multiply.

As interest in personal computing grew along with demand for products such as the Altair, and the many complementary devices (storage, memory boards, software) required to make it practically useful, a number of business-minded hobbyists saw an opportunity to open store-front outlets where people could try and buy computers. Though they were commercial enterprises oriented to market exchange, early computer stores served the same range of economic, educational, technical support, and social functions as PC magazines and clubs, though, of course, in different ways to different degrees. For example, Dick Heiser, who opened a computer store in West Los Angeles in 1975, quickly found that, though he was making a steady profit selling computers, most of his employees’ time “was spent explaining the technology, repairing machines, setting up systems, and reassuring customers. Hand-holding, community building, proselytizing” (Freiberger and
Swaine 2000:233). Clearly the relationships between the first computer retailers and their customers were more multi-stranded than simple market exchange of goods at prices determined by the law of supply and demand. Another early computer outlet, the Byte Shop, which opened its first store in the center of Silicon Valley (Mountain View) in December 1975, took its name from the leading hobbyist magazine (*Byte*). Founded by a Homebrew member who, when the store expanded, “insisted that Byte Shop managers in the Northern California area attend meetings of the Homebrew Club,” (Freiberger and Swaine 2000:236) the Byte Shop is an excellent example of the synergistic interconnection of the magazines, clubs, and stores in creating the cultural milieu that shaped and supported the development of personal computing in this period. In 1977 several new manufacturers released successful personal computers that established the market: Commodore International began selling the PET computer; Radio Shack came out with the TRS-80; and Apple Computer, incorporated that year, released the Apple II. Thus, 1977 marks a turning point from the hobbyist-oriented development of the PC to its development within the market-oriented context of corporate capitalism. By the 1980s large regional and national retailers had mostly supplanted the computer stores and franchises founded by hobbyist entrepreneurs in the 1970s. However, without such nodes of exchange, the PC and PC industry would not have developed as and when they did in the U.S.
The Internet: Built by ARPA, Transformed by Users

The origins of the Internet in ARPANET, a computer network set up by the Advanced Research Project Agency (ARPA) in the U.S. Department of Defense, have been examined in many popular (Hafner and Lyon 1996; Segaller, 1998) and scholarly (Naughton 1999; Abbate 1999; Castells 2001) books. Created in February 1958, in response to the launch of Sputnik, ARPA took on the “task of mobilizing research resources, particularly from the university world, toward building technological military superiority over the Soviet Union” (Castells 2001:10). ARPANET, which emerged out of the Agency’s Information Processing Technology Office (IPTO), was only a minor program, but through a confluence of technical, organizational, and political factors it became “a large-scale, long-lived, and highly visible example of the ‘success’ of packet-switching” networks (Abbate 1999:219). When it was launched in September 1969, ARPANET was a single network connecting four research centers (at UCLA; Stanford Research Institute; UCSB; and the University of Utah), but within a decade it had been transformed into a network of networks—the Internet—with protocols that made it “capable of almost indefinite expansion” (Abbate 1999:113). As Janet Abbate has argued in Inventing the Internet (2000), this development was neither inevitable, nor spontaneous.

The history of the Internet holds a number of surprises and confounds some common assumptions. The Internet is not a recent phenomenon; it represents decades of development. The U.S. military played a greater part in creating the system than many people realize, defining and promoting the Internet technology to serve its interests. Network
projects and experts outside the United States also made significant contributions to the system that are rarely recognized. Above all, the very notion of what the Internet is—its structure, its uses, and its value—has changed radically over the course of its existence. The network was not originally to be a medium for interpersonal communication; it was intended to allow scientists to overcome the difficulties of running programs on remote computers. The current commercially run, communications-oriented Internet emerged only after a long process of technical, organizational, and political restructuring. (Abbate 1999:2)

Though Abbate examines the important ways military priorities and concerns shaped the Internet, she also illustrates that “military shaping is only part of the story. The Internet approach would not have been so influential had it not served the needs and interests of a diverse networking community” (Abbate 1999:144).

Abbate focuses on the social and cultural processes through which the APRANET was transformed into the contemporary Internet. Her analysis reveals a number of ways in which the Internet, like the PC, was characterized by informal, decentralized, user-driven development carried out by “a self-selected group of experts” building tools for their own use (Abbate 1999:127). The patterns and processes of development she describes for the Internet share much in common with those of the PC. In both cases:

- Significant time and support were required to transform experimental technologies into media of everyday use.
- Voluntary social forums and communities of use/practice/interest provided much of this support. These served as sites of development, deployment, and
testing, that is, contexts within which the social construction of the
technologies took place.

• Users shaped the technology to such an extent that they are more accurately
described as “producers/users” (a term Castells proposes in his analysis of
Internet history and that I have extended to the PC above).

Having discussed these patterns in the context of the PC in the previous section, let
me give a brief illustration of them in regard to the Internet, then turn to their
relevance as cultural sources of Cyborganic.

In the early 1970s, as Abbate (1999) observes, using the ARPANET was
difficult:

the support systems were inadequate, and there was little opportunity
to interact with other users….One challenge in making the
ARPANET user friendly lay in translating activities that build
community—sharing of information, support, recreation—to the
network environment. In taking these steps for the first time, early
users of the ARPANET laid the groundwork for future virtual
communities. (1999:84)

Interpersonal communication and community building practices were as significant
in shaping the Internet as they were in shaping the PC. Abbate’s account is valuable
for its recognition that “building a sense of community among ARPA’s researchers”
was “both a means to facilitate network development and an end in itself” (1999:69).
Lawrence Roberts, ARPANET’s first program director, coordinated the project
“through a variety of informal mechanisms aimed at creating and reinforcing
common values and goals” (Abbate 1999:69). In addition to maintaining personal
contact through frequent site visits, those working on the ARPANET met in annual
retreats for Principal Investigators (PIs), or at similar meetings for graduate students.
“By bringing researchers from around the United States together to work on pressing
technical problems of mutual interest, PI retreats and graduate student meetings
helped the social networks of computer scientists to become national rather than
merely local” (Abbate 1999:69). Abbate draws attention to the efforts of
ARPANET’s managers in “[C]ultivating existing social networks, creating new
management mechanisms to promote system-wide ties, and insisting on
collaboration among groups,” arguing that these all aided in the “social and technical
integration of the system” (Abbate 1999:73). That is, building a computer network
entailed building social networks in the process. This pattern of technological
development and deployment began with the initial ARPANET project and only
intensified as the network came to reach more and more users outside those directly
involved in its creation.

Abbate’s overarching argument in her history is that “the ARPANET was not
a finished product” at the end of its first phase of development (around 1972), and
that “users were responsible for transforming [it] from an experimental system with
limited appeal to an operational service whose existence could be justified and even
celebrated” (1999:111). Those who planned the network saw it as a means to share
access to large, centralized computing systems and other resources among remote
host sites. Abbate shows how this original “computer utility” view was supiplanted
by users who turned the network to interpersonal communication. For example, ARPANET was designed to connect distant computer centers (nodes) at universities and research labs across the country. However, soon after each node was connected, users would begin to use the network for local, intra-node communication. “No one had envisioned such a use of the ARPANET,” notes Abbate (1999:93-4), and the network monitors at Bolt, Beranek and Newman (BBN), the firm contracted to build the ARPANET, were surprised when they first noticed heavy intra-node traffic, that is, great flow in segments of the network that had little flow over outgoing lines. “By 1975 almost 30 percent of ARPANET traffic was intra-node. A spontaneous innovation by users had contributed substantially to the use of the ARPANET and hence to its perceived value” (Abbate 1999:94).

Electronic mail is another example of the way users shaped development of the network. This application had not been part of the original ARPA project, but mainframe and mini-computer users had been sending intra-system mail for years and in 1971 Ray Tomlinson, a BBN programmer, modified the mail program he had written for the company’s operating system to transfer files between machines over the network. Electronic mail “quickly became the network’s most popular and influential service” and “eclipsed all other network applications in volume of traffic” (Abbate 1999:107). By 1973 it accounted for 75 percent of ARPANET traffic. Abbate underscores the importance of this user innovation, writing:
Had the ARPANET’s only value been as a tool for resource sharing, the network might be remembered today as a minor failure rather than a spectacular success. But the network’s users unexpectedly came up with a new focus for network activity: electronic mail. (Abbate 1999:106)

Electronic mail and intra-node communication are but two of the many illustrations Abbate gives to support her contention that the network’s users were directly involved in its development in its first decade of operation and that their activities contributed to the perceived success of the system (Abbate 1999:83).

**PC Culture, Network Culture, Counterculture**

Despite different origins and trajectories, by the early 1990s the cultures of personal computing and internetworking had converged and propagated in a new generation of producers/users to which the Cyborganic community I studied belonged. As noted at the outset, this generation inherited the Internet culture composed of techno-meritocratic, hacker, virtual communitarian, and entrepreneurial strains (Castells 2001: 37). While the histories of the development of Silicon Valley, the microprocessor, PC, and Internet illustrate the confluence of techno-meritocratic, hacker, and entrepreneurial cultures as a legacy of the military-university-industrial complex, little has been said yet about the communitarian legacy of the counterculture. The U.S. counterculture of the 1960s and 1970s is important for having brought technology, entrepreneurialism, sociality, and social action together in new relationships, thereby contributing to the synthesis of a number of Silicon Valley’s legacies into a new set of values and practices. The countercultural strands
are especially significant to the undertaking of this chapter because they not only connect PC and Internet culture, but also situate the resulting mix regionally in the San Francisco Bay Area. Therefore, let me briefly consider their role in the social construction of networked, personal computing before turning to explain how the various cultural legacies came together in Cyborganic in the 1990s.

The connections linking personal computing, networking, and the counterculture have been well documented in a variety of contexts. In his book *From Satori to Silicon Valley* (1986), cultural historian Theodore Roszak traces the rise of the PC industry to the countercultural values of the 1960s and 1970s. *Whole Earth Catalog* creator Stewart Brand has argued that “the counterculture’s scorn for centralized authority provided the philosophical foundations of not only the leaderless Internet but also the entire personal-computer revolution” (Brand 1995). Freiberger and Swaine (2000), Abbate (1999), and Castells (2001), whose work I have drawn on in this chapter, have all noted countercultural influences as integral to the social construction of networked, personal computing, as have a number of other less known works (e.g. Vallee 1982, 2003). More recently, two authors have focused directly on the role of the counterculture in shaping, in one case the personal computer industry (Markhoff 2005), and in the other, the new economy of the information age (Turner 2005, 2007). By looking briefly at their arguments I seek to show how the counterculture contributed to the synthesis of Internet culture and to making the Bay Area the region in which the various technical possibilities and
cultural histories of networked computing came together most productively in the last thirty years of the twentieth century.

In *What the Dormouse Said: How the 60s Counterculture Shaped the Personal Computer Industry* (2005), veteran computer culture journalist, John Markhoff, makes the case that the thriving counterculture of the Bay Area and Midpeninsula (the area between San Francisco and San Jose) played a significant role in creating “a new set of computing paradigms” in the 1970s (2005:xiv).

Structured around the life histories of researchers at two government-funded Stanford University labs—Douglas Engelbart at Stanford Research Institute (SRI) and John McCarthy at the Stanford Artificial Intelligence Laboratory (SAIL)—Markhoff’s book connects the military-university-industrial complex to the personal computer hobbyists, and situates them within the wider political and cultural context of the era.

The civil rights, psychedelic, women’s rights, ecology, and antiwar movements all contributed to the emergence of a counterculture that rejected many of America’s cherished postwar ideals. The computer technologies that we take for granted today owe their shape to this unruly period, which was defined by protest, experimentation with drugs, countercultural community, and a general sense of anarchic idealism. (Markhoff 2005:xii)

Markhoff argues that the strength of the counterculture in the region is one reason development of the personal computer industry was centered in the San Francisco
Bay Area. Altair-maker MITS and their collaborator Microsoft\textsuperscript{11} were located in New Mexico; and the possibility for personal computing existed in other places in the U.S. and abroad\textsuperscript{12}, most especially on the East Coast in the high-technology corridor of Route 128 adjacent to MIT. So why, Markhoff asks rhetorically, did the PC industry emerge where it did? The answer he provides is that the counterculture contributed to a new vision and understanding of computer technology that enabled the socially meaningful construction of new technologies, products, and media.

What separated the isolated experiments with small computers from the full-blown birth of personal computing was the West Coast realization that computing was a new medium, like books, records, movies, radios, and television. The personal computer had the ability to encompass all of the media that had come before it and had the additional benefit of appearing at a time and place where all the old rules were being questioned. Personal computers that were designed for and belonged to single individuals would emerge initially in concert with a counterculture that rejected authority and believed the human spirit would triumph over corporate technology, not be subject to it. The East Coast computing culture didn’t get it. The old computing world was hierarchical and conservative. (Markhoff 2005:xv)

Markhoff connects Engelbart’s group at SRI, one of APRANET’s original nodes, where the computer mouse, windowing, and online conferencing were pioneered, to the hacker culture of SAIL, the “Acid Tests” of Ken Kesey and “The Merry

\begin{itemize}
\item \textsuperscript{11} Started by Bill Gates and Paul Allen in 1975, Microsoft moved from Albuquerque, New Mexico, to its current home in Bellevue, Washington in January 1979.
\item \textsuperscript{12} For example, in 1973, Truong Trong Thi, a Frenchman of Vietnamese descent, came out with a commercial microcomputer system, the Micral, built around the Intel 8008 processor.
\end{itemize}
Pranksters,” the politics of the Free Speech movement, and the hippie culture of Steward Brand’s Trips Festival and Whole Earth Catalog. The Trips Festival, Markhoff writes, “gave rise to the Grateful Dead and helped create the San Francisco music scene, which in turn contributed to the creation of a national counterculture” (2005:111). SRI researchers’ use of LSD and New Age est seminars as experimental techniques to advance their work; and the active role of SAIL Director John McCarthy in the Free University founded “to further aims of the Free Speech Movement” are just a few of the many examples Markhoff presents to illustrate the transformative role of the counterculture in “the lives of many of the young men who were to pioneer the ideas underlying the personal computer” (2005:111). He traces the countercultural legacy to Xerox’s Palo Alto Research Center (PARC), legendary in the computing world as the birthplace of the Graphical User Interface (GUI), Ethernet, and laser printing; and to Apple Computer which released the first PC with a graphical user interface in 1983.

Beyond the local color that the countercultural ideology of freedom, with its practices of sex, drugs, and rock and roll, provided, it also provided the conditions within which the computer was re-imagined as a tool of individual expression and liberation. Markhoff observes that there existed a divide in the counterculture between “modern-day Luddites” whose back-to-nature attitude renounced high technology and “technophiles” who embraced it. Fred Turner describes exactly the same divide. In “Where the Counterculture Met the New Economy: The WELL and
the Origins of Virtual Community” (2005), Turner shows the connections that link 1960s counterculture to contemporary cyberculture. He situates the WELL, an influential Bay Area computer conferencing system started in 1985 by Stewart Brand and Larry Brilliant, “and the increasingly important form of technologically mediated sociability it represents,” within the wider technological, organizational, and cultural transformations of network society by tracing its legacy, through Brand’s Whole Earth Catalog, to the American counterculture of the 1960s (Turner 2005:489). “As its name suggests,” The WELL, or Whole Earth ’Lectronic Link, “took shape within a network of individuals and publications that first came together…with the publication of the Whole Earth Catalog” in 1968 (Turner 2005:487). Turner argues that, though the Catalog preceded the rise of digital computing, it can be seen as a “network forum” “within which information exchange, community building, and economic activity took place simultaneously” (Turner 2005:491). The distinction Turner draws within the counterculture between the New Left and a movement he identifies as “the New Communalists” is particularly valuable to understanding the synthesis of communitarian ideals, entrepreneurialism and information technology that came together in and with the networked personal computer.

Both the New Left and the counterculture hoped to transform the technocratic bureaucracies that, in their view, had brought Americans the cold war and the conflict in Vietnam. Both also hoped to return Americans to a more emotionally authentic and community-based way of life. The New Left, led by the Students for a Democratic
Society, pursued these goals as insurgent political movements always have: they wrote statements, formed parties, chose leaders, held news conferences. Many members of the counterculture however, stepped away from agonistic politics and sought instead to change the world by establishing new, exemplary communities from which a corrupt mainstream might draw inspiration. For this group, whom I will call the New Communalists, as for many others in the counterculture, the key to social transformation lay not in changing a political regime but in changing the consciousness of individuals. (Turner 2005:493, emphasis mine)

In the late 1960s and early 1970s, the *Whole Earth Catalog* combined “the tribal, anti-hierarchical politics of the New Communalist movement” with “the technophilia common to both the acidheads of the Trips Festival and the managers of America’s nuclear arsenal” (Turner 2005:495). In the 1980s, the WELL took that synthesis online and, Turner argues, “the virtual community that emerged…not only modeled the interactive possibilities of computer-mediated-communication but also translated a countercultural vision of the proper relationship between technology and sociability into a resource for imagining and managing life in the network economy” (2005:491).

Turner’s overarching argument is that, despite the suggestion by some new media scholars that the “peer-to-peer culture of the Internet emerged out of the New Left’s critique of American political institutions,” it “was the New Communalists of the *Whole Earth Catalog* and not the New Left for whom the building of a better society required stepping outside politics and turning instead toward information, technology, and commerce” (Turner 2005:511). Further, he argues that as the WELL built on the Catalog’s network forum for information exchange, commerce, and
community, dramatic shifts in technology and the organization of labor transformed the nature and value of these exchanges (Turner 2005:491). While the Catalog had come out twice a year, the WELL offered real-time communication twenty-four hours a day. While both united a geographically dispersed group of people, it was the WELL around which a dense, local community formed in the Bay Area. While both aggregated cultural information and member contributions in a non-hierarchical and collaborative system, the WELL “tended to push value out to its users, to distribute and increase value throughout the system” (Turner 2005:507). These differences, Turner shows, were not simply the result of the technology, but much more complexly the result of the global rise of the network form of organization that had occurred in the twenty-five years since the Catalog had first been published. As firms, industries, and nations began to downsize, adopt decentralized management structures, and reorganize “as project-oriented networks,” this led to shifts in the organization of labor, which, in turn, shaped the development of the WELL (Turner 2005:504-505).

In the late 1970s and 1980s, the professional communities of the Bay Area from which the WELL drew, and especially those associated with digital technology, witnessed an extraordinary rise in networked forms of economic organization and freelance patterns of employment. For the Bay Area’s engineers and symbolic analysts, the WELL became a place to exchange the information and build the social networks on which their future employment depended. In this new climate, notions of virtuality, community, and the socially transformative possibilities of technology associated with the counterculture became key tools with which WELL users managed their economic lives. (Turner 2005:491)
The WELL was in this sense a successful realization of the New Communalist vision of a non-hierarchical community linked through information technology and a shared ethos. However, Turner contends, “at another level the WELL marks the failure of the New Communalist movement to escape the pull of America’s technological and economic centers of gravity” because the “new relationship of information, technology, and community” it developed “would ultimately facilitate the integration of computing technology and associated work styles into the mainstream of American life” (Turner 2005:511-512). Thus, the project of pursuing social transformation in everyday life came to contribute to the very systems of power and wealth whose technocratic rationality it had purported to counter.

Markhoff and Turner both illustrate the apparent paradox that in the Bay Area countercultural values and practices were integral to the development, first of the PC industry; then of the Internet industry and, most significantly, of the social and economic integration of networked computing associated with “the new economy” (Turner, Castells 2001). Together they give a sense of the role of the hippie counterculture in the convergence of communications and computing that took place in the decades between the rise of ARPANET (early 1970s) and the rise of the World Wide Web (early 1990s). During this period, dominant understandings of the computer as a specialist technology of calculation were transformed: the computer became a communication device and spilled out from its institutional and industrial seedbed into the everyday lives of individuals. The technological visions
that such men as Vannevar Bush, Buckminster Fuller, and J.C.R. Licklider, had advanced within the context of the university-military-industrial complex, were taken up in segments of the counterculture (Turner’s New Communalists) and put into practice in new forms of techno-sociality. The hobbyists and entrepreneurs of the personal computer “faires,” Stanford and U.C. Berkeley hackers, engineers and researchers of SRI, Xerox PARC, and labs such as NASA Ames, were connected in the countercultural milieu that pervaded the San Francisco Bay Area in the 1960s and 1970s. The anti-East Coast establishment attitudes and open practices of information sharing of early Silicon Valley electronics firms, do-it-yourself ethos of radio hobbyists, and decentralized design and development of the ARPANET, all found mirrors in the counterculture. Within this matrix the cultures of personal computing and networking came together and, by the early 1990s, had converged and propagated in a new generation of producers/users that included the members of Cyborganic. This discussion of the counterculture has aimed to illustrate that convergence and situate it in the cultural history of the region because, as both Markhoff and Turner argue, the strength of the counterculture in the Bay Area was one reason the PC and Internet industries first developed there.

**Gathering Together: Internet Culture, Techno-sociality, and Community**

This account of the post-Sputnik confluence of computing, communications, and counterculture in the Bay Area serves as background for understanding Manuel Castells’s analysis of Internet culture, “the culture of the creators of the Internet.”
The Internet culture is characterized by a four-layer structure: the techno-meritocratic culture, the hacker culture, the virtual communitarian culture, and the entrepreneurial culture. Together they contribute to an ideology of freedom that is widespread in the Internet world. However, this ideology is not the founding culture because it does not interact directly with the development of the technological system: freedom has many uses. These cultural layers are hierarchically disposed: the techno-meritocratic culture becomes specified as a hacker culture by building rules and customs into networks of cooperation aimed at technological projects. The virtual communitarian culture adds a social dimension to technological sharing, by making the Internet a medium of selective social interaction and symbolic belonging. The entrepreneurial culture works on top of the hacker culture, and on the communitarian culture, to diffuse Internet practices in all domains of society by way of money-making. (Castells 2001: 37)

The techno-meritocratic culture Castells locates at the base is a legacy of the university and government funded context within which the technology emerged.

The hacker culture is a legacy of the MIT model railroad club, passed on through the Stanford Artificial Intelligence Lab (SAIL) and the use of Unix. The virtual communitarian culture is an inheritance of the counterculture epitomized by the WELL and a host of earlier endeavors, such as The People’s Computer Company, and Community Memory, “a Berkeley computerized information network” (Markhoff 2005:199) Finally, the entrepreneurial culture—a mainstay of American life even before the electric age of inventor-entrepreneurs such as Marconi, Edison, and Bell—was also a regional legacy passed down from the World War I era, through Fredrick Terman (who brought another strand of it from MIT), to the semiconductor (1960s), PC (1970s), workstation and computer networking (1980s), and Internet (1990s) industries that have distinguished the region as a hub of
extraordinary technical and economic productivity. The entire history presented herein illustrates the convergence of these legacies and gives a sense of the lived social relations that brought them together in the Internet culture that Castells describes. While Castells’s “hierarchically disposed” model of these layers is analytically valuable, I propose, in the figure below, another arrangement of the material to situate Internet culture within the context of individualization as a technological, economic, and social force.

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<td>Individual</td>
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<td>New Communalists (Turner),</td>
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**Figure 3.1: Rethinking Castells’ four-layer structure of Internet culture**

The overarching goal of this history of the development of Silicon Valley and the networked personal computer has been to emphasize the activity of producers/users and the role of social forms and forums—such as conferences, clubs, magazines, newsletters, games, and hobbies—in providing contexts and processes for the social and economic integration of the technology. Rather than viewing this integration hierarchically, I have worked to show how the linkages afforded by these social forums tend to cut across all kinds of boundaries to connect diverse domains (commercial, social, techno-scientific). This is precisely what makes them powerful as social networks. In this observation I draw on Mark Granovetter’s much cited
article “The strength of weak ties” (1973), a sociological study which found that it is not a person’s close relationships that are most useful in finding a job, but rather his or her weaker ties. This is because strong ties connect you to others with high degrees of similarity likely to know of the same opportunities you do. However, your weak ties link you to individuals who are members of other groups, and these are the ties that connect to wider networks of opportunity and information. Granovetter’s work has become a fixture of contemporary discourse on social networks and online community (e.g. Kavanaugh, et. al. 2005) largely because the Internet has turned out to be extremely effective for the maintenance of weak ties and diffuse social networks. While the cultural history presented here substantiates the productivity of such “weak tie” social forms as magazines and computer expos—through which a national community of PC enthusiasts was imagined and brought into being—my focus has been on the importance of local communities with stronger ties of practice and belonging.

Abbate has argued that “the needs and interests of a diverse networking community” shaped the Internet (1999:144); and many have cited Silicon Valley’s cross-linked and overlapping communities of technical, economic, and social practice as the key to its superior economic performance over regions with comparable technological and economic bases, such as Massachusetts Route 128, but lacking such a cultural milieu (Saxenian 1993, 1994). Similarly, Markhoff (2005), Castells (2001), and Turner (2005), all argue the importance of communities of
“selective social interaction and symbolic belonging” (Castells 2001:37) in the construction of the technologies they examine. From the radio aficionados of the early twentieth century, to the hobbyists and hackers of the PC and Internet, and the contemporary open source movement, producers/users and their communities have been crucial to shaping the vision and practices underlying “the long transformation” from telegraph to computer that began “with the first application of electricity to communication” (Marvin 1988:1). The Linux operating system that was developed in the 1990s, like the Altair in the 1970s, was important for the communities that formed around it, more than for the technology itself. Just as electronic mail transformed the Internet into a medium of interpersonal communication, “community applications” such as groupware (e.g. wikis, chat); peer-to-peer (e.g. Napster, Grokster) and social networking (e.g. Friendster, Myspace, Linked-In); blogging; and gaming (e.g. massively, multiplayer, online games, MMOGs), are transforming it yet again in the early twenty-first century.

My goal in this chapter has been to trace the role of communities of production and use in the development of the Bay Area as a hub of global Internet culture. In doing so I have worked to emphasize the symbiotic relationship between the activity of producers/users and their communities of practice in the development of the networked personal computer; and to illustrate the ways in which these technologies were shaped by the social contexts through which they developed. Implicit in the concept of community as it has figured in this account is another
symbiosis between the face-to-face (offline or onground) and computer-mediated (online). University office parks housing Terman’s “community of technical scholars,” the high volume of intra-node traffic that surprised APRANET’s network monitors, the local computer clubs and stores—all testify to the vital role of face-to-face community in the innovation and development of new technologies and industries.

**Community Online and Off: The Reconfigured Importance of Place**

Throughout this chapter I have framed the culture region of my Cyborganic fieldwork variously as “Silicon Valley”, “the Bay Area”, and “the Internet” a move that takes online and off-line together as inextricably intertwined and mutually constituted. In this I draw on: (1) the history of telecommunities as localized phenomena discussed in this chapter and (2) the growing body of scholarship, discussed in chapter 1, framing Internet research in terms of online communities and recognizing that online and offline phenomena are inextricably intertwined (e.g., Shields 1996; Jones 1995, 1997, 1998; Kitchin 1998; Wellman and Gulia 1999; Miller and Slater 2000; Hine 2000; Feenberg and Bakardjieva 2004). Turner credits Rheingold’s book about the WELL, *The Virtual Community* (1993), for bringing about a focus on community in new media scholarship: “In the wake of Rheingold’s book, researchers tended to adopt many of its core assumptions, including the notions that Americans needed new communities and that those communities could be established with technology” (Turner 2005:486, note 4). Beyond influencing
Internet research Rheingold’s notion of the virtual community shaped popular understandings at a time when the Web was bringing networked communication to new populations and into new domains of social life.

In addition to his writing, Rheingold himself was mentor to the Cyborganic project and colleague to Cyborganic members working at Hotwired and Electric Minds (a San Francisco Web start-up founded by Rheingold). Just as the Internet researchers Turner describes, Cyborganic members adopted the assumptions that contemporary life requires new communities and technology can help build and sustain them. In this sense, Cyborganic is a direct descendant of the WELL and the New Communalist vision Turner describes. Cyborganic was a self-conscious project to build a hybrid community both online via the Internet and offline via face-to-face interaction in a shared, physical place. It was an exemplary community to demonstrate the possibility of applying the computer technologies and media with which its members had grown up, and the entrepreneurial idealism of an earlier generation (e.g. the WELL and counterculture), to the business of making a living and making a life in the 1990s. However, Cyborganic and the wider geek culture of 1990s San Francisco also have other important ancestors which this cultural history has sought to recount and trace. Let me close this consideration of Cyborganic’s historical and cultural sources by briefly recapping the regional legacies that continued to bear fruit at the time of my Cyborganic fieldwork in San Francisco’s South of Market district (SOMA) from 1993 to 1999.
At the links to the WELL might suggest, the legacy of the hacker and hippie countercultures was prominent in Cyborganic and the wider community of technologists, artists, “ravers”, students, and entrepreneurs within which it formed. While the anti-establishment ethos characteristic of the group’s Internet and open source culture owes much to 1960s counterculture, it also echoes the early days of the radio and electronics industries in the Bay Area where a regional identity was developed in opposition to the East Coast technology-government (knowledge/power) establishment. Though Silicon Valley sought to emulate this establishment in reproducing the productive synergies of the university-military-industrial complex, and developing its own venture capital and financial institutions, the region simultaneously developed its identity in opposition to that establishment in several ways. The regional culture of inter-firm cooperation, expectation of high professional mobility, and entrepreneurial spin-off ventures emerged in Silicon Valley’s earliest period in direct reaction against the large, bureaucratic, institutions of the East Coast. At the time of my fieldwork, this oppositional identity was expressed, not only in relation to the East Coast, as a bastion of old, broadcast media, but also in relation to Silicon Valley which was cast as an old-school, suburban, and corporate backwater in contrast to San Francisco’s hip, urban, SOMA district. During the 1990s this area of San Francisco emerged as “a new Silicon Valley” where small, emerging businesses grew and outposts of larger enterprises were
established in proximity to “foster dynamically evolving networks of relationships, ‘a kind of fishnet organization’” (IFTF 1997b:2).

The tradition of open standards and loose regulation of patents and other intellectual property that dates from the region’s radio days also carried over to Cyborganic and SOMA in the 1990s. In the 1920s and 1930s RCA’s aggressive protection of its patent monopoly forged a culture of inter-firm cooperation in the Bay Area. In subsequent eras, AT&T’s, IBM’s, and Microsoft’s monopoly positions touched off similar responses around which the Unix, free and open source software communities coalesced, all of which are part of the larger (self-described) “geek” community that Cyborganic represents. The motto: “Information wants to be free;” was a touchstone for everyone who was part of the Bay Area Internet community in the early 1990s. Libertarians and traditional liberal democrats alike rallied around this idea, fighting back early government regulation, such as the Clipper Chip and Communications Decency Act of 1996, and creating a supportive climate for the development of new technologies and media. Cyborganic members participated in these mobilizations, but more significantly, as an exemplary community started to spread the word of the network revolution, the group itself literalized and embodied the region’s long tradition of open standards and information sharing.

Finally, from Terman’s “community of technical scholars” through Turner’s “New Communalists;” Castells’s “culture of the creators of the Internet;” Freiberger, Swaine, and Markhoff’s PC pioneers; and Abbate's inventive users, runs the activity
of producer/users and their communities of interest and practice. Though I believe this provides an accurate conceptualization of regional and technological history narrated herein, other framings of the material are obviously possible and there is no doubt that my choices reflect my own fieldwork among people for whom the production and use of new technology, media, and forms of community were a matter of everyday life. In this regard, the culture of SOMA in the 1990s has served as the *telos* of my account. However, the focus on communities of production and use is not a simple consequence of my field study. It has also served three analytic and rhetorical purposes central to this chapter: (1) to situate the region within the wider context of the capitalist political economy; (2) to highlight the productive synergies of the military-university-industrial complex; and (3) to demonstrate how complexly entwined the histories of invention and common practice have been to Silicon Valley, the personal computer, and the Internet—and to the distinct social forms and multi-layered culture within which they developed and which developed them.
Chapter Four

Cyborganic as Network of Innovation: A History of the Project

Described by *Rolling Stone* magazine as “a community of webheads who live in and around an apartment on Ramona Street on the outskirts of [San Francisco’s]… Multimedia Gulch” (Goodell 1995); and by *Wired News* as “an influential early Web community” (Boutin 2002) Cyborganic was a group of households, neighborhood cooperative, professional network, artist organization, social clique, and business start-up whose members met and interacted online and face-to-face. Cyborganic was both the project to create this multifaceted online and offline community as well as the community that came together in that project.

Started in the early 1990s in an apartment in San Francisco’s Mission Dolores neighborhood, Cyborganic grew at its height (1995-1997) to encompass a community 100-150 people,\(^1\) approximately 65 percent men, 35 percent women. Members were for the most part in their twenties, white, college educated, countercultural in taste, and practitioners, both amateur and professional, of technologically-intensive arts. Almost all were born and raised in the United States,

\(^1\) It depends on what counts as membership. This range is estimated from: (a) total cumulative number of user accounts on the Cyborganic server (143, some people had multiple accounts, some accounts did not map to people); (b) maximum number of people with homepages on the Cyborganic website at one time (86); and (c) the maximum number of simultaneous mailing list subscribers (152).
though most were not from the Bay Area, but had moved there for college, graduate studies, or to pursue careers.

Cyborganic's central premise was that online and face-to-face interaction are mutually sustaining and can be used together to build uniquely robust communities. The project was to use computer-mediated communication, not to transcend geographical place, but to build a local, networked community. Those who led the project wanted to create such a community in their own lives. But they also wanted to demonstrate the possibilities of using technology in this way out of a sense that others, too, would benefit from Cyborganic’s example and its project to spread the gospel of networked, local community. The project was pursued as a business start-up and though that enterprise provided the impetus and framework (both technical and imaginative) for the community, the two were symbiotic aspects of a whole that can only be understood holistically and within the context of the Web industry that emerged in San Francisco in the 1990s.

Founded and led by Jonathan Steuer, Cyborganic was a project to create an Internet business based on hosting local communities on the model of the WELL, and in the spirit of the “exemplary communities” of Turner’s New Communalists. Steuer’s plan was to demonstrate the value of combining face-to-face and online sociality by starting the type of community he envisioned among his own friends, in his own neighborhood. The idea was to bootstrap the project with personal resources and volunteers to create an example that could be used to raise venture capital for the business. Charismatic and ardent about the social possibilities of networked media,
Steuer initiated the project with his own resources; and recruited collaborators, who also contributed on a voluntary basis, to the cause of building this local community. Their efforts were successful and the community that came together in Cyborganic’s face-to-face and online venues took on a life of its own, symbiotic with but distinct from, the project to launch the business. This community became a hub of San Francisco’s burgeoning Web industry in the mid-1990s. Several Cyorganics, including Steuer, played leading roles in the development of Web publishing (Reid, 1997), and group members served as the creative and technical workforce that launched many early Web ventures.

Writing for *Wired News*, Paul Boutin highlighted Cyorganic’s role as a Web industry hub in an article about the group’s weekly Thursday Night Dinners (TND). He noted that dinner regulars included “a bevy of early Web luminaries,” such as Apache co-developer Brian Behlendorf and proto-blogger Justin Hall—“two who helped shift the Web from a collection of academic papers to a personal publishing medium and affordable e-commerce tool” (Boutin 2002). In the mid-1990s Cyorganic’s TND “was the place to be for San Francisco's up-and-coming Web workers,” as Boutin describes.

TND’s weekly self-catered theme parties, which ran from 1994 to 1997, were more potluck than potluck compared to the high-rolling dot-com events that drowned them out in the late 1990s. Yet the average Thursday Night Dinner boasted a higher density of people like Hall and Behlendorf who, rather than counting stock options, were spending long hours creating everything from serial online soaps to the first online ads to open-source software. (Boutin 2002)
In contrasting Cyborganic’s “true believers” with “the frauds and wannabe’s [who] infested San Francisco with dreams of dot-com riches,” Boutin captures the group’s significance, not as a business, but as a milieu of creative and communitarian innovation. Understanding Cyborganic and its wider relevance requires recognizing the inseparability, not only of its online and offline dimensions, but of its entrepreneurial and communitarian ones as well. Moreover, it requires understanding the role Cyborganic and its members played in the network of businesses and communities that were central to the development of Web publishing in San Francisco in the 1990s. The history presented in this chapter works to show these connections as it chronicles Cyborganic’s evolution within this milieu.

**Preamble to the History**

This history traces the Cyborganic project from its conception in the early 1990s through the closure of the business enterprise in 1997. Though it describes Cyborganic’s growth as a local community, and long gestation as a business start-up, it is really the history of the network that came together through and around Cyborganic. For this reason, I call it a network history. As such, it is an account of the individuals and collaborations linking firms, projects, and communities in San Francisco’s Web industry in the mid-1990s. Figure 4.1 below (and Appendix D), diagrams this network, highlighting Cyborganic’s central role, and noting key people, events, and connections described in the account.
Figure 4.1: Cyborganic network of firms, projects, & communities (1993-1999)

This history includes many proper nouns: names of interconnected people, projects, and companies. Figure 4.1 above and Table 4.1 below are intended to orient the reader to the entities involved and the key individuals through whom they are linked. Though a few lines of connection in Figure 4.1 represent Internet service, all the lines represent flows of people, ideas, and collaborative action. As is the case for most histories, most of these people will go unnamed, but Table 4.1 below identifies those who are central to the narrative connecting the communities, firms, and projects in this network history.
### Table 4.1 Names and roles of people listed in Figure 4.1

<table>
<thead>
<tr>
<th>Name</th>
<th>Role and Roles</th>
</tr>
</thead>
</table>
| Jonathan Steuer    | Cyborganic Founder  
                    | Online Tsar for *Wired* magazine  
                    | *Hotwired* and CNET online launch team lead |
| Jonathan Nelson    | Co-founder, Organic Online, a Web production company |
| Brian Behlendorf   | Co-developer of the Apache Web Server  
                    | Co-founder, Organic Online  
                    | Leader in the open source software movement |
| Ann Hess           | Hess, Donaldson, and McGillis—together with Steuer and Cool (the author)—were the principals in the Cyborganic business start-up that incorporated in 1995. |
| Caleb Donaldson    | Tom Jennings     |
| Tricia McGillis    | Howard Rheingold |

As noted in chapter 2, the group history elicited from Cyborganic members in the course of our 1996 IFTF study was made into a graphical timeline. This timeline, reproduced in Figure 4.2 below (and Appendix C), has guided my account of Cyborganic’s evolution. It provides, at a glance, a sense of the places, themes, and sequence of events described in the history. The milestone events it depicts are listed in Table 4.2 below.
Figure 4.2: Cyborganic history and evolution (1991-1996)
Illustration courtesy of The Institute for the Future
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 1990</td>
<td>CHANCE prospectus, business plan for combined technology emporium, recording studio, and art/performance space</td>
</tr>
<tr>
<td>Sept. 1991</td>
<td>67 Ramona Avenue becomes the first Cyborganic outpost on the street when Steuer, Clerici, and Eccles move in.</td>
</tr>
<tr>
<td>Mar. 1993</td>
<td>65 Ramona Avenue becomes Cyborganic territory when roommates Bahcall and Seaman move in downstairs.</td>
</tr>
<tr>
<td>Oct. 1993</td>
<td><em>Cyborganic.com</em> domain registered and hosted on the server at 65/67 Ramona. The Cyborganic Café project debuts at Anon Salon</td>
</tr>
<tr>
<td>Fall 1993</td>
<td>Steuer goes to work at <em>Wired</em> magazine. Ramona residents start using e-mail to coordinate group dinners and household business</td>
</tr>
<tr>
<td>Jan. 1994</td>
<td>59 Ramona is incorporated into Cyborganic when Potter, Cheney, and Cool (the author) move in next door to 65/67.</td>
</tr>
<tr>
<td>Feb. 1994</td>
<td>First Cyborganic Summit of volunteers to organize the project. Cyborganic Manifesto published online</td>
</tr>
<tr>
<td>Apr. 1994</td>
<td>Ramona Empire “You Will Be Assimilated” Party</td>
</tr>
<tr>
<td>Aug. 1994</td>
<td>80-82 Ramona Avenue added to Ramona Empire as Hess, Francis, and Drukman move in across the street.</td>
</tr>
<tr>
<td>Fall 1994</td>
<td>Thursday Night Dinners (TND) become a regular weekly event.</td>
</tr>
<tr>
<td>Apr. 1995</td>
<td>Cyborganic Gardens 1.0, Cyborganic’s first website, goes online. Space bar chat goes online.</td>
</tr>
<tr>
<td>Aug. 1995</td>
<td>1834-1836 15th Street (on corner on Ramona) added as Cyborganic community members move in and join Ramona LAN.</td>
</tr>
<tr>
<td>Aug. 1995</td>
<td>Cyborganic road trip to SIGGRAPH and Disneyland</td>
</tr>
<tr>
<td>Oct. 1995</td>
<td>Cyborganic Gardens 2.0, newly designed and expanded website launches. First Cyborganic business plan presented to an investor.</td>
</tr>
<tr>
<td>Nov. 1995</td>
<td>First investment money. <em>Rolling Stone</em> feature article about Cyborganic published</td>
</tr>
<tr>
<td>Sept. 1996</td>
<td>654 Mission Street: Cyborganic business offices move downtown to San Francisco’s South of Market (SOMA) area.</td>
</tr>
<tr>
<td>Fall 1996</td>
<td><em>Geek Cereal</em> launches</td>
</tr>
</tbody>
</table>
A Network History of the Cyborganic Project

The concept for Cyborganic can be traced back to November 1990 when Jonathan Steuer, Atau Tanaka, and Jonathan Nelson put together a business plan for CHANCE: Center for High Technology, Arts, and Cultural Exchange. The plan was to incorporate two for-profit businesses, a nightclub and a recording studio, alongside a non-profit gallery and performance space for technology-intensive arts. Though the business plan was never funded, it serves as a milestone because all the key aspects of Cyborganic's concept (except the Internet) were already present. These include the centrality of a physical location for informal sociality, the combination of art and technology, profit and non-profit, the synergy of enterprises, and connection to the local San Francisco arts community.

Steuer was a doctoral student in Communication at Stanford University at the time and it was in this context that he took a seminar from Terry Winograd, who has done important work in collaborative computing and human computer interaction. This seminar in the fall of 1991 marks the next milestone in the Cyborganic story because it was there that Steuer met Abbe Don, an interface designer then working at Apple's Advanced Technology Group (ATG). Don introduced Steuer to her colleagues at Apple, including Tim Oren, a Silicon Valley veteran who began his career at Digital Research and left the company with its founder, Gary Kildall, to start KnowledgeSet. Oren was then managing “Apple's first ventures into multimedia and led R&D on hypertext and full text databases, multimedia agents, collaborative
systems, and online communities.” Through Don, Steuer also met Howard Rheingold and other members of the WELL, the group profiled in Rheingold’s book *The Virtual Community* (1993), which served as one inspiration for Cyborganic’s combination of commercial and communal practices. In the summer of 1992 Steuer interned at Apple ATG and was assigned the task of surveying and reporting on Internet services and online communities. He returned to Stanford that fall with thoughts of integrating ideas from the CHANCE business prospectus with the new possibilities of the Internet. During the school year (1992-93) Steuer organized a series of events called “Net Jams” at the Stanford Journalism Lab, where

> a group of people would gather in the same physical location. Using
> the Internet, the group would then reach out to various other places. I
> [Steuer] invited a group of friends, some with much net experience
> and some with none at all, to meet in the Journalism Lab at Stanford
> one Saturday afternoon in October. (Steuer 1993)

This combination of face-to-face and online interaction, of sociality and technology, of experienced users with neophytes, and organization through “groups of friends,” were important aspects of Cyborganic prefigured in the Net Jams.

The Internet was not only an academic focus for Steuer, but more and more a feature of social and cultural life. In the early 1990s San Francisco was home to a vibrant and growing techno-culture. In addition to a thriving “rave scene” (all-night techno-music parties), the City regularly hosted computer-inspired cultural events such as Cyberthon (sponsored by the *Whole Earth Review*), the Digital Be-In, and

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the Hackers’ Conference. At regular community venues, such as the monthly Anon Salons and Joe’s Digital Diner, new media artists showcased their work at party-style events with music and socializing. In September 1991 Steuer moved into the apartment on Ramona Avenue around which Cyborganic grew, with software engineers Gianmaria Clerici and Chris Eccles.

In March 1992 Brian Behlendorf, a UC Berkeley freshman, set up a mailing list called SFRaves to make it easier to find out about local rave parties. Within a week, SFRaves had 80 subscribers, within a year, 500. The roommates on Ramona were among the first to join. As it formed this subculture within the broader rave scene came to be known as “Netravers.” In the spring of 1993, Eccles moved out of the apartment on Ramona Avenue and Anne Francis moved in. Together, Steuer, Clerici, and Francis formed a very close-knit household, and their apartment became a meeting point where “Netravers” ate dinner and gathered before heading out to parties. In early 1993, Nelson, one of the partners in CHANCE, introduced Steuer to Will Kreth who worked at *Wired*, a new magazine that was just starting up in San Francisco’s South of Market district (SOMA). That summer Steuer convinced *Wired* founders, Louis Rosetto and Jane Metcalf, to hire him to wire *Wired*. Literally, his first task was to get the magazine’s connection to their Internet service provider, the Little Garden (TLG), working reliably and integrated with the company’s electronic mail software (QuickMail). *Wired* employees soon became regulars at the gatherings on Ramona Avenue. The first version of the Mosaic Web browser had been released in the spring of 1993 and by the end of the year interest and activity around the
Internet was intense in San Francisco. In the wake of more than a decade of urban redevelopment, SOMA was fast transforming into a hub of the emerging Web publishing and advertising industries. In this milieu Steuer once again began talking about “doing a start-up” like CHANCE but built around the Internet. He had just been named “Online Tsar” at Wired and was leading the effort to take the publication online. Though still tied to his “day job” and writing his dissertation, Steuer began talking to friends about collaborating on Cyborganic.

Work on the Cyborganic business got under way in autumn of 1993 after I accepted Steuer’s invitation to join the project and moved to the Bay Area. In October, Steuer turned the downstairs kitchen at 65 Ramona into a server room, registered the Cyborganic.com domain, and set it up as Cyborganic’s first Internet server on ramona.cyborganic.com, a 386 computer running BSD/OS (a Unix-like operating system for personal computers). He added a phone line, then used a modem to dial-in to the Little Garden (TLG) and stayed connected continuously. “Pac Bell never said you couldn't do that,” he quipped in a 2004 interview. At the same time, I began writing the first proposal for the business venture and produced a brochure intended as an overview for potential investors and collaborators alike. Printed on iridescent green, legal-size paper and crowded with text on both sides, this brochure (Appendix E) described The Cyborganic Café as:

> a physical café and virtual café all in one [that]…combines the features of a neighborhood coffee house with those of an online service, community newspaper, and multimedia service center. (Cyborganic brochure, October 29, 1993)
On October 29, a prototype of the Cyborganic Café debuted at the Halloween Anon Salon. This prototype consisted of a few terminals on tables where Steuer and I demonstrated the wonders of applications such as Gopher, Veronica, and Mosaic, and explained the possibilities of the Internet to anyone who stopped by. Later that night, at Terrence McKenna's show at San Francisco's Great American Music Hall, Steuer invited Behlendorf, who started SFRaves, to join him at Wired. Behlendorf, who has since become a leader in the open-source software movement through his work on the Apache server, was nineteen when he joined Steuer in building Wired’s online infrastructure.

During this period, Steuer, Nelson, Behlendorf, and I met at the Ramona apartment to talk about the Cyborganic project. However, as business interest in the Internet continued to grow, Nelson’s interest shifted from communal opportunities to commercial ones. He split from Cyborganic in mid-1994 to start a Web production and advertising firm, Organic Online, with his younger brother, Mathew Nelson; Cliff Skolnick; Leslie Rossman; and Behlendorf as partners. Nelson became Organic’s CEO; Behlendorf, who to continued to work at Wired, became CTO; and Skolnick, who also kept his day job (at Sun Microsystems), became the company’s CIO. Dan Haig, Organic’s first employee, and Halley Silver—who together comprised Organic’s Web production staff for the firm’s first year—were also members of the Cyborganic community. Haig, along with his brother John, had

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3 CEO, Chief Executive Officer; CTO, Chief Technology Officer; CIO, Chief Information Officer.
grown up with Steuer and the Nelson brothers in Milwaukee, Wisconsin, and all had
gone to the same high school. Both Haigs started working for Organic in its start-up
phase. Like Cyborganic, Organic was a bootstrap venture. The Organic.com domain
was initially hosted on Cyborganic's servers; and the firm operated out of the elder
Nelson’s San Francisco apartment for almost a year before moving into offices in the
same building that housed Wired and Hotwired on South Park in SOMA.

The firm’s connections to Hotwired’s sales staff served as its initial conduit
to the emerging market for Web advertising and Organic Online built many of the
first corporate websites for clients such as Reebok, DaimlerChrysler, Yahoo!,
Blockbuster, and Fannie Mae. As the Internet industry grew, so too did Organic, and
the company went public in 1999 with backing from Omnicom Group, a giant
holding company that also invested in Razorfish and other interactive media
agencies. 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. But these events were not quite yet imaginable in the early days of 1994
when Nelson and Behlendorf split off from the Cyborganic project to pursue their
own start-up in Organic Online.

In February 1994, I moved into the apartment next to Steuer on Ramona
Avenue and helped him organize the first Cyborganic Summit where 33 people came
together to brainstorm on the project. In response to Steuer’s request for a mission
statement to put online for the event, I drafted the Cyborganic Manifesto, a
meditation on technology and human ends that can be summarized: “Technology is our tool, not our master.” On April 16, 1994, the housemates of the Ramona Empire hosted the first multi-house event, a rave-style party called “You Will Be Assimilated”. Billed as “A happening in three dimensions,” the invitation instructed guests to “Telnet to cyborganic.com & login as rsvp.” This was an important milestone in the history of Cyborganic and marked the group’s debut to the wider community of computer geeks, ravers, artists, and entrepreneurs coming together in San Francisco at the time.

In the spring of 1994 I also began hosting Thursday Night Dinners (TNDs), irregularly until October and weekly thereafter. TND was a face-to-face gathering that became the backbone of the Cyborganic project. Over the next three years these dinners and the Cyborganic mailing lists were central to the community's formation. TND grew to be a pot-luck dinner hosted at Cyborganic’s offices, supplied and staffed each week by community volunteers: “Guest Chefs,” who selected a theme and provided main dishes; a “Swab Master,” who led the clean-up, and a “Guest DJ,” who handled the music. Groups of co-workers from local Internet firms would often volunteer together to put on a TND. These dinners became a hub of the industry growing around the popularization and commercialization of the World Wide Web.

Shortly after the launch of Hotwired in October 1994, Steuer left to consult for CNET, a media venture founded in San Francisco the previous year by Halsey Minor and Shelby Bonnie. Their vision for CNET was to combine television and online programming synergistically. Amy Critchett, a co-worker of Steuer’s at
Wired, had interviewed at CNET and though the task of advising them on their Internet plans was not for her, she recommended Steuer for the job. Steuer helped CNET implement an Internet strategy that positioned them to: (1) create several commercially successful Web portals in rapid succession (Shareware.com, Download.com, and Movies.com); and (2) to commercialize the publishing software created to build these websites. Steuer hired Michael Gold from the Hotwired launch team to design a publishing system for CNET. A team of software developers from Bellcore was brought in to build it, with Gold and Steuer acting as liaisons between them and the CNET staff who would use the software in their daily work. The publishing system Gold designed eventually became Vignette StoryServer.

In 1996, CNET commercialized this software that made it possible for people without technical knowledge to publish Web pages. They partnered with Texas-based Vignette Corporation, turning the software over to them, along with $500,000 in return for a 33 percent stake in the company. An early entrant in to the Web content management market, Vignette StoryServer was instrumental in helping, first publishing companies (e.g. Chicago Tribune and CBS Sportsline), then corporations of all kinds, integrate their core business around new network technologies. Steuer also hired the Web production team that launched the CNET website, bringing Caleb Donaldson from Hotwired and Dan Haig from Organic Online. Steuer and Gold, with help from Donaldson, designed CNET's posting area, developed the site architecture, hired and managed the ten person Web production staff through the site relaunch in the spring of 1995. Everyone on the online production team was a
member of the Cyborganic community (e.g. Gold, Donaldson, Francis, M. Mara-Ann, Charlie Fulton).

Throughout the period Steuer worked at CNET, both the Cyborganic project and community on which it drew continued to grow. In August the Ramona neighborhood expanded to encompass five apartments (12 people, 15 computers) when Francis, who had lived with Steuer at 65 Ramona, moved in to an apartment across the street with her fiancé, Jon Drukman; and Ann Hess moved in to the apartment below them. Drukman, who contributed for more than a decade as one of Cyborganic’s volunteer systems administrators, met Francis and Steuer through the SFRaves community. Hess, who had been working at San Francisco's Exploratorium science museum, met Steuer when she came to work at Wired as assistant to the magazine’s co-founder, Jane Metcalf. Cyborganic's first business plan was drafted in 1994 and about half the people who had been part of the first Cyborganic summit continued to work in small groups implementing various aspects of the plan.

In 1995 Steuer started taking website production jobs for Cyborganic alongside his part-time consulting work at CNET to earn revenue for the business. Hess handled production and client contact for these jobs on a contract basis. In March, I joined the business, which was then a sole proprietorship owned by Steuer, as a full-time contractor. My job was to set-up administrative and member support systems, while continuing to host TND, which was now brought explicitly into the business venture from the community side of the project. Steuer worked for publishing and media companies, channeling his consulting fees into funding the
fledgling start-up and his energies into recruiting a production team to build Cyborganic’s Web presence.

Meanwhile, Behlendorf was working to build the network infrastructure and systems for both Hotwired and Organic Online, the company he had partnered in with Nelson. When 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 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, with seven others, he formed the original Apache Group, which he hosted on his own server on bandwidth donated by Hotwired.

The PC, a Pentium 90, went under his desk at Wired, was hooked up to their LAN and was given a public IP address. [Behlendorf] chose a domain name for it in honor one of his favorite techno tracks at the time: “hyperreal” by the shamen…the machine name, taz, was a reference to Hakim Bey’s entry on every cyberpunk’s essential reading list: “T.A.Z. - the Temporary Autonomous Zone, Ontological Anarchy, Poetic Terrorism. (Brown, 2000)

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Behlendorf and Skolnick 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 formed, the Apache server passed NCSA’s HTTPD to become the most used server on the Internet, a position it retains today.\(^5\)

The period during which Apache grew to be the most highly used Web server was one of tremendous growth and activity around the Internet in general and in San Francisco’s SOMA district in particular. By 1995 the Internet and dot-com boom were mainstream, international news, though e-mail, Web hosting, and home connectivity were not yet the consumer commodities they are today. Steuer decided it was a good time to make another push to raise venture capital for his plan for a community-based Internet business. He felt the first step was to redesign Cyborganic’s Web presence and, as part of this effort, recruited Donaldson and Tricia McGillis to work on the Cyborganic start-up. One of the original designers at Wired, McGillis was working as Art Director for Berkeley-based Yoga Journal. Donaldson, who had been on the Hotwired launch team, was then working at CNET.

\(^5\) According to a Netcraft survey of Web server software on Internet connected computers, in July 2008 Apache had a 49.49 percent market share of active sites against 35.57 percent running Microsoft, and 5.7 percent running Google server products. (Netcraft, http://news.netcraft.com/archives/web_server_survey.html, accessed September 1, 2008.)
McGillis and Donaldson, who are now married, both moved to the Bay Area around 1991 after graduating from Yale. When Steuer started talking to them about joining the Cyborganic start-up in early 1995, they welcomed the opportunity to work on a project together and with friends, as they were also members of the “Netrave” community. Though both remained at their day jobs, the two worked together with Hess to build the company’s first website. In April 1995 Cyborganic Gardens 1.0 went online with 34 member homepages, including those of Howard Rheingold and proto-blogger Justin Hall. “Almost no one involved in the project was paid, nor was anyone making any money from it. Through the summer of 1995, the Cyborganic Café project gained momentum and by the end of the year it had its first investor” (IFTF 1997a:32).

The second half of 1995 was the most active period in the history of Cyborganic. In the summer, McGillis and Donaldson left their other jobs to work full-time on the project of turning Cyborganic into an Internet start-up. With the help of Wilson, Sonsini, Goodrich, and Rosati—a Silicon Valley law firm that had just begun offering services on credit to Internet start-up companies—the business was incorporated as The Cyborganic Corporation. Steuer, Hess, McGillis, Donaldson, and I became principals in the firm, the four of us reporting to Steuer in a flat, hierarchical structure. The team of Hess (Production Director), McGillis (Design Director) and Donaldson (Editorial Director) got to work re-designing and enhancing the Cyborganic Gardens website. Steuer and I continued shopping the Cyborganic business plan to prospective investors, finally securing an initial round of financing.
in October 1995. That month, the redesigned Cyborganic Gardens website went online. The community and media attention Cyborganic received began to grow more rapidly after Rolling Stone published a feature article on the group, titled “Webheads on Ramona Street,” in November 1995. In the wake this coverage, attendance at the weekly dinners (TND) swelled to well over a hundred, straining the capacity of the apartments that housed Cyborganic’s offices.

As Cyborganic entered this period that turned out to be the height of its success, it began to change and tensions between its communal and corporate dimensions became more pronounced. With Cyborganic’s incorporation, relationships that had been informal and voluntary were formalized in job descriptions, reporting structures, and legal contracts. While this was a practical necessity, it also involved ceding to the Corporation claims on intellectual property created in a community context on a volunteer basis, signing non-disclosure agreements, and apportioning stock options. I felt a growing conflict between my goals as an Internet community researcher and the goals of Cyborganic’s business project and left the company in January 1996, though I remained a member of the community.

In early 1996, The Cyborganic Corporation began a concerted effort to sign new people up as paying members—basic membership of $10 per month included website hosting and two POP e-mail addresses. In addition, there was a move to convert free accounts of community members who were not actively contributing to
the project to a fee basis. This effort was documented in TND Dispatches and “The
Cyborganic Propaganda,” as the leaflets distributed at TND were called.

If you enjoy the whole Thursday Night Dinner/Cyborganic scene, why would you have your home page anywhere else?” (The Cyborganic Propaganda, March 23, 1996)

Join Cyborganic! If you haven’t already now’s the time to move your email and home page to the Gardens. It’ll cost most people just ten bucks a month. (The Cyborganic Propaganda, May 9, 1996)

The campaign was part of the effort to attract investors by demonstrating that Cyborganic had revenues and paying customers. Money was tight and the principals in the company were not drawing salary, though other employees were being paid. To generate revenue, Cyborganic took on contract work and added to its staff by hiring from the community.

Cyborganic welcomes yet another full-time worker to the fold. Jon Drukman had been handling our UNIX servers for ages now, and we finally coaxed him out of his “real” job at Opcode. A full-time geek on staff means we’re busy building more member tools for the Gardens. Stay tuned. And we’re looking for a few more humans, notably one with ad sales experience on the Internet, and one to do contract SQL programming. (The Cyborganic Propaganda, April 18, 1996)

These announcements show the growth and formalization of Cyborganic as a commercial enterprise during this phase of its development.

As Cyborganic’s staff took on commercial projects to generate revenue, Steuer and a series of collaborators revised the business plan and continued to hunt for investors. In July 1996, “Cyborganic’s Web-mercenary squad” was engaged to work as “Online Masterminds” on the first annual Global Internet Gathering (The
GIG). Billed as “world’s largest music festival,” The GIG incorporated smaller festivals, such as The Macintosh New York Music Festival and the Montreaux Jazz Festival. It featured live performances broadcast over the Web, as well as “interactive and dynamic elements ranging from chat and bulletin boards to agent software” (Cyborganic brochure, 1996). In addition to developing the graphics and interface for the website, Cyborganic designed and implemented the network architecture to connect more than 40 venues and support the website during the Festival. In September, the group launched two Internet publishing projects, *Geek Cereal* and *The Couch*, Web soap operas consisting of the online diary entries of “real geeks.” These were part of the plan to combine the bottom-up publishing model of the Web with an advertising revenue model.

After closing a new round of investment late in the summer of 1996, Cyborganic moved its offices, along with TNDs, from the house on Ramona to a large, commercial, office space in the heart of San Francisco’s SOMA district (654 Mission Street). The location included: a top-floor, where the Cyborganic offices were set up in the unpartitioned, sparsely furnished style typical of technology start-ups; a ground level, mostly empty, which was to become the Cyborganic Café; and a unimproved brick basement. TNDs resumed at this new location and became something of a media event, colorful fodder for growing mainstream interest in the Internet and Internet geeks.

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6Geek Cereal is now archived at Rocky Mullin’s website, [http://sharon.net/gc/](http://sharon.net/gc/), accessed August 9, 2008
Though the downtown location lent credibility to Cyborganic’s business project and visibility to the community, it had downsides. The new place lacked the homey feel of the apartments on Ramona where, as one informant put it, “the grub and drinks were good (and usually home-cooked) and creative.” There was no kitchen and this changed the character of TND as packaged and take-out foods replaced the potluck dinners that had been cooked communally onsite. In addition, the new space brought other changes, as these interview excerpts indicate:

the new space is.... interesting, but it’s....very different and I kind of liked the sort of small spaces, homeyness of where it was before…for one thing, I’m not even sure whether you’re allowed to use the computers in the attic, it’s, it’s so segregated from the bottom that I have the impression that you’re not supposed to go up there and use them… And again the breaking up into smaller rooms made groups smaller, whereas like this time, there was half the room with people who all knew each other all sitting on the floor, well, it’s kinda exclusive in a sense, if you don't know anybody who’s sitting there, you can’t just go over and sit down. At least I didn’t feel I could. (Laurie Hunt [pseudonym], interviewed October 7, 1996)

TND can get really cliquey and it’s difficult sometimes for new people to feel like they’re a part of the community…I think it’s partially due to the schmoozing that does go on, people are a little leery, sometimes people are a little leery of welcoming people with open arms… There’s a small level of distrust like people want to get to know people a little bit first to make sure they’re not just some fucking guy who’s trying to get connections to get in to whatever place…that kind of stuff. (Kat Kovacs, interviewed October 8, 1996)

Though attendance at TNDs had grown, community participation in volunteering to cook and clean at the weekly dinners waned significantly after the move and in conjunction with the shift to fee-based membership. Dinners were only held

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7 Susie Kameny, e-mail survey response, October 5, 2005.
regularly for a month at the new location, and irregularly thereafter, the last TND dispatch in the archive is dated October 31, 1996.

In addition to new offices, Cyborganic’s new round of funding made it possible to pay people, both principals and employees, who had been working without pay for months in exchange for stock options, in some cases. However, the investment was not enough to realize Cyborganic’s plans to open a physical counterpart to its online venues and, by the time the funding round closed, the money had nearly run out. Moreover, Cyborganic’s principals did not share a vision of how to proceed and McGillis and Hess took the occasion of the funding, and payment of salaries in arrears, to make their exit from the business, but remained members of the community. This left only two (Steuer and Donaldson) of the five partners with which Cyborganic had incorporated approximately 16 months earlier and marks the beginning of Cyborganic’s demise.

For about a year Steuer continued to seek investors for the business, while Donaldson led on the editorial side as Gardener-in-chief of Cyborganic’s website and Executive Producer of *Geek Cereal*. After a year in which a few investors showed serious interest, but none actually produced a check, the cash flow required to operate at the new location proved unsustainable. In October 1997, Steuer and Donaldson parted company after talks about “letting the Geeks take over their Cereal…fizzled out.”

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Corporation declared bankruptcy. Over the next six months, user accounts and content were migrated smoothly off the company’s servers and most members found new homes in communities similar to Cyborganic in spirit and structure, but without the formal business project and dedicated physical space. The Ramona neighborhood continued to be occupied by community members who shared connectivity, technical infrastructure, and administrative labor through the LAN. These off shoots and legacies will be discussed in the next chapter as I have chosen to end this historical account in the winter of 1997 with the cessation of weekly dinners, the close of the business, and the migration of user accounts that followed.

**Themes of the Network History**

A number of themes, or arguments, pertinent to the objectives of this dissertation come across in this history. Three I see as most significant are: Cyborganic’s strong connections to an earlier generation of Bay Area telecommunities, such as the WELL; its role as a milieu and network of innovation; and the tensions between the group’s entrepreneurial and communitarian imaginaries. Analysis in this chapter will focus on the first two of these, leaving the third for subsequent chapters.

The first theme I wish to highlight from this history is Cyborganic’s situatedness in the regional and cultural history presented in chapter 3. Stated as argument, my contention is that despite the innovations it embodied, Cyborganic emerged in a specific time and place deeply tied to wider structural and cultural
forces in U.S. and global history. These ties are evident in the network history and demonstrate quite clearly the four cultural layers Castells has identified as constituent of Internet culture: the techno-meritocratic, hacker, virtual communitarian, and entrepreneurial (2001:37).

The second theme I wish to highlight is the milieu of innovation argument, namely, that Cyborganic is exemplary of the regional and cultural advantage of “technopoles” (Castells and Hall 1994:8), and was a precursor to many contemporary phenomena of online social networking. I draw on this network history, and supplementary ethnographic material, to demonstrate Cyborganic’s productive capacities and specific innovations. In short, I address the question of how Cyborganic was innovative, how the group and its members contributed to the development of Web publishing and the rise of San Francisco’s SOMA district as an Internet industry hub in the 1990s. Building on the argument of the first theme, I contend that Cyborganic drew on all strands of the four-layer Internet culture to create new productive relationships that were integral to those broader developments.

**Theme 1: Cyborganic’s Situatedness in Bay Area Internet Culture**

Cyborganic’s strong connections to an earlier generation of Bay Area telecommunities—and the techno-meritocratic, hacker, virtual communitarian, and entrepreneurial cultures of the creators of the Internet—can be seen at several points in the network history. Most immediate are the links between Cyborganic and the WELL, the Bay Area online community at the center of Rheingold’s *The Virtual*
Community (1994) and Turner’s argument about the New Communalists (2005, 2006). As discussed in chapter 3, Turner analyzes the WELL as an exemplary community that translated the counter-cultural vision of the Whole Earth Catalog to the cyberculture of the network economy. As such, the WELL community can be seen as an ancestor of Cyborganic. In addition to a small but significant overlap of members who belonged to both communities, the Cyborganic project also drew on WELL practices and policies to shape its own vision of a community connected both online and offline “in real life” (IRL).

Steuer and a few of the older Cyborganics—i.e. those who were in their late, rather than early, twenties—were WELL members and several prominent denizens of the WELL, including Rheingold, were mentors and members of Cyborganic. While the WELL’s membership was, on the whole, a generation or so older than Cyborganic’s, it included people such as Wired magazine’s founding editors (Rosetto, Kevin Kelly); and was, as Turner describes, a “network forum” connecting disparate communities. One of my earliest fieldnotes, from September 1993, captures these connections. It records the scene of a good-bye party for Abbe Don at the Rheingolds’ house in Sausalito. Don, who met Steuer working at Apple and introduced him to Rheingold, was off to graduate school at the M.I.T. Media Lab. Gathered on the porch were long time members of the WELL community; people I recognized from the raves I had been to; or from time spent in Wired’s offices; and several who fit in more than one of those groups. The conversation I describe as
“shop talk,”” the latest new of computers, the Internet, *Wired* magazine, and the burgeoning cyberculture.

Many enthusiastic dialogs, everybody seems to love Ken Goldberg’s Tele-excavation project, much common argot—TCP/IP, POP, geek jokes about the c-shell…Talk of up-coming trade shows (Interop?) and the virtues of the NeXT [computer]…interspersed with fervent discussions of Brenda Laurel’s brand new book [*Computers As Theater* (1993)]…People keep telling me to read Stewart Brand’s book about the Media Lab where Abbe is going. (Cool n.d.)

The pleasant, familial sense of that evening lingers in my memory as that of a small town sending one of its own off to the bright lights of a faraway city. Parties and celebrations, no less than the professional collaborations linking attendees, were crucial vectors through which the WELL influenced a new generation on the Internet in the early days of the Web.

In addition to the overlapping membership and sense of fictive kinship between the two groups, Steuer’s conception of Cyborganic also drew on the WELL in significant ways. Both were businesses built on hosting a regionally based online community. As has been well documented (Smith 1992; Rheingold 1993; Brand 1995; IFTF 1996), the WELL was about to go out of business until fans of the Grateful Dead migrated en masse to the conferencing system in 1985. Their subscriptions helped sustain the fledgling enterprise in the early days of member-based online communities. “Dead heads,” as they called themselves, came together at Grateful Dead concerts and caravanning between them as they followed the band. The WELL offered a way to sustain connection between concerts. It was the combination of online and face-to-face gathering places, Steuer explained, that was
so crucial to building a thriving community. He pointed out that the WELL had drawn on this when they began to host monthly “office parties” to offer WELL users the opportunity to meet face-to-face. This insight lies at the heart of Steuer’s vision for Cyborganic as a local community constituted and sustained through both online and “flesh and blood” channels. Steuer also drew my attention to the WELL’s policy of requiring new user accounts be authenticated via a phone conversation between a WELL administrator and the individual at the phone number associated with the credit card on the account. Though WELL users were identified to one another by their logins, and were free to remain pseudonymous to the community, WELL accounts had to be tied to individuals whose real world identities were known to administrators. The tenet that accounts not be anonymous was one of the founding principles of the WELL community. It is closely tied to a second principle referred to as “you own your own words,” or YOYOW and described on the WELL website.

The original intent of YOYOW was to serve as a disclaimer, reminding you that you were taking responsibility for your actions in the discussions. The phrase was later extended to clarify for members that no claims on your copyrights were being made by the WELL, and that you would be responsible for enforcing those rights. (The WELL, “YOYOW,” http://www.well.com/yoyow.html, accessed August 1, 2008)

The YOYOW principle worked because the WELL did not permit anonymous accounts and individuals were made conscious that they would be held responsible for their actions (what they wrote) in discussions. Both tenets were put in to practice in Cyborganic: anonymous accounts were not created, and members owned whatever words and media they posted. In these central principles of community, and its
example as a business built on hosting a community, the WELL was a model for Cyborganic. Both were exemplary communities founded to discover and share the benefits of computer-mediated communication. Both insisted members be just as accountable for their online behavior, as they were in the rest of life, offline.

The legacy of the regional mix of high-tech and hippie culture detailed in chapter 3 is also clear in the history and evolution of Cyborganic beyond these connections to the WELL. The fact that Steuer, a Macintosh user since 1985, met Don and Rheingold through his summer internship at Apple is emblematic of an entire line through which the countercultural and utopian vision of personal computer pioneers passed to a new generation that came of age in the 1990s. Apple pioneered, first, the personal computer with the Apple II line, then, the graphical user interface with the Macintosh. With a host of wares from QuickTime to iTunes, the company continues to be an innovator in networked, multimedia computing. Billed as “the computer for the rest of us” in its famous 1984 advertising campaign, the Macintosh has long appealed to those whose primary use of computers is for art and design, rather than business or science. Multimedia and desktop publishing were both significantly Macintosh-driven and were an important influence on the Cyborganic project.

Cyborganic was, unmistakably, “Mac and Unix” territory. Though there were certainly many Windows and DOS users in the community, the culture of corporate computing represented by Microsoft was explicitly rejected in favor of the ideology of freedom and creative expression that figures in both Apple and open source
culture. Almost all the desktop machines on the Ramona local network (LAN) ran the Macintosh operating system. In fact, the only “Windows box” recorded in my 1995 inventory of computers devoted to the Cyborganic business is a test machine, a desktop Pentium used to see how websites would look to Windows users. The desk this computer was on was decorated as a voodoo shrine with a rubber chicken and lava lamp, a mocking reference to the voodoo required to keep a Windows system running. Even beyond Ramona Avenue, there were significant numbers of Macintosh users in the Cyborganic community, and many Apple employees and former employees were members of the group. For example, Don had worked on pioneering multimedia projects at Apple in the late 1980s. A charter member of Cyborganic, Don’s home, half a mile from Ramona Avenue, was connected via ISDN to the Ramona LAN for almost a decade beginning in 1994.

Apple’s influence is also evident in Cyborganic’s mission to evangelize the Internet as a platform for personal publishing. Use of the terms “evangelize” and “evangelist” in the context of computing originated at Apple (Kawasaki 1990), and is now common in the industry to refer to those whose job it is to market new technologies, protocols, and standards, rather than simply specific products. Apple’s influence on Cyborganic can be seen in more playful detail in the practice of including “MacPaint Art, done on our Macintosh 512” (a computer from the 1980s) as a regular feature of the Thursday Night Dinner Web Dispatches. Apple also figures prominently in the heroic narrative of the “garage start-up” so central to Bay Area Internet culture. Just as Hewlett-Packard, Apple was bootstrapped in a Silicon
Valley garage and I heard the story of “the two Steves” (Jobs and Wozniak) starting Apple out of Jobs’ parents’ home in the 1970s many times from my informants, particularly in the first year of fieldwork, before a new crop of garage start-ups (Yahoo!, Google) provided fresh examples of the ideal.

There are strong family resemblances between the practices and social imaginaries described in my Cyborganic history and those of the computer hobbyist clubs, “faires,” and shops that Freiberger and Swaine (2000) write of in such compelling detail. All involve: (1) a blend of technology, enterprise, and sociality; (2) a combination of face-to-face gathering and mediated communication—before computer networking, this took place via print newsletters, magazines, store bulletin boards, and the like; and (3) the production of new imagined communities (Anderson 1991) constituted around and through computer media. One way to describe the regional and cultural legacies manifest in Cyborganic is in terms of the four-layered Internet culture that Castells delineates as techno-meritocratic, hacker, virtual communitarian, and entrepreneurial (2001:37). Each of these cultural flows is evident in Cyborganic.

The techno-meritocratic culture invokes the wedding of science and industry that began in 19th century America (Noble 1977), Terman’s legacy of university-industry collaboration, and Sputnik era government funding of university science. This strand of Internet culture can be seen in the role universities play in the network history of Cyborganic. Universities were crucial junctions and vectors through which new generations were socialized into Internet culture. Steuer met his Apple
colleagues through Winograd’s seminar at Stanford where industry professionals were regular guest speakers. Steuer (at Stanford) and Behlendorf (at U.C. Berkeley) used the computing and network resources available to them as university students to bootstrap projects that were decidedly extracurricular and this usage neatly captures the fusion of university, industry, and do-it-yourself (DIY) hacker and communitarian cultures that came together in Cyborganic. The vast majority of Cyborganics were college educated; many had, or were pursuing, graduate degrees. Universities furnished, not only access to computing resources and training, but connections to industry experts and researchers, as well school-tie networks that served as a primary channel through which skilled personnel were recruited to business and community projects, as well as other social networks.

In the last decade, hacker and open source culture have been the subject of much industry and academic research and writing. “Native” spokesmen such as self-described “hacker anthropologist” Eric Raymond, have championed open source as a revolutionary social technology for software development (1999). Legal scholar Lawrence Lessig has argued for the extension of free and open source software practices to other arenas of intellectual property (Lessig 1999, 2001) and scholars such as Castells and Pekka Himanen (2001) have emphasized the role of “the hacker ethic” in the development of the Internet. The influence of this hacker culture is manifest in Cyborganic’s membership in the wider free/open source software community that grew up around the Unix operating system. This is most apparent in Cyborganic’s early connections to the Apache project and The Little Garden (Figure
4.1), a bandwidth sharing cooperative that included such longtime hackers as FidoNet creator Tom Jennings and cypherpunk John Gilmore, employee number 5 at Sun Microsystems, founder of Cygnus Support⁹, creator of Usenet’s .alt hierarchy, and one of the founders of the Electronic Frontier Foundation. It was through TLG that Steuer established Cyborganic’s first full time Internet connection, going in on a subscription to a T-1 line from UUNET that was shared among individuals and geek communities in the Bay Area—from ‘SCRUZNet, in Santa Cruz, to Cyborganic, Jennings, and Gilmore, in San Francisco, who all wanted Internet connectivity at home “in the City.” Such practices as setting-up a home Internet server—at a time when most of the 20 million people estimated to be on the Internet connected through institutional networks or dial-up commercial services—show the influence of hacker culture in Cyborganic.

As the genealogical connection to the WELL suggests, Cyborganic’s communitarian discourses and imaginaries drew inspiration from telecommunities of earlier eras. Because the virtual communitarian dimensions of Cyborganic are the subject of the next chapter, I will say little about them here, other than to note evidence in the history of a form of techno-sociality pioneered in the counterculture by the New Communalists. The central roles played by SFRaves, Thursday Night Dinners, the Cyborganic mailing list, and community groups of all kinds (residential,

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⁹ Cygnus was one of the first businesses built on supporting free software.
arts, recreational), testify to the virtual communitarian elements of Cyborganic and to their importance in bringing networked computing from universities and workplaces out into everyday life. Perhaps the most visible legacy of the virtual communitarian strand of Internet culture lies in the term *community*, a social imaginary that appeared everywhere in the Web industry starting around 1995, and has remained a cultural keyword of the type Raymond Williams examined (1976). *Community* is certainly the key term or social imaginary linking the various phenomena that came together in Cyborganic. The Ramona neighborhood, Cyborganic’s business start-up, and the wider online and face-to-face network of people who identified as Cyborganics, all grew together; and though the term will be examined critically in subsequent analysis, *community* is the only social form adequate to describe or contain the phenomena Cyborganic encompassed.

Finally, in discussing the legacies that situate Cyborganic in the longer history of Bay Area Internet culture, I turn to inheritances in the entrepreneurial line. Cyborganic was itself a start-up business, of course, and most members of the community worked as employees or contractors at start-up ventures, or launched their own ventures. While most of these start-ups never “went public,” a few did (CNET, Organic, Critical Path) and some Cyborganics did, in fact, make their

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10 For example, the Ramona LAN was a residential group; while Medusa.org, a working group for women artists and writers, was arts centered; and groups such as SFRaves represent communities that come together around recreational interests.

11 That is, most did not become publicly traded, shareholder-owned companies in an Initial Public Offering, or IPO.
fortunes in the boom years of the Web. Job turnover was high and many Cyborganic members moved among the firms represented in Figure 4.1, in the style that has long been characteristic of Silicon Valley. As noted, the mythic narratives of garage start-ups, heroic hackers, and entrepreneurs who made fortunes doing what they loved (e.g. Jobs, Wozniak, Gilmore), continued to hold currency among my Cyborganic informants. These narratives contributed to the social imaginary of the start-up in light of which quitting a good corporate job to work grueling hours (50 to 80 hours per week) for stock options (or equity), and either deferred or below market pay, made sense to a good portion of Cyborganic’s members. This willingness to expend individual resources creating prototypes and demonstration models (demos) “on spec” had many varied motivations (from riches to reputation), but the examples of earlier generations of geeks who had gone out on their own and made fortunes (e.g. Sun Microsystems, Cisco) loomed large in the discourse. Talk of “IPOs,” “quiet periods,” “golden handcuffs,” “founder’s syndrome,” and other expressions related to start-up firms, pervaded the Cyborganic community in the boom years. Such conversation was not limited to any group within the community, but suffused the whole, graphic designers, software coders, and would-be entrepreneurs alike. Few Cyborganics were what one would call “business people:” there were few MBAs and few had studied business in college. Yet, the history and culture of high technology entrepreneurialism were “in the air” (Marshall 1920) in San Francisco in the 1990s.
Theme 2: Cyborganic’s Milieu of Innovation

The second argument I seek to make from the history of the project is that Cyborganic joined place, technology, and community in productive relationships that: (a) were central to the development of Web publishing in San Francisco in the mid-1990s; and (b) exemplify the regional and cultural advantage of what are called “milieux of innovation” (Castells and Hall 1994:8). In this argument, I draw on research outside anthropology that examines the distinguishing features of entrepreneurial regions and “technopoles,” i.e., concentrated areas of technological innovation and economic production.

Silicon Valley, “hailed worldwide as an heroic model of innovation in the service of dynamic economic growth” (Castells and Hall 1994:12), has been the focus of much of this scholarship which emphasizes the importance of the region’s local culture in creating its self-sustaining milieu. Saxenian’s work, for example, has demonstrated the crucial role of dense social relations and the culture of open exchange in Silicon Valley’s superior economic performance over other high-technology regions, such as Route 128 in Massachusetts (Saxenian 1993, 1994). In their global study of technopoles, Castells and Hall emphasize that in Silicon Valley there is “a strong cultural specificity in the values and lifestyle…that forms the human basis of this leading milieu of innovation” (1994:21). They further highlight the importance of culture in their analysis, stating that technological revolutions have always been associated with specific cultures that “are essential ingredients of the
ability to innovate and to link innovation to the applications most valued in a given society” (1994:21). More recently, researchers have examined Silicon Valley in terms of its culture of entrepreneurship (Bahrami and Evans 1995); networks of social capital (Cohen and Fields 1999); and as a complex ecosystem of interacting institutions, individuals, and culture (Kenney and Von Burg 2000). This work underscores the need to look beyond firms, institutions, and industry-specific agglomeration, at Silicon Valley’s social networks and culture as the source of the region’s productivity and longevity as a milieu of innovation.

Cyborganic built on Silicon Valley’s entrepreneurial culture of informal sociality to create new productive relationships that contributed to the rise of San Francisco’s SOMA district as an important hub of the Internet industry in the 1990s. My study of Cyborganic provides an ethnographic example demonstrating how milieus of innovation bring place, technology, and community together in productive ways. The importance of universities, an intensely work-centric, risk tolerant culture, and high degree of inter-firm cooperation, and mobility—documented in the case of Silicon Valley (Saxenian 1991a, 1993, 1994; Castells and Hall, 1994)—are all empirically observable in the Cyborganic case, as well. In the Cyborganic context, place refers both to the local concentration of residences and companies in particular neighborhoods in San Francisco’s Mission/SOMA area and to their regional location commuting distance from Silicon Valley. Community refers to the dense multi-stranded social relationships and multiple, overlapping networks of kith, kin, colleagues, business partners, and neighbors through which Cyborganic was realized.
The historical narrative I have presented shows Cyborganic’s productivity by tracing the roles community members played in the creation of the first advertising-supported Web publication (Hotwired), a leading Internet advertising firm (Organic Online), and two innovative software projects (Apache and Vignette StoryServer). All these ventures figured centrally in the business evolution of the Web (Reid 1997) and the dense ties that linked them illustrate vividly the inter-firm relations characteristic of milieus of innovation.

Cyborganic and its members also contributed to the development of Web publishing through process innovations and by understanding the central role user-generated content plays in the new media. Though less tangible than firms and software, these contributions are arguably as significant to business innovation and the development of the Web publishing industry. By examining these two innovations in more detail, I seek to make that argument. Both process innovation and user-generated content figure centrally in the work Cyborganic members undertook on the Hotwired and CNET launch teams. Closer analysis of this work will serve to explain what these innovations were, how they were significant, and to give a richer, more ethnographic sense, of the roles played by Cyborganics, not just individually, but as a community.

Before Wired launched Hotwired, no one had ever published an advertising-supported online magazine. Despite the name, Wired was run by people who did not understand the day-to-day practices of Internet culture. The publishers depended on
San Francisco’s ready supply of relatively cheap\textsuperscript{12}, young, technology-savvy labor, not only to feature the “digital revolution” in content and design\textsuperscript{13}, but also to build the technological infrastructure, organizational forms, and practices to support online publishing. Indeed this was the first project Steuer and Behlendorf worked on at Wired. As Steuer recounted in a 2004 interview, “When I started at Wired we were ripping text articles out of Quark Express documents by hand and putting them up for free e-mail distribution.” Wired had not yet become an informational enterprise (Castells 1996, 2001; Zuboff 1988). Though they had successfully incorporated desktop publishing into their core business practices (e.g. use of Quark Express page layout software), they had no idea yet how to incorporate the Internet, nor the tools to do it.

This knowledge came from staffers like Steuer and the people he brought in 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 publishing infrastructure.

Where Wired fell down and never recovered was [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

\textsuperscript{12} For example, Wired's graphic designers made less than $30,000 a year and scores of lesser paid contractors and editorial staff made minimum wage, if you factor in total working hours, with interns making less than that.

\textsuperscript{13} In his study of “no collar” Web workers in New York, Andrew Ross also notes the way “photogenic employees” were used to promote new media companies (2003:91).
had been burned by database projects that never launched at previous companies and never had faith in the investment. (Jonathan Steuer, interview, November 5, 2004, emphasis mine)

Beyond the resistance to investing in “tech projects MBAs don’t understand” there was also a resistance to the standardization of “template-driven design” and the re-organization of labor it requires. Throughout the organization, Wired used manual labor (“gnomes and elves”) 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” (Steuer, interview, November 5, 2004).

An example of “gnomes and elves” thinking as a failure to “get” the new media paradigm can be seen in the way Wired’s management handled the unexpected glut of subscription requests that came in via e-mail after the publication of their first two issues in 1993. Though their e-mail address had been published in the magazine, no system had been put in place to process the in-coming mail. As a result, thousands of subscription requests with the credit card numbers, representing tens of thousands in revenue to the new magazine, sat, unprocessed, in an electronic inbox for weeks. Wired’s editors wanted to hire “a temp” to process all the subscriptions by hand. Newly arrived in the field and looking for paid employment, I went to the Wired offices in September 1993 to ask about opportunities and this was the only job they were looking to fill immediately. When Steuer came over to ask how my meeting had gone, I told him about the subscription problem and expressed my confusion at why they hadn’t just written a script to strip out the strings of credit card numbers, names, and addresses in each e-mail. Steuer had not heard about the
problem before this, but agreed it was best handled with a little programming. Within
the week, one of the engineering staff had written a script, the subscriptions were
processed, and the need for a “temp” worker disappeared. This anecdote speaks
neither to my acumen, nor Wired management’s lack thereof, but rather to two
distinct informational paradigms. Using a script seemed obvious to me, not from any
special technical training, but from socialization in geek culture. Concepts and
practices of automation are core cultural competencies, what some scholars call
“tacit” or “non-codified” knowledge\(^4\) (Storper 1997; Forsythe 2001), and are
“picked up” by community members, as if by osmosis.

With or without a publishing system, launching and producing the online
magazine *Hotwired*, required process, design, and technical standardization. Given
the paradigm gap described, this was generally led by teams and individuals doing
the production work, rather than directed from above. The story of how *Hotwired*
“invented” the advertising banner illustrates this point. With its launch in October
1994, *Hotwired* created the first “banner ad” and set what became the standard size,
shape, and placement for advertisements in the early years of the Web—a rectangle
468 pixels wide by 60 pixels high, placed horizontally across the top of Web pages.
The decisions enshrined in that standard were not made “top-down” by management,
research, or design, but “bottom-up” in ad hoc negotiation among those making the

\(^{14}\) While knowledge of automation is highly codified and often explicit in geek
discourse, it is also part of the general knowledge of community members, even
those who are not programmers.
banner. *Hotwired* launched with advertisements for several companies and products including: AT&T, Zima (a malt beverage produced by Coors Brewing), Club Med, Volvo, and Sprint. Though each of these might legitimately claim the first banner, the Zima and Volvo sales were made first\(^\text{15}\). Organic Online was hired to create both the advertising banners and the “mini-sites” to which they linked because few advertisers had a Web presence of their own at the time (Reid 1997:299).

![Figure 4.3: AT&T banner ad that, with four others, was first on the Web](image)

Figure 4.3: AT&T banner ad that, with four others, was first on the Web

![Figure 4.4: AT&T banner ad as it appeared on Hotwired, October 1994](image)

Figure 4.4: AT&T banner ad as it appeared on *Hotwired*, October 1994

When it came time to make the Zima banner, someone at Organic Online called over to *Hotwired’s* offices to ask what size to make it. Though I was not present at the ad hoc meeting called to work out an answer, I heard about it during fieldwork and confirmed the story in this 2004 instant message exchange with Ian

\[^{15}\text{Dan Haig, personal communication, February 23, 2007.}\]
McFarland, an engineer at Hotwired and member of the Cyborganic community, who gives an eyewitness account of the discussion.

Jennifer (me): quik 1 ... why is std banner ad that size? was invented chez Hotwired for Zima, no?
Ian (informant): 468x60
Ian (informant): My great contribution to mankind. :-) 
Jennifer (me): Yours?... tell me the story again
Ian (informant): Mine and 3 other people.
Jennifer (me): Organic made the banner, i know that much, was Nelson 1/3?
Ian (informant): We were sitting around, me and Jeff Veen and um, me and my bad name memory... The art director at HW [Barbra Kuhr], and one other person.
Ian (informant): Dunno. Could have been. Him or Steuer.
Ian (informant): We said, well, we’re designing for 640x480...
Ian (informant): And Netscape is this wide....
Ian (informant): And leaves this much space...
Ian (informant): So let’s make it 468 wide...
Ian (informant): And 60 high looks good.
(Ian McFarland, personal communication, May 12, 2004)

The 468 x 60 pixel size arrived at in this ad hoc meeting was used for all the Hotwired banners and it remains the industry standard for “full banner” ads today.

Shortly after Hotwired launched, Steuer left to consult for CNET. CNET’s management had significant capital and they were like Wired in that they understood their core business, but did not yet have a grasp on how to fully exploit the productive and competitive value of information technologies. Yet, unlike Wired, CNET’s founder and CEO, Halsey Minor, was willing to follow Steuer’s advice, as Steuer explained in a 2004 conversation: “Halsey Minor understood scale, he was a

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business guy, so he was willing to take the plunge, to invest in a publishing infrastructure.” Minor approved the financial resources and Steuer brought Michael Gold over from *Hotwired*, to the design the publishing system that became Vignette StoryServer.

Steuer hired the Web production team that launched the CNET website with new publishing processes and infrastructure and most people on the team were core members of the Cyborganic community. In addition to Gold, Steuer also hired Donaldson from *Hotwired* and Dan Haig from Organic Online. Together they designed CNET’s posting area, developed the site architecture, and managed the ten person Web production staff through the re-launch of CNET’s website in the spring of 1995. Gold built the CNET bulletin-board system by hand and the team of Cyborganics collaborated effectively on the project. The key innovation Steuer and the team he hired brought to CNET was how to organize and structure the process of collaboration among business, technology, and design. As Steuer 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. (Jonathan Steuer, interview, November 5, 2004)

These are precisely the relations of production he helped CNET organize in designing and specifying the publishing system with Gold. The infrastructure and process innovations this team of Cyborganics put in place created long lasting value for CNET. They infomatied their online business, positioning CNET to become a
leading player in the Web portal market of the 1990s. Between 1995 and 1998, CNET launched several technology news and utility websites (Download.com, Shareware.com, Search.com, Moviefinder.com), spun out the StoryServer software with Vignette, and began syndicating their news feeds to other online Web portals, such as Netscape/AOL.

As an innovator, Steuer is exceptional for understanding very early on the interface between technical infrastructure and the production and publishing model of an online magazine. The tacit knowledge and process innovation he and other Cyborganics brought to Wired, Hotwired, CNET, and Organic Online drew on practices of mediated collaboration developed in peer groups linked through many multi-stranded ties. They are innovative because they represent some of the earliest solutions to the requirements and constraints of building and maintaining commercial Web publications. While mediated collaboration directs attention to the behind the scenes, or screens, aspects of Web publishing, Cyborganic’s innovations also bear on the collaborative media—self-published, user-generated, and aggregated content—that would come to fill those screens as the Web developed into a popular phenomena. Cyborganic’s members, and Steuer in particular, understood the role mailing lists, discussion boards, and chats, could play in gathering communities of interest around content online. Indeed, this was at the heart of the Cyborganic project.

The centrality of user-generated content was not, however, immediately recognized or embraced by those with experience in older media, even those such as
Wired publisher Rossetto. At Hotwired, tensions arose over this gap even before the website launched, with Rossetto on one side and Steuer and Rheingold, who Rossetto had hired as Hotwired’s executive editor, on the other. Though Wired’s business team initially struggled to define precisely what Hotwired was, they settled on calling it a “cyberstation” consisting of “a suite of vertical content streams with an integrated community space” (Keegan 1995). For Steuer and Rheingold, who were heading Hotwired’s online community initiatives, it was the community space that was central. Steuer designed Hotwired’s discussion system, Threads, and worked with Rheingold to make reader forums and reader-created content central in the online publication. Rossetto, however, did not share their vision of online community and was squeamish at the idea of featuring amateur content under his masthead. His comments to journalist Paul Keegan illustrate the divergent views.

“To me, it’s like the fascination with CB radio,” Rossetto says about Steuer’s and Rheingold’s idea of virtual community. “It is amazing, when you first get into it, to be able to just talk to whomever you want to whenever you want to. But in the long run, people actually want something else out of media. The major thing that’s going to be necessary in the future is the ability to take the raw material of the world and make sense of it. Because you as a writer or me as an editor can do a better job of interpreting reality than they could.”

Um . . . doesn’t that make this supposedly empowering, many-to-many medium an awful lot like the old, one-to-many mass media?

“No,” Rossetto insists, “the mass media talks to everybody. It tries to be abstract and discover a voice and attitude that everybody can connect to. I think Hotwired focuses on a voice and attitude that certain people will connect to. We don’t need to have an audience of 100 million people. We’re happy with an audience of maybe a million. But a million is a lot different than 100 million.” (Keegan 1995)
Thus, for Rossetto, the innovative and revolutionary thing about the Internet is the ability to target media produced by professionals (and the advertising that funds it) at specific audiences, ideally ones with spending power and influence, like *Wired’s* readers. For Steuer and Rheingold, who already went about their daily professional and personal lives in online communities, Rossetto’s view missed the most vital possibilities of networked media entirely. As Keegan reports, these differences strained relations between Rossetto and those he had hired to lead design and production on *Hotwired*, and both Steuer and Rheingold left the publication only months after its successful launch.

Steuer was instrumental in getting Hotwired off the ground but clashed repeatedly with Rossetto over what “virtual community” means. He quit in January. “I think Louis’s claim that he has any commitment to the idea of community is a lie,” he says... Steuer dismisses Rossetto as a Net latecomer. The first issue of Wired mentioned the Internet only once—and in a manner that drew some snickering, even from Rossetto’s friends. Above Negroponte’s column, his E-mail address was printed as “nicholas@internet,” which would be like addressing a postcard c/o Planet Earth. Perhaps realizing his limitations, Rossetto chose as Hotwired’s executive editor Howard Rheingold, author of the best-selling book, “Virtual Community.” But like Steuer, Rheingold wanted Hotwired to be more about bringing people together and less about selling Volvos. “Hotwired is a business with a payroll,” says Rheingold, who also quit. “There’s nothing wrong with that, but don't pass it off as cultural revolution.” (Keegan, 1995)

As this excerpt indicates, there were distinct differences between the Net community that developed before the first wave of Internet commercialization and those who saw the Internet primarily in commercial terms. Keegan’s story captures the tension between these groups and their very different understanding of the significance of
the many-to-many capabilities of networked media. Producers of traditional media (books, magazines, cinema) who came online during the dot-com boom were fond of the slogan “Content is king!” However, as the most recent developments on the Web bear out, the insight that user-generated content is king seems to have been more prescient.

Though Steuer and Rheingold were not able to realize their community-centric Web visions at Hotwired, each went on to do so in his own venture. Steuer turned full force to Cyborganic in the spring of 1995 and, in 1996, Rheingold founded Electric Minds, an international Web community and another of the many SOMA start-ups with Cyborganic members in leading roles. Their ideas about the centrality of user forums, content, and community were disseminated, not through the large, more commercial ventures in which they were first involved, but through their own enterprises, home grown among a community of producer/users with shared cultural knowledge of collaborative media. These innovations, which with Web 2.0 have come to dominate popular understanding and practice on the Web, came into the mainstream bottom-up, in collaborations between those with capital, like Wired Ventures and CNET, and those who were hired to design and produce the first commercial publications and media on the Web.

Though the imaginaries and practices of community on the pre-Web Internet may not have translated in full to the dot-com era, the word community came into

17 Howard Rheingold, Abbe Don, Justin Hall, and James Home were among the Cyborganics who worked at Electric Minds.
ubiquitous use to refer to the gathering of audiences online around specific interests. Though the term “cyberstation” was replaced by “portal,” integrating vertical content streams with “community” became the primary business model for the Web and was adopted by Yahoo!, GeoCities, Amazon, Hotmail, and Netscape, to name only a few. In his work as a consultant, Steuer regularly gave talks about Internet media and one of his standard presentations was on the basic goals of Web portals. He referred to these goals by the mnemonic “the Five C’s,” which were content, commerce, community, context, and connectivity.

Content (Hotwired)
- provide original information
- package and brand information from content partners
- attract attention toward information

Commerce (Amazon)
- sell products
- sell services

Community (Geocities)
- build affiliation
- create a medium for self-expression & discourse
- gather groups with shared interests
- build shared information resources

Context/Search/Index (Yahoo)
- index other sites’ information
- make that information accessible and searchable

Connectivity (hotmail, AOL)
- provide email (hotmail)
- provide fax service (efax)
- provide Internet service (AOL) (Steuer 1995)

While content and commerce are product-driven, Steuer would point out, community is people driven and requires different sensibilities of those seeking to build an online business around it. In focusing his own start-up on community, he and his collaborators in Cyborganic created forums and tools for self-expression and
discourse; used inherited forms of networked media (e-mail, chat) in new ways; and innovated new forms and genres, for instance, proto-blogs such as Justin’s “Links from the Underground,” and Geek Cereal. These will be examined in the following chapter that, in contrast to this one, looks internally at Cyborganic, its constituent parts, practices, and community. Even before examining the networked social media that the group produced and practiced in its own community, Cyborganic’s contributions and innovative role in the early Web publishing industry can be seen from the network history narrative and analysis of this chapter.
Chapter Five

The Cyborganic Whole: Business and Community, Online and Onground

The previous chapter described the practices and innovations of Cyborganic and its members primarily in terms of their contributions to other firms and ventures—*Wired, Hotwired, Organic Online, CNET, and the Apache Project*—none of which were mounted under the aegis of Cyborganic. Emphasis was placed on situating Cyborganic within the networks of San Francisco’s Web publishing industry in the 1990s. In contrast, this chapter moves to look at Cyborganic itself, describing the community’s constituent parts and the practices they encompassed.

The name Cyborganic refers at once to the business project, the community within which it grew, and subsequently, to the larger community that grew around these. The project was imagined and pursued as a start-up business and that enterprise provided the impetus and infrastructure, both technical and narrative, for the community. Yet, both the business and community were aspects of a symbiotic whole that: (a) can not be neatly separated; and (b) is best understood, overall, as a community, rather than a business, association, club, or any of the other social forms and functions Cyborganic encompassed. Both claims are substantiated by ethnographic material in this chapter that demonstrates the inseparability of Cyborganic’s entrepreneurial and communitarian forms, practices, and imaginaries.

Just as its business and community, Cyborganic’s online and offline components overlapped and were mutually constitutive. Yet, representing these
various phenomena ethnographically requires some analytic vivisection and, for
heuristic purposes, the Cyborganic whole can be divided into three parts which can
be seen as different interfaces through which social actors participated in the
community: (1) the business project; (2) the place-based, face-to-face community;
and (3) the online community.

**Cyborganic as Business**

In its narrowest sense, Cyborganic was a project to build a community-based
Internet business, similar to the WELL, but for a younger generation¹ and with the
key addition of a physical space (the Cyborganic Café) for informal, face-to-face,
interaction. Rather than begin by selling a product or service to customers,
Cyborganic’s strategy was to build a local community of its own to demonstrate the
value of combining face-to-face and online sociality. The business was started with
personal resources and volunteer labor and grew from this initial phase: first, into
Cyborganic Media, a sole proprietorship owned by Steuer (1994-1995); and then,
into The Cyborganic Corporation (1995-1997), a company in which principals and
some employees held stock options, though the majority of equity was reserved for
investors.

Though it was integral to the development of the community, only a subset of
community members participated directly in the Cyborganic business. Community

¹ That is, people who were in their twenties in the 1990s.
members can be distinguished by their roles in the following hierarchy of participation, from most to least directly involved in the business project.

- Founder, Jonathan Steuer, initiated Cyborganic and led the company from its inception in 1993 through its closing in 1997. His role in the business was singular, formative, and authoritative.

- Company principals took on managerial roles and worked without salary to launch Cyborganic as an Internet start-up in exchange for equity when the business incorporated in May 1995. Cyborganic’s founding principals were:
  - Jonathan Steuer, President and CEO
  - Jennifer Cool (the author), Community and Education Director
  - Ann Hess (Sonic), Director of Web Production
  - Caleb Donaldson, Gardner-In-Chief (Editorial lead)
  - Tricia McGillis, Design Director

- Full-time employees hired after Cyborganic incorporated who worked onsite at Cyborganic’s offices were compensated with wages and, in some cases, stock options. Over the course of its operation, the Corporation had 11 employees: these included the five founding principals as well as:
  - Bryna Bank, Crisis Management (Office Manager)
  - Peter Rosberg, Chief Technology Officer (CTO)
  - M Normal, Community Ringleader
  - Terri Nelson, Operations Manager
  - Steev Hise, Web Producer
  - Ivonne Pokorny, Designer
• Office and systems administrators were hired during all phases of the business project and compensated with cash, rather than equity. Cyborganic generally had no more than two staffers at a time, with a total of about eight people participating in this way over the lifespan of the business.

• Community members also worked as independent contractors for Cyborganic, taking on specific jobs for which they were paid. These included public relations and accounting, as well as work on client projects that Cyborganic took on while working to raise venture capital. Contractors were professionals with specialized skills such as accounting, design, systems administration, and computer programming. Over the course of the business, approximately thirty community members worked in this capacity.

• Volunteers who were not formally compensated on a market basis also contributed to the Cyborganic business on the basis of reciprocity. These included those who worked to develop Cyborganic’s online curriculum (Francis and Haig); contributed code and custom Web applications such as the Carving Tree (e.g., Laura La Gassa, Stefan Lisowski, John Shiple, Ian McFarland); did the wiring for the local area network (Rick Schneider); helped scout commercial real-estate for a downtown location (Holly Kreuter); office interns (Susie Kameny); and the volunteers who cooked, cleaned, or provided music for the weekly potluck community dinners. While dinner volunteers were most numerous (about 100 people), over the course of the business project
approximately 24 members of the community contributed their skill and labor to the other tasks described.

- Cyborganic members who did not take on any of the roles above also provided benefit to the business by populating the community and adding their own Web pages and creative projects to the content hosted under the Cyborganic name.

During its initial phase, the business project consisted primarily of Steuer and I working on our own time, outside of jobs and school. In October 1993, Steuer bought a computer identical to the one he had just installed as Wired magazine’s Internet gateway, set-up Cyborganic’s first server and, with help from roommates, took on such physical plant projects as transforming the downstairs kitchen at 65 Ramona Avenue into a server and media storage room for video, audio, and data backups. I focused on developing the business plan and writing proposals for the project, such as the brochure for Cyborganic’s first demo at the Halloween Anon Salon in 1993. Together, we worked with housemates and neighbors to build Cyborganic’s network and information systems. This included wiring the apartments on Ramona Avenue, setting up an old Macintosh (the Butler) as a local file server to share media and software, and getting all the spare computers available working and online. Even though all the housemates had their own computers, there were terminals and computers in the hallways and common areas, just as were planned for the proposed Cyborganic Café. In the spring of 1994, the first “Cyborganic Summit” was held and 25 community members gathered to discuss the project and their interest in participating.
While Steuer and I were the only ones working on the business plan at this time, all who lived in the group households on Ramona participated materially and vitally in the initial project of building a techno-commune. Beyond incorporating the Cyborganic vision of techno-sociality into their own lives, they opened their homes to guests (“couch surfers”), visitors, and later, the media, in the effort to launch the start-up business. During this period, the business project had no funds to pay anyone involved. Steuer used his own money to set up the Internet server and LAN, and was adept at securing contributions of hardware and labor to bootstrap the technical and administrative infrastructure. Essentially, this infrastructure was part of Steuer’s consulting business, Cyborganic Media, which, at this point, involved contract work for others in the community only occasionally. Other than this, the practices and relationships entailed in the business project during this initial phase were uncommercial, uncontractual, and largely indistinguishable from the everyday life of the Ramona community.

The second phase of the Cyborganic business got underway in January 1995 after Steuer quit *Hotwired*. Though it had been on hold for several months, he now turned his attention back to the project of starting his own company. While opening an actual café required capital he did not have, the project of opening one online could be realized by community members participating out of their own interest in creating such an online forum. The strategy was to write a business plan to secure funding while bootstrapping the online part of the proposed venture, then called “The Cyborganic Clubhouse,” through unpaid, individual investments of time, labor, and
other personal resources. The business goal of the website was to demonstrate
Cyborganic’s community vision, making the project more attractive to potential
investors. Creating Cyborganic’s Web presence was the defining goal of this phase
of the business project.

On January 15, 1995 a meeting of project volunteers was held at which
Steuer described the project overall; explained its initial goals; and outlined the
structure of the virtual “Clubhouse” space. He emphasized that none of the proposed
design was “written in stone” and invited input from the group. The meeting agenda,
excerpted below, gives a good sense of the goals, means, and processes that defined
Cyborganic’s business at this stage.

1/15/95 meeting agenda
+ overview of cyborganic media
  - not service provider. is home, source, place
  - registered business with [bank] account
  - physical space will exist at later point
  - a place based around people, not a publication based around “content”
  - integrated, not a free for all. coordinated, centralized area
+ money
  - none right now to buy stuff (except scanner which JSS will buy
    immediately)
  - idea is to run space as one destination for infobahn drivers, give them
    someplace cool to go. A destination of worth!
  - idea is to build a demo, business model not worked out, still to be done
  - co-op volunteers unless we get paying contracts
+ sponsorship
  - cyborganic media cut to be determined
+ business structure (3 things, only head of 1)
  - project leaders
  - committees; task force groups of 3 or 4 people
+ ownership
  - individuals own copyright of work throughout
As these agenda items show, Cyborganic’s aim was not to be a service provider, or a “publication based around ‘content,’” but a “place based around people.” The first priority was for each project member to make his or her own homepage and put it up on the Cyborganic site as soon as possible. Even though a business model (i.e., a plan for generating profits) had not yet been worked out, the group proceeded to build a “demo version” of their online community with volunteers. The rules of participation were that each volunteer only be involved in three, and head up only one, of the “task force groups” working on the project.

Following this meeting, the Cyborganic mailing list was re-launched and plans for the Clubhouse website, along with organizational and administrative details of the project, were sent to everyone who had expressed interest in participating, 33 people in all. Beginning in February, a weekly brainstorming meeting was held on Thursday evenings, and a business meeting on Sundays at noon. These were
convened for approximately six weeks before people broke in to smaller working
groups and the larger meetings were discontinued. Hess took on the task of helping
community members create their homepages, and worked with Donaldson and
McGillis to design and produce the rest of the Cyborganic site. Some community
members—Justin Hall, Steve Bahcall, Dog and Pony, Carla Sinclair (co-founder of
Boing Boing)—signed on to put their own creative work on the Cyborganic website.
Others created HTML and Perl tutorials for the site (Charlie Fulton, Ovid Jacob); or
helped with tasks such as maintaining the desktop Macintosh systems (Francis
[Graham] Potter, John Haig). I took on the administrative role of e-mailing
schedules, agendas, plans, and announcements to the group. Steuer focused on the
consulting work through which the business was then funded, on seeking investors
and innovative collaborators, and on Cyborganic’s computer and information
systems. Working in this way, Cyborganic’s first website was produced and went
online as scheduled in April 1995.

The start-up project entered its third phase when the business was
incorporated as the Cyborganic Corporation in the summer of 1995. Hess,
Donaldson, and McGillis joined on as principals in the company and began the work
of redesigning and expanding the Cyborganic Gardens website which was re-
launched in October. The project still had no start-up funding so Steuer and I
continued shopping the business plan and salaries were negotiated, but deferred until
the company received its first investor check in November. The events, people, and
practices involved in the project during its corporate existence (1995-1997) were
presented in the last chapter, and are detailed further in the following descriptions of Cyborganic’s face-to-face and online components.

**Cyborganic as Place-based, Face-to-Face Community**

Both the Cyborganic community and Cyborganic business started in an apartment at 67 Ramona Avenue, in San Francisco’s Mission Dolores neighborhood. The housemates at 67 Ramona, single and in their mid-twenties, made a conscious choice to live communally, sharing groceries, household chores and expenses, and social lives. Having lived before in groups that shared nothing but the rent, they decided to create a household where food in the refrigerator was not labeled as personal property, and residents did not simply come and go, as if living in a hotel. Their Ramona Avenue apartment became a gathering place for young techies, ravers, and artists in the City’s burgeoning rave and multimedia scenes. When neighbors moved out of the apartment below (65 Ramona), the household expanded, adding two new members, and beginning the process through which more than thirty community members moved into apartments on the street as they came up for rent over the next few years. Each new apartment was connected to the group’s local computer network via Ethernet cable running over rooftops and across the street.

The households on Ramona were the most tangible manifestation of Cyborganic as a social group. The boundaries of this group can be traced as a physical network of computers, wires, and buildings that extended at its height across 11 separate rental apartments. This neighborhood was the geographic heart of the community. It
was the place where Cyborganics met face-to-face in the course of everyday life, for work, meals, recreation, project meetings, and weekly potluck dinners. Socially, this place-based community was composed of three nested groups: (1) people who lived in the Ramona Empire; (2) those who were connected to the Ramona LAN; and (3) those who participated in the weekly community potlucks, known as Thursday Night Dinner, or TND.

**Figure 5.1: Cyborganic as place-based, face-to-face community**

Peaks are largest number of *simultaneous* members in each group. Totals are the number of members over the life of the group.
The cluster of group households, known first as “Ramona Towers” and later, the “Ramona Empire,” preceded the business project and was distinct from it, despite significant intersection. The Ramona Empire included all those who lived in the first five apartments to be occupied at 59, 65/67, and 80/82 Ramona; and, later, three apartments in the Victorian house on the corner at 15th Street. This physical community of housemates and neighbors, which grew at its peak to twenty members, formed a subgroup within Cyborganic. Between 1991 and 1999, approximately thirty-five people were Empire residents. Though many in this group were active in both the business project and online communities, others were not active in either. The bonds linking members of the first Ramona households were those of fictive kin and they have since become godparents of one another’s children.
Figure 5.2: Aerial view of the Ramona Empire

Numbered houses were connected by Ethernet cable to the Ramona LAN.

(Image courtesy of Google Maps)
The Ramona Neighborhood and Local Area Network (LAN)

The apartments on Ramona Avenue, and a few others in the neighborhood, were connected to the Internet through the Cyborganic server and local area network, or LAN. At its peak, the Ramona LAN extended across 11 apartments, providing approximately thirty people full-time, residential connections to the Internet.

Before DSL and cable modems became commercially viable in the late 1990s, dial-up connections were the only type of Internet access easily available to individuals outside of institutions (i.e. universities and corporations). A high capacity digital transmission line (T-1) cost $3,000 to $5,000 per month in 1993, putting it beyond the reach of even a small business. In this context, Cyborganic provided a way for members to share full-time, residential Internet connectivity in a social formation I call a “bandwidth collective.” Sharing connectivity in this way served to distribute the cost of an expensive resource, providing a service that was not available any other way at the time. The costs and labor of creating and maintaining this network were shared on a variety of bases over the years it operated. Initially, Steuer absorbed the set-up and monthly bandwidth costs as a business expense of Cyborganic Media. Members of the original five households never paid for connectivity, though they contributed reciprocally to Steuer’s project in other ways. LAN members who joined later typically shared a portion of Cyborganic’s monthly bill for Internet connectivity.
One of the ways the Ramona neighborhood grew was that residents watched for and told friends about vacancies in the area. When new people moved in, one of the first group activities was to run cable across the roofs or street to connect their apartments to the Ramona LAN. When the large Victorian house on the corner burned in a fire in 1994, Cyborganics offered to wire the gutted structure for phone and Internet at no cost to the new owner, who was restoring three rental units there. Their motives were to expand the Ramona Empire and create ideal geek quarters with phone and Ethernet jacks handy in every room. Within a year, the new housing—with pristine wiring by Cyborganic’s resident hardware guru, Rick Schneider—was ready and rented to other Cyborganics, adding three apartments, and seven people to the Ramona LAN.

Though the bandwidth collective piggybacked on Cyborganic’s business need for full-time Internet access, it was part of the community project and became an entity in its own right that outlived both the business and the Ramona Empire. After Cyborganic’s business folded in 1997, neighborhood residents took over responsibility for the LAN and organized a non-profit group, the Church of the Immaculate Connection, as a cooperative that shared Internet connectivity (“bandwidth”), technical infrastructure, and administrative labor. The cooperative was active until 2002, years after the business and most of the original Ramona Empire residents had moved off the street.
Thursday Night Dinner (TND)

Thursday Night Dinner, or TND, was a weekly potluck that constituted the largest and only regular face-to-face gathering for the whole Cyborganic community. Started by Ramona residents as a supper club and new media salon, it grew to be a weekly party for San Francisco Web workers with a regular attendance of 80-100 at its peak. TND was an experiment in bringing people together around networked media in a relaxed, playful setting.

Cyborganic has combined the block party, performance art, and mass communication into an electronic garden...Thursday Night Dinners opened the door to face-to-face partying and cyberspace exploration. Using a server located in the kitchen, guests could explore cyberspace in the context of friends and informal socializing. Nesting the virtual experience in a social situation humanized an otherwise potentially impersonal experience. (IFTF 1996:25)

TND guests congregated at the computers set up throughout the apartment, sharing favorite websites, trying out new software, and introducing neophytes to the Internet. Though the goal of a Cyborganic Café was never realized, TND functioned as a “demo version” of the vision. For two and a half years, the dinners were the main forum for face-to-face social interaction in the community, showcasing the Ramona techno-commune and Cyborganic vision to the outside world, and drawing new members and attention to the group.

In the summer of 1994, I began hosting the potluck dinners and with housemates Francis (Graham) Potter and John Haig at 59 Ramona. Community members took turns cooking a main dish which guests were expected to supplement
with contributions of other edibles and drinks. Dinners were usually prepared on site, in the kitchen where TND was hosted. Food was set out buffet-style and eaten, plate in hand in the kitchen, living room, and common areas. Initially, when 12-15 people attended each dinner, the household dishes and cutlery where used. But within a few months, regular attendance grew to two or three times that and the Ramona residents bought a stock of disposable plates, cups, and utensils for use at TNDs. Dinners ran from about seven in the evening until midnight, but were casual affairs with guests arriving and departing at different points throughout.

Figure 5.3 Attendees at an early Thursday Night Dinner (TND)

Initially, TND was a community project, not under the business, and the primary goal for most of the Ramona residents was to spend social time together and with friends. Dinners were held about every two weeks, but not on a strict schedule.
In the interest of launching the business, however, Steuer felt TND had to be held every week. As his collaborator in the business and organizer of TND, I took on the task and TNDs became weekly in the fall of 1994, but were still held at 59 Ramona, rather than at Cyborganic’s business offices next door. After Steuer quit *Hotwired* and returned full force to his plans for a start-up, TNDs became even more central to the business, both as a venue to showcase Cyborganic’s techno-social vision and for the camaraderie of volunteers contributing to the project.

In the spring of 1995, responsibility for TND was brought formally under the business project and dinners were moved to 65/67 Ramona, where Cyborganic’s offices and server were located. Though the business provided the facilities and some basic supplies, TNDs had no budget and were produced every week with community volunteers supplying food, drink, entertainment, and clean up labor. To coordinate the effort on an on-going basis, I set up a basic template: each TND needed a guest chef to provide the main dish, a DJ to provide the music, and a “swabmaster” to lead the clean up. In addition, it became practice for each TND to have a theme, usually chosen by the chef, which gave attendees ideas about what to bring and, sometimes, what to wear. For example, themes included: “Pajama Party Breakfast,” “Goth Night,” “Playboy Mansion Swank Seventies,” “One Fish, Two Fish” (colored food à la Dr. Seuss’s green eggs and ham), and “Organic’s Not Square,” featuring triangular foods prepared by Organic Online staffers. Co-workers from different firms and subgroups (e.g. the contingent of Cyborganics from Mills College) often teamed up in this way to cook for TND.
Starting in the fall of 1995, “TND Dispatches” were published on the Web with stories and photos from each dinner. A Cyborganic staffer\(^2\) was assigned the job of reporting on each TND, taking digital photos, and producing the HTML pages every week. Members of the general community were also encouraged to produce their own dispatches. For some, this was an opportunity to display their skills with the new media; and for others, it was an introduction to making their “very first HTML pages:”

I’d really like to thank all the folks at Cyborganic for the opportunity to get my feet wet in HTML. It's not hard, but marking up text is a real pain. I'd also like to send out a real special thanks to Drue Miller for extra help with the HTML formatting. (Mark Gavini, TND Dispatch, November 30, 1995)

In addition to providing fresh content for Cyborganic’s website every week, TND Dispatches were a way to recognize the chefs, swabmasters, and DJs who volunteered for the dinners. Thus, the dispatches not only served the business project by drawing traffic to the website, but also fed back into the community project of sustaining volunteerism.

By 1995, with the Internet boom in full swing, TND became something of a media event. It was chronicled in *Rolling Stone* and reporters and film crews became a regular sight at the weekly dinners.

Last night’s TND began under the glare and heat of two (count’em! 2!) television crews roaming our not-yet-ivied halls and poking fuzzy

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\(^2\) Jeff Logsdon, Cyborganic’s systems administrator, was the first to hold this job, which was later passed to other staffers—Sarah Keogh, Kat Kovacs, Terri Nelson—and circulated to volunteers from the community.
boom-mikes in our faces. A crew from c|net interviewed Caleb and M for a cable special on online community, while MSNBC's The Site conducted a group interview of the GeekCereal Geeks concerning “geeksploitation.” (Terri Nelson, TND Dispatch, October 18, 1996)

During the dot-com boom media attention to the Internet was rampant. TND’s photogenic, young crowd furnished much sought after visuals and colorful characters to reporters hungry for stories about the Net and Net culture. In addition to those from the U.S. (CNET, MSNBC, Discovery Channel), television crews from Japan, France, and Germany came to cover the event, which was also featured in the online project and book 24 Hours in Cyberspace (Smolan and Erwitt 1996).
The TND Dispatch Archive

10/31/96 Halloween Slideshow
   * We set up a webcam and a workstation to record the trick-or-treaters who graced our doorstep.

10/24/96 Dolmas and Cameras
   * A media circus goes Greek as TND struts its stuff for iv cameras and embraces its classical roots.

10/17/96 Hey Baby, Got Any Fries To Go With That Shake?
   * A night of fast-food gluttony at the Cyborganic HQ. Cruella gives you the greasy facts.

10/10/96 Playboy Mansion Swank Seventies
   * A fabulous evening to delight all the seances. M Normal reports on the best of all possible worlds.

8/29/96 Gumbo DeLuxe
   * The Virgin Report: Dominic Sagalla reports on his first TND.

8/15/96 Gangland Paradise
   * Oldschool gangsters muscle in on TND turf.

8/8/96 Pitching Woo
   * A night of romance and audity. Anything goes at Cyborganic.

8/1/96 Inorganic Cyborganic
   * Kat Kovacs gives us an inorganic dispatch.

7/25/96 Beach Blanket
   * Le Scout tells the story of the beach party

7/18/96 The Great Entertainer
   * Ellen reports on the second TND field trip to The (not-so) Great Entertainer

7/11/96 Pack and Bowl
   * Owen reports on the first TND field trip (just what were they packing?)

6/27/96 Salsaam and Farewell
   * TNDs in July will all be field trips, but Jeremy and Dan Borstein left us with one from home to remember. Sumptuous Indian food and a quiet, cozy group of friends.

Figure 5.4: The TND Dispatch Archive, Cyborganic Gardens website
Cyborganic as Online Community

In addition to the business and place-based community, Cyborganic was also an Internet community in which members participated through several online venues. These included: accounts and domains hosted on Cyborganic’s servers; a real time chat forum (space bar), mailing lists; and the website, Cyborganic Gardens.

Cyborganic Servers: User Accounts and Domains

At the group’s peak approximately a hundred people had logins on Cyborganic’s servers, which over the years were named *ramona, erehwon, xanadu, xanatoo*, and *oz*, reflecting the project’s place-based and utopian imaginaries. While some, such as the volunteer systems administrators, or *sysadmins*, had shell access, most user accounts were for e-mail and Web publishing only. Cyborganic provided many members their first e-mail accounts and many more a place to host their first Web pages, along with publishing tools such as a staging server to preview changes before publishing pages “live” on the Web.

Cyborganic also provided virtual hosting for community members and their projects. Between 1994 and 2002 more than a hundred domains were hosted virtually on Cyborganic’s servers: these are listed in Table 5.1 below.

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3 Systems administrators, or sysadmins, maintain computer systems and networks.

4 Put simply, “shell” accounts afford higher-level access allowing users to edit files on a server, rather than simply uploading and downloading files to and from a server.

5 Virtual hosting is a method by which multiple domain names can be hosted on a single computer server.
## Table 5.1 Domain names hosted on Cyborganic

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</tr>
<tr>
<td>mitra.hm</td>
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</tr>
</tbody>
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These included domains for members’ personal and professional websites, creative projects, and a variety of non-profit and activist organizations in which Cyborganics
were involved. Most notably, Tibet.net—the official website for the Dalai Lama’s Tibetan administration in exile—and more than a dozen websites and mailing lists for Tibetan relief organizations, have been hosted on Cyborganic since 1997. The cost and labor of administering Cyborganic’s servers has been shared on a variety of bases over the years. Though there was a move in 1996 towards charging for user accounts of members who were not otherwise contributing to the project, once the business closed in 1997, Cyborganic’s servers were operated non-commercially as a bandwidth cooperative.

*Space bar*

Space bar, a text-based synchronous conferencing system or “chat room,” was another of Cyborganic’s online venues. Unlike instant messaging, which affords one-to-one communication, synchronous conferences allow multiple people to login to the same channel and exchange messages with a group in real time. Anyone on the Internet could login to space bar, but users could only chat in channel one until their accounts were verified by the chat’s administrator, “the spaceman” (Donaldson). Verified users could create their own channels on space bar and make these visible, or invisible, to others. Users could also send private messages and “beeps” to one another through the chat.
Figure 5.5: Space bar login screen showing basic commands

From the time it went online in April 1995 space bar had a contingent of regulars who spent much of each workday logged in to the chat. Most were people whose jobs entailed being at a computer with an Internet connection all day.

I’m usually on the space bar by eleven-thirty or eleven, say, and bail for lunch, go outside and talk to my tape-recorder or talk to my journal, or play guitar or something to get the stress out and then, show up at one and deal with afternoon meetings and then by, easily, definitely by three I’m back on “the bar.” (Dominic Sagolla, interview, October 17, 1996)
It’s certainly busier during the day, during the week, when everybody's supposed to be working and they’ve got their telnet window open, on their computer desk...(laughs)...yeah, I think a lot of people actually do get work done while they have space bar running. (Kat Kovacs, interview, October 8, 1996)

Besides “hanging out,” “gossip,” and “banter,” Cyborganics—whether space bar regulars or not—also used the chat as a way to get immediate help with practical and technical matters.

I’ve seen that happen, too, people trying to set up http servers on their Macs and they don’t know exactly what’s involved and someone saying, “Oh, ok, just go to channel 92” and spend 15 minutes and they have everything figured out. (Sean Robin [pseudonym] interview, October 21, 1996)

Keeping a window open to space bar all day was tantamount to having a cohort of knowledgeable friends with you on your desktop in the workplace. As I found myself while working in Silicon Valley, an hour south of “the City,” this was a rather empowering experience. Psychologically, it countered the isolation of working far from home among people I did not know. If someone at work asked me a question I could not answer, I often turned to space bar and found an answer without letting on that I had not known it all along. Nearly all space bar’s regulars worked in information technology and the chat provided Cyborganics their own personal group of experts, available real time at any networked computer.

Most of space bar’s regulars also logged in from home and the chat room was also typically active late at night. Some even stayed logged on when they were asleep or otherwise out of range of the “beeps” space bar users could send to one another’s computers. When asked about this practice, some suggested it was “a
status thing to be on the bar,” while others indicated that staying logged on gave a
sense of “being together” that was comforting. As one of my interviewees said of
space bar, some people “lived there.”

I’ve described the space bar as a “time suck” before, but people live
there, so I can’t really do that, you know. (Dominic Sagolla, interview,
October 17, 1996)

Many Cyboranics noted the addictiveness of chat and joked about themselves or
their friends—for example those who logged in to space bar while they were at
TND—as “chat addicts.”

Space bar just sucked me in (laughs!) it did, it's really terrible… since
then I’ve introduced my friend Brea, her online persona is Lilith, I got
her on space bar and it’s just funny to see her going through the same
thing I went through, it’s some sort of sick addiction (laughs)… “I
just need to see who's on space bar, just real quick, it'll just take me
one sec, let me just get my fix real quick” and sometimes, even if I
don’t have time to logon, I’ll just peek in to the porthole, I’ll just see
who’s on, I’ll just pop-on and say “hi” and it makes me constantly
late for things (laugh). (Kat Kovacs, interview, October 8, 1996)

Even Cyboranics who did not spend much time on space bar used it as a hailing
frequency when they wanted immediate answers, or needed to track somebody
down. To facilitate this usage, Cyboranic’s Web team created a “porthole” on the
space bar website so people could see who was online in the chat without having to
login themselves. They also devised a “cadet detector,” that space bar patrons could
put on their homepages to indicate whether or not they were currently logged in to
the chat.
Figure 5.6: The space bar cadet detector

Space bar was accessible from any location and some of its regulars lived outside the Bay Area. Yet, because of the preponderance of members from the Bay
Area, the chat was place-centric, if not entirely place-based, as one of the space bar’s early regulars describes.

Space bar has gone probably through 2 or 3 distinct changes [since] we first went online. There was a lot of light-hearted word play and the mood could really stretch from total light-heartedness to very serious discussion. For the first few months that was the general tone, and of course the general welcoming of new people into it because it was expanding. It probably went from a few tens of people to a few hundreds logging in, and then, in terms of regulars, from probably 4 or 5 or 6 to probably 15 or 20 regulars. And it started changing slowly, for 3 or 4 months it was more or less the same, people having fun with the new-comers, just sort of joshing around a little bit, giving them a hard time in channel 1, popping back and forth from other channels, but underlying all that was still a very trustworthy relationship between all the people who were there. You could always ask or tell someone what you honestly thought and that probably lasted a few months as well and then it began to change. It became much more popular with people in physical proximity to the Bay Area, maybe San Francisco itself. What started happening was more sort of SF, San Francisco-centric conversation and topics coming up, which was a novelty when it first got up, even for someone who’s never been there and has no idea where people hang out and all that, it’s amusing and entertaining and interesting to listen to people talk about what they did when they were all at lunch and they are now talking about it on space bar, that’s fine. And that grew into a whole new area of interaction all by itself and I think that started some people feeling more left out than others, almost as if they were kind of pushed out. (Sean Robin [pseudonym] interview, October 21, 1996)

While this out-of-towner speaks of feeling “pushed out” by space bar’s San Francisco-centric character, he himself moved to the Bay Area after finishing graduate school and attended a few TNDs, but did not become a regular member of either the mailing list, or the face-to-face community. Others were also drawn to San Francisco through the chat. Some came to visit and attend a TND; others decided to move there and got help finding work and apartments through space bar friends.
Space bar’s regulars formed an in-group within Cyborganic and having fun with (i.e. fooling or tricking) “chat newbies” was fairly commonplace. Though users had to request verification from space bar administrators (Donaldson and the regulars he deputized with administrative powers), this did not require revealing one’s identity to others in the chat. About half of space bar’s users had a login different from their main Cyborganic one and, though regulars might know who was who “in real life” (IRL), it would not be clear to others. Further, one person could have multiple accounts, so even those who used their Cyborganic logins might have other accounts not tied to that identity.

A lot of the Cybo establishment used the same names as their main accounts, but had aliases for fucking around. (James Home, personal communication, March 19, 2008)

Tunaluna is a space bar regular and she is usually very helpful to everybody, although she also just has fun playing around with newbies in channel 1 under a different ID, and as the moderator she has another login which if you ask her, she's always pretty helpful, but she also plays with newbies. There was one great evening, me and her and there were 2 other people and a couple newbies and within about half an hour we had them believe that everything they said was being measured for some big government project from Iowa and everything went into this big computer to design chat machines for the next generation. It’s really childish at some level, but it’s a harmless game that some people play, but then as the moderator login, she wouldn’t do that, she would not intentionally mislead people [laughs]. (Sean Robin [pseudonym], interview, October 21, 1996)

As these space bar regulars indicate, even the chat’s moderators had different aliases and engaged in the in-group games with neophytes. Though Cyborganic’s policy of not offering anonymous accounts was technically in effect because the chat’s administrator (Donaldson) could map each alias to the person who used it, from the
point of view of chat visitors not “in the know,” this principle of community was
effectively moot. In this sense, space bar was a liminal zone within Cyborganic.

Space bar was Donaldson’s project and when Cyborganic’s business closed in 1997, he moved the chat to another community member’s machine (James Home’s *minerva*). A group of about 14 people continues to log in to space bar today, mostly to idle together in the channel, or engage in conversations that proceed at the rate of one or two lines a day. Thus, the chat serves essentially a phatic function: it is primarily used to establish *social* connection, rather than communicate messages.

“The anthropologist Bronislaw Malinowski (1884-1942) coined the phrase ‘phatic communion’ to refer to this social function of language, which arises out of the basic human need to signal friendship—or, at least, lack of enmity” (Crystal, 1987). Malinowski (1989) pointed to ritualized greetings, formulaic speech (e.g. “Hi, how are you?,” “Fine, thanks,” “Well, here we are.”) and talk of the weather as examples of this use of language to maintain social relation. In identifying phatic communion, he points to its meaning (friendship/lack of enmity), its social function (message), and also to one particular medium of its expression—language. Recalling Gitelman’s definition of media as “structures of communication [that] include both technological forms and their associated protocols” (2006:7), one might say that in Malinowski’s examples human biological capacities to think and vocalize language as speech are the technologies involved, while the grammar, syntax, and conventions of use of particular languages are the “associated protocols.” Eminent linguist Roman Jakobson described the phatic function as the “endeavor to start or sustain
communication,” noting it as “the first verbal function acquired by infants” who “are prone to communicate before being able to send and receive informative communication” (1981:24). But he also highlighted the technical function of phatic utterances noting that this “contact without a message” also serves to keep a channel open as a test of the overall system itself.

As it is currently used, space bar represents a structure of communication that in its very minimalism demonstrates Gitelman’s point that media are never only technological, but always already conjoined in social protocols and cultural meanings. It also illustrates what I mean by highlighting the techno-sociality of Cyborganic’s cultural practices and imaginaries. For example, in technical terms, one might say this use of space bar *automates* the phatic function of communication in its display of users who are logged in to the channel, for example:

```
cool/anthropologist [jenny@cool.org] (idle:0s)
jim/obamageddon [jim@spacebar.com] (idle:23 days, 11h, 17m, 56s]
```

But the function is also *infomated*—to use Zuboff’s (1988) term for the way information technologies support richer communication around the tasks to which they are applied—with automated messages from the system (idle time) as well as customized messages from users (e-mail address, nickname). In the example above, I (cool) have just logged in (*idle:0s* means idle for zero seconds), while space bar’s sysadmin (jim) has been logged on and idle for almost 24 days. Appended after each login are “nicknames” (anthropologist, obamageddon) as they are called in space bar’s command menu, though this optional function is not typically used to convey a
fixed identity, but is updated with status messages of different kinds (e.g., mood, location, role) or, in this case, political commentary. Even in its present narrow use, the communications practices observable on space bar, include a range of social functions and cultural meanings. Besides the phatic communion of a small group of old friends who stay logged in to the channel, it exists as a way for people who used to frequent the chat to find known regulars, or at least learn their current e-mail address and when they last said something in the chat.

The inactivity of space bar has itself become a point of cultural elaboration in a drinking game called “Jim types” wherein those logged in to the channel are supposed to take a drink of alcohol anytime Jim actually types something—a safe contest given the infrequency of the event. Thus, while the object of most drinking games is to consume alcohol for speed or quantity, “Jim types” is not so much a game as a ritual of phatic communion. Moreover, it is one that parodies the cultural genre of drinking games and jests wryly about the common practice of staying logged in without actively exchanging messages. In this way, space bar’s continued use underscores the importance of understanding media as Gitelman defines, never as simply artifactual or instrumental, but as structures of communication “where communication is a cultural practice, a ritualized collocation of different people on the same mental map, sharing or engaged with popular ontologies of representation” (2006:7). Space bar’s technological forms are difficult to disentangle from their associated protocols: together they include not only the Internet, telnet protocol,
vrave chat program, and computer systems used to serve and connect to the chat, but also other social and cultural protocols, genres, and contexts.

Mailing lists

Mailing lists were central to Cyborganic as means of coordinating action, expressing norms, identities, and purpose (i.e., socialization), and in terms of group formation and structure (i.e., the scaling and articulation of smaller and larger social forms). From the time ramona.cyborganic.com came online, Cyborganic’s servers hosted a great variety of mailing lists that served numerous distinct projects, organizations, sub-groups, and super-groups of the community. Some mailing lists were ephemeral, arising to serve a particular project or event then falling out of use. Others were long lived such as the cc list that was active for seven years. Cyborganic members also operated mailing lists for independent projects and groups, for example, the Tibet.org mailing lists. Thus, the humble mailing list was a crucial structure of communication through which Cyborganic was socially realized, both intensively, as a group called “Cyborganic” with particular sub-groups, and extensively, in relation to the world beyond Cyborganic. Mailing lists were instrumental to Cyborganic’s spread beyond Ramona Avenue. Though there is some fluidity in the categorization, lists were of three types: Cyborganic community lists, business project lists, and lists run by members for their own projects (e.g., Salon Medusa and Tibet.net). This overview focuses on three community mailing lists that
were central to the Cyborganic project of combining online and on-ground social interaction: the Empire list, the TND list (later tnd-sf), and the cc list.

*The Empire List <empire@cyborganic.com>*

The first mailing list on Cyborganic was *empire@cyborganic.com* which went to all those in Cyborganic occupied territory on Ramona Avenue. Initially, this was the residents of 65, 67, and 59 Ramona; but as the Ramona Empire grew and the apartment at 65 became a workplace, the list was extended to all those who lived or worked on the street. The criteria for membership on the Empire list reflects a clear place-based logic; and the name “Empire” conveys this sense of place along with an expansionist imaginary of occupying more territory and extending the group’s dominion.

**Table 5.2 Empire list subscribers, February 1994**

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>jonathan, giamma, bananne</td>
<td>lived at 65 Ramona</td>
</tr>
<tr>
<td>lisa, dv</td>
<td>lived at 67 Ramona</td>
</tr>
<tr>
<td>cool, graham, christina</td>
<td>lived at 59 Ramona</td>
</tr>
<tr>
<td>luna</td>
<td>did not live on Ramona</td>
</tr>
</tbody>
</table>

Rules of inclusion: List members are residents of the networked apartments on Ramona Avenue, or their significant others (luna).

In its first phase, the Empire list was primarily devoted to discussion of household activities, such as: laying Ethernet cable; coordinating shopping, bills, dinners, parties; and carpet cleaning. It was a list of roommates and neighbors, trafficked by the details of everyday life from the practicalities of garbage pick-up and apartment openings to the festivities of concerts, raves, dinners, and jokes. Some
members of the Empire list were principals in the Cyborganic business; others worked on Cyborganic as volunteers, contractors, or employees; and some had no involvement with the project. People who moved into apartments on the Ramona LAN were automatically subscribed to the Empire list, no matter their level of involvement. For example, Christina (Table 5.2) was a member of the Empire list and dinner participant while she lived at 59 Ramona, but was not otherwise active in Cyborganic and was taken off the Empire list after she moved off Ramona Avenue. Similarly, people such as Ed and Lukas (Table 5.3 below), were on the list only during the time they lived or worked on Ramona.

### Table 5.3 Empire list and sub-lists, April 1995

<table>
<thead>
<tr>
<th>List Name</th>
<th>Subscribers&lt;sup&gt;6&lt;/sup&gt;</th>
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</thead>
<tbody>
<tr>
<td>59</td>
<td><a href="mailto:bagus@organic.com">bagus@organic.com</a>, graham, <a href="mailto:isbister@leland.stanford.edu">isbister@leland.stanford.edu</a></td>
</tr>
<tr>
<td>towers</td>
<td>jonathan, cool, eyeneer, lisa</td>
</tr>
<tr>
<td>80</td>
<td>sonic, ed</td>
</tr>
<tr>
<td>82</td>
<td>jsd, bananne</td>
</tr>
<tr>
<td>ramona</td>
<td>59, towers, 80, 82</td>
</tr>
<tr>
<td>empire</td>
<td>ramona, alita, giamma, luna, ovid, nick, lukas</td>
</tr>
</tbody>
</table>

Numbers in list names refer to street numbers: for example, 59 went to the residents of 59 Ramona Avenue, 82 to those at 82 Ramona, etc.

*Towers* refers to the conjoined apartments at 65 and 67 Ramona.

Rules of inclusion: List members are residents of the networked apartments on Ramona Avenue, their significant others, people working onsite on the Cyborganic project, or alumni of the original group on Ramona (i.e., giamma and luna).

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<sup>6</sup> Listed by Cyborganic login except for those subscribed from accounts on other servers who are listed by their full e-mail addresses (now defunct).
Initially, the Empire list was a multi-household list, governed by the domestic logic of friends, housemates, and neighbors, but it grew according to a logic of place. As the business grew, people who did not live on the street began to report for work at 65/67 Ramona. They were added to the Empire mailing list as occupants of the territory, people who might be there to receive packages when you were not, or have coffee, or paper, when you ran out. This is why I say the Empire list grew according to the logic of place, rather than, say, residence, or friendship, though these certainly shaped the list as well.

**Table 5.4 Empire list and sub-lists, November 1995**

<table>
<thead>
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<th>List Name</th>
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<tr>
<td>65</td>
<td>mister3d, eyeneer</td>
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<tr>
<td>67</td>
<td>jonathan, tricia, caleb, cool, bryna, jeff</td>
</tr>
<tr>
<td>towers</td>
<td>65, 67</td>
</tr>
<tr>
<td>80</td>
<td>sonic, ed</td>
</tr>
<tr>
<td>82</td>
<td>jsd, bananne</td>
</tr>
<tr>
<td>1834</td>
<td>amber, oliver, stuart, geezer</td>
</tr>
<tr>
<td>ramona</td>
<td>59, 65, 67, 80, 82</td>
</tr>
<tr>
<td>empire</td>
<td>ramona, giamma, luna, 1834</td>
</tr>
</tbody>
</table>

Rules of inclusion: List members are residents of the networked apartments on Ramona Avenue, Cyborganic staff working at 65/67 Ramona (towers), or alumni of the original group on Ramona (i.e., giamma and luna).

Tables 5.3 and 5.4 show that, as “the Empire” grew, the Empire mailing list grew and spawned sub-lists. Lists were set up so one could e-mail the residents of each apartment separately, a subgroup of apartments (towers, ramona), or everyone on the Ramona LAN (empire). The architecture and naming of these lists articulate the place-based logic by which the Empire list grew. By November 1995, the list and
the Ramona Empire it connected had grown and changed, not only in membership but also in the character of their connection. By this point, six of the eight people on the towers sub-list had moved off Ramona, and only one of Cyborganic’s seven full-time employees still lived on the street. Yet, 13 of the 21 Empire list members were residents of Ramona Avenue and the list maintained its neighborhood character, focus on place, and the shared physical network (i.e., the LAN).

As the Cyborganic community beyond Ramona continued to grow, greater numbers of people came to the weekly dinners, making an impact on the neighborhood in terms of traffic, parking, noise, and security. When the Cyborganic business gained momentum, the Empire list became an important channel through which those not directly involved in the business could raise neighborhood and community concerns to those who were. Further, as a place-based list, Empire continued to reflect and exemplify the core mission of Cyborganic, that of “building a home on both sides of the screen,” a home just as rooted in place and the face-to-face, as in the forums and interactions online. Though not open to the general Cyborganic community, Empire was clearly a community list of stakeholders in a particular set of resources.

The TND List <tnd@cyborganic.com>

Started in February 1995, the TND list (tnd@cyborganic.com) was set up to announce and organize the weekly Thursday Night Dinners. An event specific mailing list, the TND list was also subject to the logic of place in the sense that it
focused on face-to-face gatherings at a particular location. List members lived in the Bay Area⁷ and, while the great majority were San Francisco residents, a number also lived “across the Bay” or “down the Peninsula” in Silicon Valley and would make the drive to “the City” to attend TND. This spatial logic was reflected in use of the list and in the replacement of the original TND list with two new lists in October 1995—tnd-sf for the Cyborganic dinners in San Francisco and tnd-nyc for Cyborganic’s New York City dinners.

The TND list was hosted on a Cyborganic server throughout its life, and was administered through the business project. Administrative announcements about what the list was for and how to get on or off it came from the Cyborganic staff member responsible for TND, rather than from a community volunteer. Though administered through the business project, the TND list was unmoderated, open to anyone who subscribed, and the majority of posts came from the general community, who neither lived on Ramona, nor worked on the start-up. It was a relatively lightly trafficked mailing list, averaging over its nearly three-year lifespan about three posts a week. Because TNDs were potluck, most list traffic was devoted to soliciting volunteers to cook, clean, or DJ, but there were also: thank-you e-mails, discussions of possible themes and activities, recipes, morning-after commentaries, announcements of items lost and found, links to pictures, and later to TND Dispatches. When TND ran short of volunteers, both Cyborganic staff and active

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⁷ There may have been a few exceptions, but in general, those who moved away from the Bay Area left the list.
community members would post to the list encouraging greater participation and making theme suggestions for the dinners.

Because the list’s stated focus was TND and geeks take this sort of thing seriously, people where “flamed” (sent harshly worded e-mail) for postings not related to the Thursday dinners. In practice, however, topic boundaries were less absolute. The identity and history of the poster, content and context of the post, all influenced the reception of an off-topic item. List members would post with impunity about local events, such as a friend’s band playing or an art opening; local raves (e.g. Friends and Family, ComeUnity); or when they were having a big party. For example, when Organic Online hosted a party in the company’s new South-of-Market offices in April 1996, the invitation was sent to the tnd-sf list. In addition, there were occasional off-topic threads, some for amusement, such as one about the “purity test,”8 and others about local and Internet politics.

Though all posts to a mailing list are implicated in list socialization, there were also meta-posts that took up the matter explicitly. In addition to administrative announcements about the list, these included posts from list members educating others about the norms and values of the subculture. For example, the following thread about junk e-mail (spam) to the TND list clearly illustrates this type of socialization.

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Date: Wed, 12 Jun 1996
To: tnd-sf@cyborganic.net
Subject: Re: Chain letters

At 1:28 PM -0700 6/11/96, Jeffrey Logsdon wrote:
>>Who is sending chain letters on the tnd list? Naughty naughty.

At 5:58 AM -0700 6/12/96, Richard Raucci wrote:
>Yeah, what bad taste! Sometimes I liked it better when you hadda
> use Unix commands to access the Internet!

At 3:05 PM -0700 6/12/96, Matt Brown wrote:
IMO, although I am violating it with this email, you should ignore
any spam-like email. If you are concerned that the list manager won't
deal with it, send them a note (directly, not to the list) asking if they
have dealt with it. Otherwise, that single spam actually translates into
about 6 messages in my mailbox. That is nearly as bad as the original
post.

Fortunately, only a few people replied to the list regarding that chain
letter so this time it wasn't so bad. On some of the lists I am (with 5k+
members), that would have brought down their list server.

:) Just my $0.02. Take it as that.

In his initial posting, Logsdon assumes that because the TND list is only open to
subscribers, the “spammer” must be someone on the list. His comment addresses this
person and is meant to censure their sending of e-mails not related to TND. The first
follow-up to his complaint also seems to address the person sending “chain letters,”
though in a sidelong way. In calling out their “bad taste,” Raucci’s comment
separates spammers from the in-group, by casting them as technological neophytes,
people who would not have been on the Internet in the old days when “you hadda
use Unix commands.” Then, Brown chimes in with a more prescriptive post about
how to respond to “spam-like email.” In addition to describing specific steps to take,
he explains why responding this way is more constructive than complaining about
spam on the list itself. Each of these posts serves as an instrument of socialization, not only about sending and responding to spam, but also about keeping posts on-topic, and the importance of being mindful of what you send to other people’s in-boxes, particularly where large mailing lists are concerned. The thread thus stands as an example of the way even narrowly specified mailing lists, tend to exceed their instrumental charters and convey a variety of socially meaningful communications.

Though customarily focused on the planning and promotion of TND, when the tensions between the business and community aspects of Cyborganic began to have a negative impact on the weekly dinners at the end of 1996, the situation was discussed on the tnd-sf list. Community member and space bar regular, Jose Kirkland, initiated the conversation in a post with the subject “Putting the ‘din’ back in TND,” excerpted below. She begins by noting the “dominant dissatisfaction with TND” that had grown within the community.

From: Jose Kirkland <jose@calvin.pitzer.edu>
Subject: Putting the "din" back in TND...
To: tnd-sf@cyborganic.com
Date: Thu, 12 Dec 1996 13:09:00 -0800 (PST)

…I think at this point it would be foolhardy to deny that there is a dominant dissatisfaction with TND and what it is seen as representing around here, that however much it has been loved in the past, and that fondness persists, that people don't like how things are going lately... attendance has been down, spirits have been low or confused, rumours and weird little theories (granted nothing says they're incorrect either ;) ) have been flying, and overall there’s a grumpy apocalyptic taste of brimstone in the air.

Kirkland then proceeds to invite community members “to share their ideas or suggestions, or visions of what could be.”
We’ve all heard the complaints, the arguments, the conjectures...Now I’d like to hear some solutions.... if anyone is willing to share their ideas or suggestions, or visions of what could be, please spit em out... I’d like to see some thinktank action here ...I just think it’s about time we stopped complaining and dropping off and did what we can to make this thing, which is ours, what we really want it to be.

Kirkland’s post launched the only long discussion on the tnd-sf list and, over the next week, 12 list members wrote responses about the trouble with TND and what could be done to fix it. The discussion prompted a rally of support for TND that contributed to the planning and participation of a number of well-attended dinners in what turned out to be the last three months of the event.

Though the last TND hosted by the Cyborganic business took place on March 27, 1997, the tnd-sf list continued for a few months after. It was used to propose the idea of continuing weekly potluck dinners without the support of the business and to gather e-mail addresses of those interested in participating in the new endeavor. On May 2, 1997, a new mailing list, dinner@satori.net, was launched for this purpose and carried on in place of the tnd-sf list.

*The Cc List <cc@cyborganic.com>*

Besides the Empire and TND lists, Cyborganic also used a community-wide mailing list, the cc list (cc@cyborganic.com). Started in 1994, the cc list was re-launched in January 1995 with 33 subscribers, grew to 52 subscribers by March 1995, and 152 subscribers by mid-1996. Though initially used to organize the business project, it became a community list and remained the channel through which to address the whole of Cyborganic’s membership. Being on the cc list was
one measure of membership in the Cyborganic community, and getting on the
mailing list was one of the first things new people would do. That the cc list became
a forum of the community, rather than the business, is reflected in its continuation
long after the company’s demise in the fall of 1997, with an average of three to four
posts a day through 1998 and 1999, and over one hundred subscribers. Though list
activity diminished to about two posts a day in 2000, and just over one post a day in
2001, membership held fairly steady, with 85 subscribers in October 2000, falling to
68 at the end of 2002 when the cc list was finally shut down.

The list that gave rise to Cyborganic’s community list was, in its initial
incarnation, a project list at the address cafe-list@cyborganic.com. Launched in
September 1994, the café list was not place-based, nor was it open to self-
subscription. However, it was self-selected to the extent that it included those who
had expressed interest in helping realize the project of creating a Cyborganic café.
Initially, list discourse focused on the task of putting together a business plan and
discussion of the project vision. There were posts about the café industry, other
cybercafés (e.g., the Icon Byte Bar), potential investors, dividing responsibilities for
research, specifying technical infrastructure, creating spreadsheets, and the logistics
of meeting.

In January 1995, the café list was reincarnated as the Cyborganic Clubhouse
mailing list (cc@cyborganic.com). Steuer subscribed 33 people to the new list and
sent out the following welcome message:
Hi folks...

I’ve taken the liberty of adding all of you to our new Cyborganic Clubhouse mailing list. The address is <cc@cyborganic.com> -- in other words, messages sent to the address will go to the entire list, which currently consists of:

Steve Bahcall eyeneer@cyborganic.com*
Brian Behlendorf <brian@wired.com>
Gianmaria Clerici <gclerici%dvlpyr@us.oracle.com>*
Jennifer Cool <cool@cyborganic.com>*
Abbe Don <abbe@cyborganic.com>
Jon Drukman <jsd@cyborganic.com>*
Anne Francis <bananne@cyborganic.com>*
Charlie Fulton <foultone@mtcc.com>
Peter Getty <seldane@aol.com>
Bagus <bagus@cyborganic.com>*
Justin Hall justin@cyborganic.com
Sonic <sonic@cyborganic.com>*
Alita Holly <alita@cyborganic.com>*
Morgan Holly <mholly@voyagerco.com>
Marjorie Ingall <sassy@phantom.com>
Ovid Jacob <jacob@slacvm.slac.stanford.edu>
Julia Jones <jj@panix.com>
Dan Levy <danlevy@well.com>
Mara <luna@cyborganic.com>
Niels P. Mayer <mayer@eit.com>
Ian McFarland <imf@neo.com>
Tricia McGillis <tricia@cyborganic.com>
Mark Petrakis <spoon@well.sf.ca.us>
Nick Philip <nphilip@netcom.com>
Graham Potter <graham@cyborganic.com>*
Howard Rheingold <hlr@well.com>
Ed Rigaud <ed@cyborganic.com>*
Lisa Seaman <lisa@cyborganic.com>*
Aleen Stein <aleen@applelink.apple.com>
David Steuer <nwdave@echonyc.com>
Ellen Steuer <ellen@cyborganic.com>
Jonathan Steuer <jonathan@cyborganic.com>*
Dave Thau <thau@nwu.edu>
If you want off (or know someone who wants on...), please send mail to the list maintainer, Jenny Cool, at <cc-request@cyborganic.com>.

I’m outta town until 2 February, and offline until 27 January. But when I get back, it’s time to get this show on the road! So get up for the downstroke, ’cuz the Cyborganic Clubhouse is no dream...

Aloha-
-jonathan-

All residents of the Ramona households (asterisked above) were included on this new list, along with family, friends, and colleagues who had expressed interest in the project, or whose aid was being solicited. The e-mail addresses of those subscribed to the list reveal several as experienced with online communities (well.com, echonyc.com), others as computer savvy (wired.com, oracle.com, slac.stanford.edu, netcom.com), as well as the fact that nearly half the subscribers had accounts on the Cyborganic server (cyborganic.com).

The cc list launch coincided with Steuer’s decision “to leave Hotwired to pursue the vision of Cyborganic that had been stewing for so long.” Further, the name change from Cyborganic “café” to “clubhouse” reflects the strategic decision to focus in the short term on creating an online Web presence for Cyborganic, and to use that as a “demo” in the longer-term effort to raise capital for a physical venue. The list was used to circulate plans for the Cyborganic Clubhouse website; for the project over all; and to organize and report back on weekly meetings. The majority of posts to the cc list in its first few months were meeting minutes and other official Cyborganic announcements. There was no discussion on the list during this time, no

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9 Jonathan Steuer, e-mail to the cc list, January 2, 1996.
spillover of conversation from the meetings. My interpretation is that, as an all-volunteer venture, where everyone had another full-time job, Cyborganic was already tapping its volunteers to the fullest with weekly meetings and project teams. People barely had time to read the agendas and notes posted to the cc list during this period, let alone engage in discussion there.

By the summer of 1995, the cc list had grown to 52 subscribers and project activities were being coordinated within smaller teams that had formed and stabilized during the series of meetings in the spring. After one of the people who had been active on the café-list (Thau) went to work for *Hotwired*, Steuer became concerned about the number of *Wired* and *Hotwired* employees on the cc list, where Cyborganic’s business and website plans were openly discussed. It was decided that the cc list should be left as it was for general discussion, and that more sensitive business communication should be quietly moved to another list (rosebud), a sub-set of the cc list comprised of 22 people. The formation of this new list demonstrates Cyborganic’s growth on two fronts. First, a core group of active participants (rosebud) were now working on the business project and the period of open enrollment, and calls for participation came to a close. Second, discussion on the cc list had increased sufficiently that cessation of posts about plans for the business project did not result in any noticeable drop in list traffic. Rather, people in the wider Cyborganic community began posting on topics of more general interest and, as they did, transformed the cc list from the project list it had been into a community discussion list.
Topics discussed on the cc list included: (1) political subjects, such as censorship of the Net via software and legislation (e.g., the Communications Decency Act); (2) technology news, opinion, questions, and advice; (3) links to innovative uses of the Internet, interesting or useful websites; (4) announcements of conferences and industry events; and the usual assortment of posts typical of open discussion lists about (5) parties and local events; (6) “classifieds” for housing, jobs, and hand-me down goods\(^{10}\); and (7) humor, usually forwarded. Over the course of 1995, traffic on the cc list grew and thoughtful discussions broke out, along side more announcement style posts. For example, in August 1995, the debut of the Internet soap opera *The Spot* inspired a long thread on the idea of Cyborganic folks doing “a *real* online soap opera” of their own, an idea that was realized seven months later in the launch of *Geek Cereal*. The publication of the Unabomber Manifesto in September 1995 was also occasion for many posts and some wide-ranging reflections on technology, but these exchanges did not have the intensity or wide participation of the cc list’s later “flame wars.” Once confidential business communication was moved to the rosebud list (and later the core list), *cc@cyborganic.com* became an open mailing list. Anyone could e-mail the list administrator to get on it, and could find the information to do so at TND, on the Cyborganic website, or from a friend.

\(^{10}\) As on Craigslist, whose founder, Craig Newmark, was subscribed to the cc list.
As the Internet industry grew in San Francisco, and people moved there to work, Cyborganic grew and the cc list saw more subscribers and more postings about jobs and apartments. One draw of the list was the number of industry insiders and knowledgeable geeks who were subscribed, as this interview excerpt indicates:

Oh, I read about this guy in the trades all the time, and here he is posting an apartment listing, so that’s kinda fun uh, um, occasionally you’ll have the flame war that comes and pops up on the Cyborganic list. There was one that I was involved in about 2 or 3 months ago, NT versus Unix, that was a lot of fun. (Dave McClure, interview, October 7, 1996)

While most welcomed the cc list as another venue for community, there were some who opted out of the fray, choosing only to receive e-mail about TND (via the TND list). Cyborganic also had an outpost in New York City, and a scattering of members across the country. So, as cc list traffic increased, a decision was made to sort it geographically, while still maintaining an overall community forum. This was done by creating separate geographic sub-lists—one for San Francisco Cyborganics, and one for those in New York. People on each of these regional lists were automatically subscribed to the cc list, but were now supposed to send local postings to the appropriate regional sub-list (sf@cyborganic.com or nyc@cyborganic.com). Additionally, members in other locations, or those wishing to skip local postings, could subscribe directly to the cc list, without being on a regional sub-list. These changes went in to effect at the end of October 1995 and subscribers were welcomed to the new cc list with an e-mail explaining the reorganization and reiterating the list’s purpose and subscription protocols.
At this point, the cc list was still being maintained manually, meaning subscription requests were sent by e-mail to a Cyborganic staff member who then edited a file on the server. Though labor intensive, this process also allowed for some informal screening and initial socialization of people joining the list. There is, however, no record of any request to join a Cyborganic mailing list having been denied. By mid-1996, Cyborganic began using mailing list software (Majordomo) to administer its lists, at which point individuals could freely subscribe or unsubscribe themselves via e-mail to the program.

For many, the cc list was a focal point of their connection to Cyborganic, even if they did not post to it. For instance, when I asked one informant to describe her involvement with Cyborganic during in a typical day, she answered:

> Once I get the family situated, then I get a cup of coffee and do e-mail, check cc list. I look at them as my link to the cyber world. I consider myself not quite knowledgeable enough to post but I learn a lot from it. (Breck Sullivan-Carpenter, interview October 16, 1996)

Checking the cc list was part of her morning routine, as it was for many Cyorganics during these years (myself included), but this does not mean the list held the same place or significance for every subscriber. As with most lists, there were “lurkers,” subscribers who never (or rarely) posted; and there were also highly active posters, people guaranteed to chime in on almost every discussion. Participation was, however, well distributed, with 223 different people posting at least once—and over two hundred people posting more than that—between January 1, 1995 and July 31, 1996, when list subscription stood at around one hundred and fifty people. Turnover
accounts for the number of unique posters over the 19 month period exceeding the number of list subscribers at any one point in time.

While most traffic consisted of posts that did not generate much discussion, by early 1996 there can be no doubt that the cc list was an open forum for topics beyond the Web industry or those of a bulletin board for local jobs and housing. In March 1996, there was a vigorous and somewhat rancorous debate over the building of a new baseball stadium in San Francisco’s China Basin, in which the anti-stadium quip “Fuck sports” provoked many lurkers to speak up in defense of athletics, if not the stadium. On March 28, a forwarded news release about prisoners striking for minimum wage resulted in 29 follow-up posts that day, in which 15 different people presented reasoned, often very informed, arguments for and against the cause; and on such related topics as the prison-industrial complex; growth of prison labor; and the rights to which all human beings, even felons, are entitled. Through such threads, cc@cyborganic.com became a list characterized by periodic flame wars that, at times, caused people to unsubscribe and divided the community. Yet, these flame wars also stimulated intense reflection and discussion about what the list was for, what sort of speech and topics were appropriate, whether people should be kicked off the list, and under what circumstances. In this way, flame wars served to define the cc list, and Cyborganic community, by bringing out the community’s consensus opposition to kicking even the most reviled person off the list.
Both the intensity of debate and norm of this style of discourse are apparent in the following excerpts from interviews where informants were asked to talk about their experience of the cc list.

Yeah, I was real anxious about posting to the cc, ‘cause I’ve just seen lots of flame wars and, you know, everyone, now that I know them, it’s all good natured, but when you’re first there, it’s like “Oww, ouch.” Or, you know, you feel for that person. They’re not getting, it’s not touching them, but you feel like, “Oh, battered,” or whatever. It takes a while to suss that kind of thing out. (Dominic Sagolla, interview, October 17, 1996)

Generally, I think that, independent thought certainly is encouraged to some extent, flame wars are actually tolerated, and even encouraged to some extent. I think that adds a little bit of liveliness—perhaps more than necessary—to the fray. Certainly there is an element of speaking to a public forum and I think there is an expectation of providing some value, or humor or insight, rather than just off the cuff remarks. I think that maybe other people echo my sentiment in that sometimes [name deleted] does get shouted down, other people do get shouted down for not providing anything of value to the list and that, if 50 people are taking the time, or 100 people are taking the time to read your email, you know, you should have something to say, but even that, it depends, on how people perceive the worth of the message. But generally I just think that people value that forum for discussion and tend to think, hopefully before they put something in there, you know or somebody starts spamming the list or somebody forwards something inappropriately, there is feedback to kind of prevent that from continuing on an ongoing basis. (Dave McClure, interview, October 7, 1996)

In addition to reflecting its quick fire and wide-ranging character, these statements highlight the public performance aspect of the mailing list, and the way informal mechanisms of social control, rather than moderation from any authority, served to discipline participation. The fact that anyone could join the list and post anything to it does not mean there were no rules, only that these were largely unwritten, and
enacted—performed as writing—on the mailing list. Periodic outbreaks of flame wars were a given from early 1996 through the end of 1998, and though less fractious in later years (1999-2003), continued to flare up throughout the life of the cc list.

Cyborganic Gardens Website

The Cyborganic Gardens website was central to both the community and the business start-up. The site was designed and produced by the company principles who formed Cyborganic’s Web team: McGillis, Donaldson, and Hess. As Design Director, McGillis created the “look and feel” of the Gardens and did most of the graphics production for the site. As “Gardner-In-Chief,” Donaldson was responsible for its editorial voice and most of the copywriting. As Director of Web Production, Hess was responsible for building and maintaining the site (i.e. HTML and cgi coding), and managing the volunteers and staff who contributed to it. Launched in spring 1995, the Cyborganic Gardens website was a key expression and forum of the Cyborganic community. It was actively “gardened” by Cyborganic staff and community members through November 1996, maintained less actively thereafter, and ceased to be accessible at www.cyborganic.com around the time the company filed for bankruptcy in October 1997.

Though the site itself was produced through the business, member homepages and creative projects were the primary content featured in Cyborganic Gardens. The goal was to demonstrate the value and power of self-publishing by
supporting and showcasing community members and their work. Cyborganic’s business and community strategies were essentially the same: gather people around mutual interests and concerns; support expression, the sharing of stories, and many modalities of communication\(^1\) among them. The business proposition was that revenues could be generated from hosting this population of users, either through membership fees, sponsorships, advertising, or some combination thereof. In his consulting work, Steuer advised corporate clients on how to attract and host such populations on the Web, identifying five basic strategies as “the five C’s”—content, community, commerce, context, and connectivity. He advised those seeking to create Web “portals” (i.e., sites that serve as points of entry to the World Wide Web) to choose one of the five as a primary focus and add elements of the others as appropriate. This was exactly the strategy taken for Cyborganic’s website—a focus on community and self-publishing with elements of the others incorporated organically within the framework, and imaginary, of community. Cyborganic Gardens consisted of four main sections—the Forest, Orchard, Valley, and Shed—which together articulated this strategy.

\(^1\)That is, one-to-one, one-to-many, text, graphical, multimedia, online, face-to-face.
The Gardens website launched with 34 members, including: author Howard Rheingold, proto-blogger Justin Hall, Hotwired’s “Ask Allison” columnist, Allison Yates, Anon Salon founder Mark “Spoonman” Petrakis, and Telegarden creator Ken Y. Goldberg. Most Ramona Empire residents (10) and a number of Wired and Hotwired staffers (6) also had Cyborganic homepages when the website went online in the spring of 1995. Within nine months, 86 people had homepages in the Forest.
To foster browsing and new connections among members, the top-level Forest page (above) featured quotes from and links to five different homepages each
time it was reloaded, with graphical links to “see five more,” and text links to “new members” and “most recently updated” homepages. Those searching, rather than browsing—two basic modes of navigating hypermedia—were offered a “boring list of just names.”

The Forest was also home to Cyborganic’s carving tree where website visitors could leave short messages (less than 140 characters) for one another.

Figure 5.9: Input form for carving the Cyborganic tree

As the screenshot above indicates, users could leave a name that would link to any URL entered under “Homepage”, along with an e-mail address that would
display as a “mailto” link. In terms of the social design of this feature, none of these fields were required. Authors might choose to identify themselves and link to detailed personal information, or might broadcast messages anonymously or pseudonymously (often identifying themselves to a particular in-group). Later, a picnic table was added as another environmentally friendly surface for virtual graffiti. Like physical world graffiti, these communications were public, highly idiosyncratic, and usually anonymous. The imagery of carving served as a metonymic connection to hands that “carve” trees, picnic tables, and—in less rustic contexts—write on desks and restroom walls.

*The Orchard*

Business websites were hosted in the Orchard, the area for “commerce without commercialism,” which, as the website explained, meant “buyer and seller are real people to one another.”

On the Net, we have a chance to reinvent commerce, a chance we can’t afford to miss. Newcomers to the Internet toss up billboards and toss around metaphors, subsuming the brave new medium under tired old ideas. Cyborganic will resist doing things the easy way. We will present online commerce as a new kind of interaction, where buyer and seller are real people to one another, not numbers, where advertising means information. (Cyborganic website, Orchard page)

The Orchard remained small, hosting a total of seven sites, for approximately two years. These were websites for Calliope, a CD-ROM company; Maus Haus, an information design firm; Erg8, makers of handcrafted furniture; Yoga Journal, America’s preeminent yoga magazine; New Dog Music, a sound and video
production house; Abbe Don Interactive, Inc.; and Neil Singer, M.D., primary care physician for a number of Cyborganics. Some of these websites were built for a fee by Cyborganic’s production team, others were the professional websites of community members who created and maintained their own online presence. The production and hosting of these Orchard businesses provided a small, but steady stream of revenue to the Cyborganic start-up.
Figure 5.10: The Valley, Cyborganic Gardens website
The Valley

Billed as “the Best Site-Seeing on the Web,” the Valley was a showcase for the creative work of Cyborganic community members. It was composed of five “distinct content areas,” each for a different type or genre of work.

(1) The Hothouse highlighted the most frequently updated or popular websites and included the Web’zine Blaire, the Eyeneer Music Archives, and The Wedge, an online adventure game.

(2) Field of Vision presented graphical art and included the collage work of Winston Smith, who did many album covers for the 1980s punk band Dead Kennedys; and The Gifted, a graphic novel released serially on the Web by Cyborganic community member Stephan Rice.

(3) Scroll Downs focused on writing, “works of fiction and nonfiction created by Cyborganic wordsmiths.” It featured the “ezines” Anonymous and Garret County Journal; Nick Monfort’s literary journal, Plaintext; Cron Job, a geek humor column; as well as more experimental forms, such as the “prose sushi” of 54, a series of 54-word stories, and the hypertext art and poetry of a publication called Present.

(4) Reflecting Pool was what would today be called the Garden’s “blogroll,” and was described as the “personal observations, political rants, and narcissistic

12 Cyborganic member Nick Montfort later co-edited The New Media Reader (Wardrip-Fruin and Montfort 2003), and wrote a book on interactive fiction (Montfort 2005).
navel-gazing” “of Cyborganic’s most self-motivated, self-aware, and self-conscious Web creators.” It featured some of the earliest online diaries before these were called “blogs,” most notably, *Links from the Underground*, started in 1994 by Justin Hall who is widely recognized as a “founding father of personal blogging.” Hall became a Cyborganic during his internship at *Wired* in the summer of 1994. His site was part of the Gardens when the website launched and was hosted on Cyborganic’s servers for over a decade. The *Reflecting Pool* also featured Howard Rheingold’s *Brainstorms* website, *Rebecca’s Revenge* (later *Read Me*) the “daily zine” of technology journalist Rebecca Eisenberg, and the Web diaries of other Cyborganics, such as *Dom.net*, kept by Dominic Sagolla.

(5) The *Hotbed* section of the Valley hosted socially and politically active organizations on the Web. It was home to John Troyer’s *The Safer Sex Page*; the *Belongings* website for the California Housing Partnership, a organization for the homeless; and *South to the Future*, a collective of professional and amateur “writers, artists, activists, academics, programmers, retailers, [and] designers.” *The Safer Sex Page*, an archive of educational material on the prevention of HIV/AIDS, had long been a resource for the Internet community and was accessed by more than 35,000 people weekly when it was transplanted to Cyborganic Gardens in January 1996 where it was hosted

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on donated “bytes and bandwidth” for over five years. One of eighteen plaintiffs named in the American Civil Liberties suit against the Communications Decency Act of 1996, “Troyer, dba The Safer Sex Page,” was committed to the belief that people, particularly minors, should be able to access the website’s potentially life-saving information anonymously.

The selection of websites and personal homepages featured in the Valley’s five content areas were rotated regularly by Cyborganic’s Gardner-In-Chief “in order to exhibit new and promising work from the community.” Though never implemented, there were plans to sell “sponsorship opportunities in the Gardens” and the marketing materials produced to solicit advertisers focused specifically on the self-published works in the Valley, and on *Geek Cereal*, a group blog produced by the Cyborganic business, but written by community members.

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15 Cyborganic Gardens brochure, 1996.
In spring 1996, Cyborganic staff began work on *Geek Cereal*, an online group diary that offered website visitors “a day-by-day look into the lives of 7 real-life Bay Area Web industry workers.” Donaldson led production and editorial development on the project, assembling the group of “real life” geek diarists, and the team of 11 who did the design, graphics, editorial, data entry and programming for...
the site. A Perl programmer was hired to build the backend system for publishing and maintaining the Web serial.

I was hired...in the summer of 1996. My original role was to develop a publishing system for a project called “Geek Cereal”, which was Cyborganic's attempt to enter the content provider arena and have a place to sell banner ads. The idea of Geek Cereal was to create an online group journal, sort of an online version of MTV's Real World, only more real. (Hise 2001\textsuperscript{16})

As Hise says, \textit{Geek Cereal} was part of the company’s plan to sell advertising on Cyborganic Gardens. Though brochures and rate cards for potential advertisers were printed, and the serial ran “You Ad Here” notices on its main pages, Cyborganic never found someone to do advertising sales on commission and no sponsorships were ever sold.

\textit{Geek Cereal} went online on March 30, 1996 with seven geek diarists. They were: Caleb, Cyborganic’s Gardner-in-Chief; Bryna, Cyborganic’s office manager; Allison of \textit{Hotwired’s} “Ask Allison;” Rocky, a Santa Cruz geek who worked at Organic Online; Jeremy, a research scientist at Apple; Rebecca, a technology journalist; and Scooter a freelance writer and Web designer. All were members of Cyborganic’s face-to-face and online community, had space bar logins, and attended TNDs. Each day, one of them would post a “serving” of \textit{Geek Cereal} to the website and three or more others would respond with “side orders.” Jeremy reported and reflected on the Geek’s posts in a weekly “Sunday Brunch” column. A “BackTalk”

feature enabled visitors to post their own responses to the website. None of the geeks were paid to write for the serial that ran daily for about seven months with its final post dated October 24, 1996.
The Shed

As one might expect, the Shed in Cyborganic Gardens housed tools and other resources for Cyborganic community members.

Figure 5.12: The Shed, Cyborganic Gardens website
The Shed served as the member support area where site visitors could learn more about Cyborganic, become members, or sign up for one of the mailing lists; and where members could access their Cyborganic accounts along with a variety of online publishing resources. The weekly Dispatches from Thursday Night Dinner, as well as the biweekly Almanac with news of the Gardens website, were also housed in the Shed. Though these were both published through Cyborganic’s business project, the HTML tutorials, tracking, and publishing utilities included in the Toolbox section of the Shed were created and contributed by community volunteers.

**Place, Networked Media, Community: Cyborganic Innovations and Synergies**

For more than three years, Cyborganic’s business project, face-to-face, and online communities co-existed symbiotically in the manner described. In representing the people, parts, and practices that constituted Cyborganic, I have worked to show the inseparability of the business and community projects, and their mutually reinforcing articulation online and onground. The depiction presented serves the first of my monograph’s objectives (the milieu of innovation argument), and also the second (examining the relations of entrepreneurial and communitarian), in two ways. First, it details a number of innovative forms and uses of networked media within Cyborganic that have—with the rise of blogging, websites like Friendster, Facebook, and MySpace, and a host of other many-to-many media collectively known as “Web 2.0”—become predominant. Second, it illustrates the vital roles place, culture, and dense social ties of community play in milieus of
innovation by showing the multiple synergies of Cyborganic’s online and face-to-face, entrepreneurial and communitarian dimensions.

In its focus on community and self-publishing, Cyborganic prefigured many of the norms and forms of media production and consumption that are dominant on the Internet today. The idea of bringing online community to the Web was not original to Cyborganic but an extension of earlier Net practices and culture. While Cyborganic was certainly one of the first, other Web community companies were launched around the same time as Cyborganic Gardens in April 1995. GeoCities, started at the end of 1994, began offering free homepages in mid-1995; theglobe.com, a community portal known for chat, went online April 1, 1995; and Tripod, a free and paid Web hosting service aimed at college students, opened the same year. Each of these companies called their members and website an “online community,” and each offered the same basic services—server space for hosting homepages, a set of Web editing tools (e.g. theglobe.com’s “Website Builder,” Tripod’s “Home Page Builder”), themed content areas (e.g. “neighborhoods” on GeoCities, “Cities, Districts, and Interest Groups” on theglobe.com), chat rooms and other discussion forums. Like The Cyborganic Corporation, these companies saw selling advertising on user-generated content and hosting homepages under the

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17 For example, John Coate’s “Cyberspace Innkeeping: Building Online Community,” first published on the WELL in 1992, outlines principles for those in “the relationship business” of hosting communities online. (Coate 1992)

18 These are Web-based tools that enable people to make Web pages without knowing HTML, and preview and publish them directly from the Web browser.
rubric of community as a viable business. GeoCities also had a “Community Leader Program” that deputized volunteers as hosts and moderators. Unlike Cyborganic, these companies all raised significant investor capital and grew rapidly in the first wave of the dot-com boom. GeoCities went public in August 1998 and was purchased by Yahoo! in 1999 for $3.57 billion; theglobe.com raised $27.9 million with its initial public offering in November 1998 and had the largest first day gain in share price to that date; and Tripod sold to Lycos in February 1998 for a reported $58 million in stock. (Brown 1999)

Success raising investment, however, was not the only difference between Cyborganic’s business and these companies. Cyborganic was distinct in its allegiance to the idea that the most meaningful online communities are local and include face-to-face forums. Its place-centric model of community and plans to open a “bricks and mortar” café set Cyborganic apart from other online community companies. Though Cyborganic’s business plan included expanding beyond San Francisco, the idea was to grow by replicating the local, online/offline hybrid in other cities. There was, in fact, a New York City satellite of Cyborganic, led by Steuer’s brother David, which held its own Thursday dinners and published a group blog, *The Couch*, using the same back-end publishing system as *Geek Cereal*.

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19 A phrase popularized in the vernacular of the dot-com boom to distinguish physical storefronts and locations from virtual ones.
Despite sharing technical infrastructure, however, the two place-centered communities were largely independent of one another socially.\textsuperscript{20}

Cyborganic also differed from other community-based Web start-ups—and prefigured the contemporary Web—in its approach to user-generated content. The large, funded start-ups were aimed at people who were new to the Internet. They focused on marketing free homepages to a large population of users in return for including banner and pop-up advertising. Cyborganic was pitched at the technology-savvy, but also provided free homepage hosting to its early members, and to project volunteers after fees were instituted. However, Cyborganic’s view of user-generated content went beyond homepages. The Cyborganic Gardens website, the main product, or prototype, of the business vision other than TND, centered on member self-publishing and featured member work as its primary content in the Valley section of the site. Already noted is the example of Hall’s \textit{Links from the Underground}, one of the earliest blogs on the Web with a large audience. Beyond showcasing the homepages of members who posted daily, Cyborganic created an editorial section, the Reflecting Pool, for Web diaries as a distinct genre before these came to be called blogs. In addition to promoting people who were already blogging, Cyborganic encouraged the self-publishing projects of all its members, and worked

\textsuperscript{20} The Cyborganic business in San Francisco hosted Web and e-mail services for the New York group, but the New York Cyborganics were not active on the cc list or space bar, though some had homepages in the Forest. Due to this separation and the fact that I did not undertake fieldwork among the New York Cyborganics, little mention of the group is made in this work.
to aggregate and curate their artistic work and collections (e.g. Eyeneer). These were supported with publishing tools, utilities, such as a staging server, and, for those the Gardner deemed worthy, prominent placement in Cyborganic Gardens.

While the idea that self-publishing is “what the Web was made for” coincided with Cyborganic’s communitarian project, in terms of innovation, the business project took the idea a step further when it launched the group blog *Geek Cereal* with plans to sell advertising on its pages. The Spot, a website on which fictional characters kept online journals, launched nine months before *Geek Cereal* and ran paid advertising and product placement within the journal entries. Yet, with fictional characters played by models and entries authored by a writing staff, The Spot was not a blog. *Geek Cereal*, however, was a blog, written in the diary genre by the featured geeks. It was also among the first Web publications posited on the belief that blogs were, or soon would be, viable advertising-supported content. In 1995 advertisers were still largely unconvinced that sites like GeoCites, let alone blogs, had any potential to carry advertising and there were, as yet, no companies, such as DoubleClick, specialized in serving Internet ads. Today, after the boom and bust of the dot-com era, dozens of companies (e.g. Google’s AdSense, Adgenda, Technorati, Gawker Media, and Federated Media) are in the business of making a market matching blogs and other user-generated content with advertisers. As one company website describes:

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21 Cyborganic brochure, 1996.
With a readership in excess of 20 million monthly uniques, Gawker Media marries a traditional publishing model and an all-star editorial masthead with the audience engagement borne out of the candor, frequency and hyper-linking of the blog format.22

The growth of this market bears out Cyborganic’s anticipation of blogging as a popular Web practice and genre that would be able to attract advertisers once critical mass was attained.

Cyborganic Gardens also featured a number of other innovations that prefigured the type of instant, bite-sized, messaging common today among users of social networking sites. The Carving Tree and Picnic Table where visitors could post short messages in the Forest presaged such Web 2.0 practices as writing on someone’s “Wall” in Facebook, or “micro-blogging” on Twitter23. Some of these social networking sites, such as Twitter, afford anonymity just as Cyborganic’s carvings did; others require authentication. Space bar’s Cadet Detector was another innovation of this type. Displaying availability in the chat across media on one’s homepage not only served the phatic functions already discussed within the space bar community. It also marked one’s association with that community, and identity as a geek familiar with command line interfaces, to people who might be outside both publics and accessing the Internet for the first time with the advent of the Web. All these are asynchronous, many-to-many forms of computer-mediated-


23 http://twitter.com/
communication that involve short messages, personal in voice, but published in a public or semi-public forum. Variations of this type of hybrid personal-public messaging have become ubiquitous today.

Archetypically used for status or location updates, “presence layer” would be a technical term for this form of communication that has proliferated with the rise of the mobile Internet and social networking. Cyborganic innovated, not only in the technical implementation of the Carving Tree, Picnic Table, and Cadet Detector, but also in the communications practices and social contexts in which they were deployed. To illustrate the distinction between underlying technologies and the practices they support, I note that while detecting a user’s status in the chat and publishing it to the Web was innovative, space bar itself ran on chat server software (vrae) that was based on very old Unix-CB code. Yet, among a community of Internet geeks who spent all day at their computers and kept a window to space bar open, the old software supported a form of synchronous communication, “live” chat, found today in several many-to-many variants—from Internet Relay Chat (IRC) to Web chatrooms—as well as the one-to-one messaging popularized by AOL Instant Messenger (AIM). This one-to-one mode of live chat has become dominant, in fact generic (IM), with protocols that enable most chat clients, whether AOL’s or another maker’s, to interconnect. Yet, the older text-only, many-to-many chats continue and their use carries a certain cachet with geeks. One indicator of the contemporary vitality of this practice: there are several IRC clients for Apple’s recently released iPhone. Space bar itself was also used as a presence layer when people idled in it and
used the “nicknames” feature to set customized status and away messages. In the social context of Cyborganic, even such pre-Web forms as the mailing list were sometimes used the way instant messaging and Web services like Twitter are used today. For example, a post to Cyborganic’s San Francisco list seeking near real time information—“quick, what's the name of the gas station on the corner of 16th and Guerrero?”—that was answered within 12 minutes.24

The first part of this analysis drew out particular forms and practices of networked social media to highlight the innovation of Cyborganic’s business project and community. Having established earlier (a) a many-stranded (socio-cultural, historical, regional) genealogy showing San Francisco’s Internet industry in the 1990s as scion and satellite of Silicon Valley’s milieu of innovation; and (b) Cyborganic’s kinship and inheritance in these lines; I turn now to examine what the Cyborganic case suggests about the role of place, community, and culture in generating and sustaining milieus of innovation. Or, to come at it from another angle, having looked at what made Cyborganic innovative, I turn to ask how that innovation was produced. What specific characteristics of the Cyborganic whole supported it, and what, if anything, do these suggest more generally about the productivity of producer/users and their communities of practice? Generalizing from a situated, ethnographic study, of course, is best done with a good measure of circumspection, noting, for example, that one is speaking of connections, correlations, and factors,

24 Marjorie Ingall, e-mail to cc list, December 4, 1998.
rather than universal criteria and causes. Thus, let me specify at the outset the scope of argument. Cyborganic shared a host of characteristics with earlier communities of producer/users within which networked personal computing developed. I see these as clustering around three key terms—place, community, and culture—which, translated into emic (“native”) argot, might also be rendered as “face-to-face,” “synergy,” and “collective intelligence” (learning or knowledge), though all these terms are applied in emic and etic discourses that, to complicate the matter, overlap in significant ways.

*Place: “Flesh and Blood Back Channel to Community”*

The significance of place has been an underlying theme throughout this work from (a) its epistemological basis in Soja’s “ontological nexus of space-time-being” (1989, 25); (b) the “community of technical scholars” Terman forged in Silicon Valley; (c) the fairs, hobbyist clubs, and local businesses that ushered in personal computing; and, finally, (d) Cyborganic’s location as a place-based community, within a network of other enterprises and communities in San Francisco’s SOMA district in the 1990s. Despite the complex manipulations of time and space that information technologies have increasingly afforded in the last century, physical co-location in *particular places* remains a significant factor in technical innovation and economic productivity. Terman recognized the value of bringing government (military), university, and commercial research and development together around the Stanford campus where he grew up. Steuer recognized the value of locating his
Cyborganic vision in a particular place and brought it together around the group household on Ramona Avenue where he lived. In both cases place was not incidental, but a purposive premise and strategy. What this “great man” angle of exposition obscures, of course, is that, so far as production and projects are concerned, places are made by the jobs and people one finds there. While space and our bodies require that we be somewhere, mere physicality does not seem to keep us in the places we are born. This is one of the most salient features of 20th century human geography. For this reason, I stress co-location (of people, jobs, communities) in particular places, rather than say, geography or space.

The co-location of its members in San Francisco’s adjoining Mission and SOMA districts was certainly one of the most salient features of Cyborganic. Without diminishing Steuer’s role, I see the group household on Ramona as the basic unit from which Cyborganic grew—co-located individuals not individuals per se. The affordances and constraints of space are evident everywhere in Cyborganic from its growth in the neighborhood around Ramona Avenue; its proximity to SOMA arts, organizations, and communities; to its location in San Francisco’s northeast quadrant at the confluence of the City’s main traffic arteries (U.S. 101, Interstates 80 and 280), which gave easy access to companies in the City, East Bay and Silicon Valley. This situation was no accident. It mirrors the university and industry connections linking San Francisco and the East Bay to Silicon Valley. At the time he moved to San Francisco, Steuer was a graduate student at Stanford already spending most of his free time at shows, events, and parties with friends in the City. In addition to
affordable rents, the Ramona neighborhood was ideal for commuting both across the Bay and "down the Peninsula." Its proximity to all the area freeways saved travel time, a factor that weighed in his and his roommates choice to live in that part of the City.
Cyborganic’s virtual domains and capillary connections to the Internet through the LAN were crucial to its productivity and reach but, like freeways, wires are subject to a logic of place. The Little Garden (TLG) cooperative, through which Cyborganic procured full-time network connectivity in 1993, served a regional network. The T-1 Internet line TLG leased from UUNET was split among geek networks in Santa Cruz, Silicon Valley, San Francisco, the East Bay, and scattered outposts up the Coast. Physicality also circumscribed the Ramona LAN that was connected with 10Base-T UTP Ethernet, CAT5 cables. With these standard components, the maximum distance between network nodes is limited to 100 meters (328 feet), or as the U.S. technical literature puts it, a little less than length of a football field. No computer on the Ramona LAN could be more than 328 feet from a server, hub, or switch (devices used to relay data over a network). Thus, TLG’s San Francisco members, who split the line coming up from the UUNET connection in Palo Alto, did not form a local area network together, but built more local LANs that “hung off” TLG’s San Francisco gateway. Cyborganic connected to the gateway (i.e. the Internet) through a residential telephone line used in an innovative way—to make a permanent phone call from one computer in the City to another. In this way, the physical limits of affordable technology and bandwidth shaped the local community, limiting its growth around Ramona Avenue. Though Abbe Don’s

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25 Initially, there was 56k frame relay line between UUNET in Palo Alto and TLG’s San Francisco gateway. After usage grew, a separate T-1 line was added from UUNET in San Francisco to TLG’s gateway in the City.
apartment above Dolores Park was connected to the Ramona LAN via an ISDN line (which can be 200-500 meters in length), this would have been a prohibitively costly option for most in the community who lived outside the 328-foot radii of the Ramona server and Dolores Street hub.

What is it about co-location in place that contributed to Cyborganic’s project for business and community? The phrase “face-to-face” that appears so many times in this manuscript and is evoked by the Cyborganic logo of two stylized smiling faces (below) holds the key. This image of sociality captures all the elemental affordances that face-to-face interaction holds for human social animals—shaking hands, building trust, seeing eye-to-eye, sharing food, bodies, and daily lives.

![Figure 5.14: The Cyborganic logo](image)

Trust forms the basis for cooperative action whether that action be organizing a rave or launching a start-up company with no budget. Breaking bread, partying, and “hooking up”—to speak in a most colloquial way—were not trivial to the value
Cyborganic produced.\textsuperscript{26} Face-to-face interaction was foundational and Cyborganic grew around the group household that was the first outpost of the “Ramona Empire” and spread through TNDs and the inter-office cliques that ate lunch and often dinner together in SOMA. Meeting in-person in the course of everyday life—at home, work, and play—serves to enrich dialog and discourse. This kind of intimate social activity also works to build trust, not only between pairs of people, but among groups of people. In this way, the communication and interaction that co-location in place affords was the basis for community and culture, two other factors I will discuss as fostering Cyborganic’s innovation.

Computer-mediated-communication was instrumental to Cyborganic’s collaborations and relationships, but especially so among those who also interacted in-person in everyday life at home, work, and third-places, such as TND. For example, though the space bar chat could and did support national and international exchanges, it was a place-centric online forum. This was all the more evident in the way space bar regulars, whether local or remote, tended to move closer in physical space and daily life as they became more closely connected to others in the chat. As community member Ryan Powers recounted:

My friends Mark, Brian and Fixer, all live together now because of space bar and the community. That’s how they met up and found each other and found a place to live. Another friend, Heidi, was living in Idaho. It was cold, her job was not working out, and she was totally

\textsuperscript{26}“Trivial” has most favored word status among geeks and is typically used in negative understatement, for example, a problem that is extremely difficult or insoluble, will be described as “nontrivial” (Cf. Raymond 1996).
isolated. She came across space bar and she found her way here. She wound up moving in with me, in my house, because I had a room open. It was all because of the community. (Davidson 1996)

This was precisely the insight at the core of Cyborganic’s vision and practice—face-to-face and online interactions are mutually sustaining and can be used together to build uniquely robust communities.

Cyborganic will establish a real space for members to meet and interact—a flesh-and-blood back-channel—to its community-building efforts in cyberspace. (Cyborganic Garden website, “Our Big Plan”)

This line from “Our Big Plan,” one of the manifestos on Cyborganic’s website, conceives of “real space” as a “flesh-and-blood back-channel” for interaction “in cyberspace.” This is a thoroughly infomated imaginary of place. Here “back-channel” implies all the informal, unofficial, communications and interactions around a main channel, typically metacommunications (e.g., phatic functions). In telecommunications, back-channels are usually lower-speed transmissions flowing in a direction opposite the main channel. Thus, the irony of a flesh-and-blood back-channel is that face-to-face offers a far richer spectrum of communication. All sorts of informal, sub- and preconscious transmissions flow across it in full duplex (i.e., in both directions). The blend of “flesh-and-blood” connection in “real space” with online interaction proved extremely powerful and generative. Cyborganic created trust building face-to-face forums and occasions and combined these with the flexibility, ease, lower cost, and greater reach of networked computer-mediated-communication. This combination resulted in a community co-located in places online and onground, and in the hyper-experience that results when these two are
deeply intertwined. The Cyborganic case illustrates that even in the
telecommunications age, place continues to be important to communities of
producer/users and forms the basis of their communion.

Community: Frame, Synergy, and Glue

My account of Cyborganic illustrates the exchange that occurred across the
group’s online and face-to-face, entrepreneurial and communitarian imaginaries,
practices, and other instantiations. “Synergy” is the emic term used to describe the
coopeorative action of two or more actants (nerves, muscles, drugs), and the
cybernetic overtones of the word are apt. In addition to coordinating action through
positive and negative feedback, Cyborganic connected discrete fields in a way I find
useful to think of as cross-pollination. By this I mean individuals were connected
through multi-stranded ties in overlapping social networks that extended through all
domains of life; and exchanges traveled across boundaries by a variety of
conventional, opportunistic, wind-blown, and instrumental means. As complex and
messy as all this interconnected exchange sounds, laymen and experts have a
common word for it: community. Terman brought military, university, and business
interests together in a “community of scholars,” Turner described the WELL as a
network forum “within which information exchange, community building, and
economic activity took place simultaneously” (2005:491). In these, as in the
Cyborganic case, the imaginary of community and practices it informed are the
frame and glue that bind. Community catalyzes and supports synergy, as a matrix of cross-pollination, but also as thickening agent, fixative, or gel.

In Cyborganic, multi-stranded ties and overlapping networks linked individuals in a field of relationships extending from personal intimacy to public reputation. These included kinship, school ties, hometown and regional networks, co-workers, courtship and sexuality, and membership in a variety of occupational, cultural/ethnic (e.g. Jewish), and sub-cultural (e.g. raver, geek) identities, practices, and organizations. Though marriages and births far exceed them in number as of this writing, during its most active period (1994-1997), siblings were the most commonly occurring kin unit in the Cyborganic community. For example, the Steuer siblings (Jonathan, David, and Ellen), the Nelsons (Jonathan and Mathew), and the Haigs (Dan and Bagus) were all central actors and key nodes of connection in the Cyborganic project. All attended the same public high school, Nicolet, in a suburb of Milwaukee, Wisconsin. While in school, those in the same age cohort collaborated on a number of small, moneymaking ventures with classmates who later contributed to Cyborganic. Steve Bahcall, who lived in the group household on Ramona from 1993-1998, was part of the group, as was Knitting Factory founder, Michael Dorf, and his brother Josh. The Knitting Factory, an alternative music venue in New York that grew into a recording label and concert promotion business, was to have partnered with Steuer and Nelson in the CHANCE business plan that preceded Cyborganic. Though that plan did not bear fruit as such, regular exchanges of work, knowledge, and opportunities took place between the Knitting Factory and
Cyborganic for many years on the basis of this earlier association. The high school cohort served as a model for collaborating with friends on subsequent projects. It also connected Cyborganic in networks of others from Wisconsin, mostly through the University of Wisconsin system, with the result that approximately 15 percent of those with homepages in the Forest hailed from the state. Other university networks operated in the same way, with small groups of friends who had been to college or graduate school together forming the basis for sub-groups, or cliques, within the community.

These sorts of kin and age-cohort ties were the vectors of Cyborganic’s growth. They cut across domestic and public spheres, linking individuals, families, firms and intensifying with time. For example, half-sisters Leslie Rossman and Halley Silver were both vital to Organic Online during its start-up phase. Rossman was the company’s publicist; Halley and Dan Haig did all its Web production. Soon after Matthew Nelson moved to San Francisco and partnered with his brother in Organic Online, he and Rossman began dating and later married. Another example, after entering Mills, a women’s college in Oakland, California, Ellen Steuer began bringing classmates to TNDs. Several became regulars and formed a clique of their own within the community, The Lotus Eaters, that linked Cyborganic to the East Bay, and to a group of women who were 5-10 years younger than most Cyborganic members. Given that men far out number women at most technology industry events,
the fact that TNDs were attended by almost as many women as men was an important factor in their success, to which this Mills connection contributed. Like the group from Nicolet High School, most Cyborganics brought friends, relatives, and co-workers into the community, just as Steuer recruited me to the project from among his college friends. In this context, multi-stranded connections fostered enriched communication and high-trust. Hiring friends, relatives, and personal contacts was considered practical, rather than nepotistic, and, in many contexts, ideal. In the early days, when there was a shortage of people with HTML and other Web production skills, there was tremendous advantage in hiring people you knew could learn, and with whom you had the rapport to work in a fledgling field where hours were long and projects accomplished primarily through peer-to-peer interaction. The flow went both ways with some learning about Cyborganic in their workplaces and joining the community, and others entering the Web industry through their connection to the community.

In addition to overlapping, multi-stranded social ties, Cyborganic’s community and business projects showed several other kinds of cross-pollination. The mixing of leisure and labor, arts and engineering, production and consumption of networked media—all worked to catalyze innovation, promote cross-linkage, and build trust. TND exemplified blending across all these boundaries and was created

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I do not have TND attendance breakdowns by sex. Cyborganic’s core membership was roughly 65% men, 35% women, but sex ratios at TND were slightly more balanced, based on my fieldnotes and on the TND Dispatches.
and sustained with that mission in mind for that was the vision for the Cyborganic Café. The Great American Music Hall, the monthly raves Friends and Family and ComeUnity, Survival Research Labs shows, and the Burning Man Festival were other recreational forums where Cyborganics interacted. All encompassed a range of technologically intensive arts (techno-music, large outdoor audio systems, visual projections) and served as venues where friends and co-workers socialized.

As those who pioneered personal computing in the 1970s and 80s, and those who work on open source software today, the Cyborganics who worked in the developing Web publishing industry were both producers and consumers of the products and services they made. Such situations tend to be highly productive, not only because individuals have genuine passion for their work, but also because of the beneficial feedback loops that result. All these connections were framed by the imaginary of community at the root of Cyborganic and were held together, not only through the instrumentalities of the project, but also by the sharing of everyday life within a local community. Though communities of producer/users like Cyborganic existed long before the Web, networked telecommunication facilitated the fast, flexible transfer of contacts, tools, and practices from one domain to another, and made it easy to maintain a wide range of “weak-tie” associations (Granovetter 1973). The new media rendered informal sociality more powerful. Through space bar, Cyborganics could be with friends, in a place of their own, while at work. Through the cc list, they could learn about local events and issues, while keeping abreast of the latest news and gossip in their community, the Web industry, and the world.
Of all the cross-boundary exchanges within this local community, the transmission of knowledge and skills was one of the most significant. It was central to the community’s productivity and innovation, but also, I would argue, to the value and pleasure of being a Cyborganic. As the last chapter emphasized, the development of Web publishing required new production processes, new ways of organizing the labor of design, engineering, and business teams. During the upswing of investment in Web businesses, there was urgent demand for features and functionalities that had not before been implemented on a large scale. These included, for example, websites of hundreds of pages that would continue to grow on daily basis, Web-based authentication systems that could support hundreds of thousands of users, and a new advertising-supported genre called a “portal.” In addition to these engineering challenges, design and content production teams had to establish and disseminate a great deal of micro-knowledge, such things as legal file names, directory structures, version control, or knowing to change an image from index color to RGB format before resizing it. In this context, having co-workers who were also Cyborganic members facilitated communication in figuring out how to do work for which there were as yet no established procedures; flexibility when things did not go according to plan; and morale during launch periods when teams worked over 50 hours per week. Cyborganics worked at all the businesses diagramed in Figure 4.1 (and Appendix D), making up most of the Hotwired, CNET, and Organic...
Online launch teams and significant portions of the founding staff at Third Age, Electric Minds, and Critical Path.

Even those who worked from home, or in offices with no other Cyborganics had the benefits of this sort of knowledge sharing. TND was an important hub for this sort of exchange. There was always someone using the Silicon Graphics (SGI) Indy\textsuperscript{28} in the office during TND, and usually a group looking on, or someone hovering in the hallway, awaiting his chance to sit at the computer. Around this workstation, many were introduced to VRML (a format for displaying three-dimensional graphics on the Web) and other multimedia technologies that were new at the time (e.g., CU-SeeMe, a Web conferencing client). Discovery and learning took place at many levels of technical experience and areas of interest. Some learned to make their first HTML pages at TND and were encouraged to try their new skills out in a TND Dispatch; others learned Perl, VRML modeling, and other Web programming and scripting skills through their exposure to them at TND. The reach of this collaborative learning and exchange also extended to Cyborganic’s online forums, as the discussions of space bar and the cc list illustrate. Community members often logged into the chat to get help with technical problems, or in setting up systems—a task for which real time, interactive support is especially useful. In addition to these forums, being a Cyborganic meant always having a ready supply of

\footnote{The SGI Indy (introduced in 1993) was a workstation with far greater graphics capacity than PCs of the time, and the first computer to include a video camera.}
beta-testers, people to look over the websites you were building and send “bug reports” describing errors or problems, and other feedback.

The knowledge sharing that took place around the production of new media also took place around its consumption and Cyborganic’s role in demonstrating what people could do with networked media was significant in both regards. New Web genres and features (e.g., blogs, Carving Tree, Cadet Detector) and new ways of using older genres (mailing lists, chat) are the most visible places to observe this education of consumption, but it took place in countless exchanges, most so subtle and spontaneous one might not even notice them as learning. For instance, when I interviewed Holly Kreuter who got her first computer through Cyborganic, I expected to hear about the skills she had gained through membership in the community. Yet the most revealing thing she said was, “I taught the Burning Man organization how to bcc.” Being able to “bcc” that is, to send copies of e-mail to recipients without their names or e-mails appearing in the headers, is not something one ordinarily thinks of as having to learn. Learning to use the bcc field is barely a technical matter. This is precisely my point because there is, nonetheless, much to learn—everything from knowing that the feature exists, to the occasions, and dangers of its use in particular contexts. This is what Kreuter meant by saying she had taught her co-workers at Burning Man to use the feature, not that she had shown them how

29 Holly Kreuter, interview, October 4, 2005.

30 Bcc stands for “blind carbon copy” a rather atavistic acronym in the context of e-mail, but nonetheless, the term that is currently in use for this function.
to find the command in a menu. As noted earlier for the development of personal computing, many inventions require complementary inventions before they can be usefully deployed (Rosenberg 1994:143) and all technologies require a cultural milieu to support their meaningful application. Through its grounding in place, multiple synergies, and community, Cyborganic provided such support to its members, creating a milieu in which personal Web publishing and other applications of the new media could be imagined, practiced, and understood.
Chapter Six

Project for Life: Cyborganic’s Creative and Communitarian Imaginaries

In a self-sufficient agrarian economy a good deal of the extraordinary demands at special occasions, during natural calamites and social emergencies are met by social action that transcends the individual household: the assistance of the neighborhood. For us, the neighborhood is not only the “natural” one of the rural settlement but every permanent or ephemeral community of interest that derives from physical proximity; of course…we refer most of the time to the neighborhood of households settled close to one another.


Community use of the Internet had been pioneered in the rave scene, on listervs like the Well, and in a frankly noncommercial climate of experimentation. The city was home to Wired, which cast a glamorous fervor around all things high-tech and was heir to a legacy of homegrown utopia in influential publications, from the Whole Earth Review of the 1960s to the Mondo 2000 of the 1980s. Everyone who was not a Bay Area newcomer could say, “It was a culture before it was an industry,” and it was common among scene veterans to make a distinction between Web people—devoted to the ideals of transforming communication, shareware, and free information—and dotcommers—who were widely regarded as gold diggers.

Andrew Ross, No-Collar (2003:127)

Thus far, discussion has focused on Cyborganic’s contributions to economically significant firms, products, and practices; and on the group’s innovations in the production and consumption of networked media. While this analysis is accurate in demonstrating the workings of milieus of innovation, it is also incomplete. Looking at Cyborganic’s communitarian practices and imaginaries only as bases for innovation and productivity fails to engage them ethnographically as
meaningful in themselves. The dichotomy Ross describes above between “Web people” and “dotcommers” is an emic one that reflects imaginaries and practices referred to in my ethnography of Cyborganic as utopian and communitarian. By looking specifically at these phenomena, I seek to provide both a sense of their emic meanings, and the analysis that informs my characterization of them as utopian. I also argue that the creation of the Cyborganic community was itself innovative, productive of value, and *expressive of values*, apart from the development of Web publishing, though it is clearly difficult to separate these phenomena. Cyborganic’s social experiment in combining residential, professional, and online community was one in which individuals, most in their early twenties, drew on the network form and Bay Area culture of social and technological innovation, to invent and build independent lives and livelihoods— independent of their parents and suburbia, and independent of mainstream America in terms of work, media consumption, forms and practices of leisure, sexuality, marriage, household, and domestic life.

Though the Cyborganic project took the form of a business and that was central, this elides the fact that most community members had no involvement with the business, either as paying customers or paid labor, and no clear sense of how it planned to make money, even some of those who worked for Cyborganic.

> When I first started going to Thursday Night Dinner people would ask me “What do they, what does Cyborganic actually do?” and I couldn’t really give them an answer, ‘cause I didn't really know, and even when I was working there, it took me awhile to figure out, you know, what does Cyborganic actually even do, where are they getting money from…what’s the deal? (Kat Kovacs, interview, October 8, 1996)
I didn’t have too much involvement with the company side of things. I was one of the member’s of the company’s Geek Cereal project, for which I was never paid. That was my main experience with the company side. My impression was there wasn’t a rational business plan and people in the company were not that interested in business ideas or running a real business. (Wayne Bremser, questionnaire response, September 17, 2004)

It wasn’t always clear to me who was involved in Cyborganic Corporation and who wasn’t, although I knew of Jonathan’s [Steuer] role and who the full-timers were and such. One could guess that their business plan was not as good as their community plan, but who knows? The community plan was pretty good, anyway. (Nick Montfort, questionnaire response, September 19, 2004)

Though it was widely known that the start-up business provided Cyborganic’s technical and social infrastructure, for most in the community that project remained obscure. Cyborganic’s online and offline forums—TND, space bar, the cc list, and Ramona neighborhood—were not constituted as spaces of business, but as spaces of informal sociality. While the business vision was not generally shared, the ideals of “transforming communication, shareware, and free information” that Ross reports were common. They represent a vision of turning technology to social and creative ends inherited from the New Communalists and the “culture of the creators of the Internet” (Castells 2001:37). The legacy of the New Communalists who “stepped away from agonistic politics and sought instead to change the world by establishing new, exemplary communities” endured in the words and practices of my Cyborganic informants (Turner 2005:493).

Cyborganic’s utopian dimensions are best understood as a response to the economic, social, and cultural transformations of network society. I have called this
response a “project for life” to distinguish it from the business project of making a living, and to propose that Cyborganic be understood as a cultural commune 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 network society, 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, he argues, 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, they represent reactions against “three fundamental threats, perceived in all societies, by the majority of humankind, in this end of millennium” (Castells 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 of 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 Castells examines, it shares the central features of a cultural commune. It is in this context that the community’s utopian dimensions are most significant. To illustrate this view, I draw first on the vision of those who led the Cyborganic project; then turn to show that the participation of the community overall can also be read as a response to the economic, social, and cultural transformations of postindustrial society and suburban life.

The Cyborganic business concept itself was articulated explicitly as a reaction to the lack of informal public space and sociality its organizers perceived in the “increasingly suburban landscape” of middle-class American society.

Cyborganic Café—Why now?

People patronize coffee houses, pubs, and malls because they provide a place to meet and engage with others on an informal basis. These locations serve as “third places” for, as Ray Oldenberg describes in The Great Good Place, they offer an alternative to home and work. However, as citizens and critics alike complain, our increasingly suburban landscape lacks informal public spaces—thus adults retreat into elaborate home entertainment systems and teenagers “hang out at the mall.”

Online services offer “third place” opportunities to meet and interact with people but are limited in their ability to provide a context for these interactions. Successful “virtual communities” arrange some way for online friends to meet “in real life” (IRL), for example, both the WELL in Sausalito and ECHO in Manhattan host monthly parties.

As a cross between traditional and digital “third places” the Cyborganic Café will use the latest communications media to fulfill the unchanging human need for community. (Cyborganic brochure 1993)
In its vision of virtual community, Cyborganic drew on the example of the WELL and also on the writings of influential WELL members Howard Rheingold and John Coate. The metaphor of innkeeping Coate employed in his essay “Cyberspace Innkeeping: Building Online Community” (1992) is especially evocative of the New Communalist legacy in its combination of social and economic activity in an idealized image of pre-industrial village life (“butcher,” “blacksmith,” “tavern”) in cyberspace.

For the term “village” (as in “electronic village” or “virtual village”) to be applied to an online scene with any accuracy at all this blending of business and pleasure must be present. Because that’s what a village is: a place where you go down to the butcher or the blacksmith and transact your business, and at night meet those same neighbors down at the local tavern or the Friday night dance. (Coate 1992)

Coate’s essay, which, like the Cyborganic brochure, also cites Oldenberg’s “third places,” was widely read on the Web in the 1990s and established parallels between traditional hosting businesses of European folk society (inns, pubs, taverns) and the work of hosting people online. The concept of an “online village” that the creators of Cyborganic inherited from the virtual-communitarian stream of Internet culture serves to bring the complexities of life in globalized society back to a human scale in the manner typical of cultural communes. For, as Castells has put it, “When the world becomes too large to be controlled, social actors shrink it back to their size and reach. When networks dissolve time and space, people anchor themselves in places, and recall their historic memory” (1997:66). The historic memory of village life in
pre-industrial Europe that Coate recalls from the popular imagination was also recalled in the words of my informants.

Cyborganic is a place for people to come together, it’s a meeting place, a friend of mine called it, I showed him all this and he said a village ‘cause it’s still pretty small and he grew up in the country, in France, and it’s small and there’s this tight-knit community, but it’s online, it’s an online village. (Kat Kovacs, interview October 8, 1996)

The imaginary of the virtual village surfaces so frequently in interviews and research notes that it is easy to overlook as a figure of speech. However, it reveals a collective longing for simpler times, as does the notion of contemporary society being organized in life-style “tribes” in both emic (Raymond 1999, 1998) and etic (Maffesoli 1996; Lévy 1997) discourses.

Cyborganic was also constructed as a defensive identity around preserving the values of an earlier generation on the Internet at a time when uninitiated users (“newbies”) where flocking online in greater numbers every day. In the early 1990s, the Internet was often spoken of as an electronic frontier with homesteading and a wilderness to be tamed¹, but also a cultural legacy to be defended.

I think Cyborganic is trying to retain some of the original notions, well, not original, but earlier notions of what the Internet community was about ‘cause up until a couple years ago you know the Internet community was just wild and creative, inhabited by people who were on the cutting-edge of technology and were interested in the technology for itself, and not necessarily thinking in terms of, “Oh,

¹ For example, The Electronic Frontier Foundation, started in 1990; and “Homesteading the Noosphere,” an influential essay on project ownership, reputation economies, and gift culture by self-described “hacker anthropologist” Eric Raymond (1998).
how can I sell a product on here.” In fact, you know, there was a whole big movement, back around ‘89/’90 of people trying to squash the commercialization of the Internet, people trying to keep advertising and businesses out of the Internet, of course that didn’t happen [laughs], but I think Cyborganic is trying to rekindle that idea, that sense of community. (Brian Calhoun, interview October 9, 1996)

Many Cyborganics had prior online experience and a number had been socialized into Internet culture in forums like the WELL and Usenet. The core of the group’s mission was to bring the kind of community people had found in these earlier forums to a new generation that had come to San Francisco to work in the developing Internet industry.

Like the Cyborganic business, the residential patterns and communal households of Cyborganic members express a reaction to the “increasingly suburban landscape” of middle-class American society. Though most members of the community worked in Silicon Valley at some point in their careers, the vast majority chose to live, and preferred to work, in San Francisco. Some referred to the offices of Mountain View, Cupertino, Palo Alto and other Silicon Valley cities as “Cubeland” (a reference to office cubicles) and scorned its lack of cosmopolitan chic and urban activity. Rather than live near jobs in the Valley’s economic hub, they sought a dense, urban environment in which to build multiple overlapping social networks.

Rather than spread-out residential patterns, dozens of Cyborganic members chose to live in joint-households in the six-block radius of the networked Ramona neighborhood. In this sense, the Cyborganic project should be analyzed, not simply in commercial terms, but as a resistance project that embraced technological
innovation even as it sought to counter the lack of social interaction and neighborhood community its members perceived in contemporary suburban life.

Scholars of the city have long recognized the cultural pattern of “the so-called ‘back to the city movement’ that, in the United States, sees a tendency for middle class professionals to dwell in places of active urban life” (Castells 1982:39 n. 16). Cyborganic and its wider SOMA community might be seen as the evolution of this movement in the 1990s in the context of the Internet. Many Cyborganic members were newcomers to the Bay Area in the early 1990s and the group formed explicitly as an attempt to build local community using the Internet. 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 that a college education would provide entrée to a life long job. However, drawing on the virtual communitarian stream of Internet culture, those who came together in Cyborganic built a community to address a range of basic needs and to experiment with new social and cultural forms.

So monogamy didn’t work at all for our parents, obviously, right. That’s interesting, what can we play with there? How can we make that, how can we tug on that? The idea of not having a community that is close to you physically, that didn’t work so good, how can we change that? We’ve got this group of people that we would spend all our time together with, if we could. Why don’t we find a place together? Co-housing is becoming a huge thing in the community, everybody at Chillitz [a weekend-long festival of techno-music in the country], there were two independent groups, there were stacks of co-housing books around and two different sets of people had brought them
‘cause they were trying to find out how to live with each other.
(James Home, interview, September 24, 2004)

The co-housing trend (i.e., tenancy in common, joint property ownership) that Home describes above only began to emerge in the late 1990s and early 2000s—when some community members had (a) sufficient earnings to purchase housing, and (b) were, on average, in their late twenties and early thirties. Yet, the practices and imaginaries of everyday life it expresses clearly extend those with which Cyborganics experimented in the early days of the Web. These include, not only the group households and local community described in the last chapter, but also practices of polyamory\(^2\), group and open marriage, which, though documented in my field research, were not the focus of the Cyborganic project nor of participant-observation. They are, thus, simply mentioned in this ethnography as one of the alternative subcultures found in the Cyborganic community that, as their antecedents in the 1960s and 70s, included countercultural practices and imaginaries of “sex, drugs, and rock and roll.”

As a community, Cyborganic was akin to the immigrant organizations of 19\(^{th}\) century America, a social group for those in a new land both online and in the City. It was a project aimed at countering the individualizing forces of network society.

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\(^2\)“The fact of having simultaneous close emotional relationships with two or more other individuals, viewed as an alternative to monogamy, esp. in regard to matters of sexual fidelity; the custom or practice of engaging in multiple sexual relationships with the knowledge and consent of all partners concerned” (OED Online, s.v. “polyamory,” http://dictionary.oed.com/cgi/entry/3006709, accessed August 29, 2008).
The great majority of Cyborganics were migrants who came to the Bay Area for college, graduate school, or work. The theme of Cyborganic as a support system for a particular age cohort appears throughout my research, but especially in response to the question of what motivated people to participate in the community.

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 Swanson, questionnaire response, September 19, 2004)

I think people were attracted to it because it offered a social group of like-minded individuals. It had the warm social feeling of a college social club or student center that appealed the newly graduated, especially in San Francisco where everyone was just arriving. (Wayne Bremser, questionnaire response, September 17, 2004)

Even those who had grown up in the Bay Area were beginning careers and making the transition to independent adult life. For people at this stage of life Cyborganic provided a ready-made community addressed to a host of human needs—from housing, employment, and “communal/joint education,” to dating and recreation. Indeed, one way Cyborganic expanded its membership was by providing such support to people who had just arrived in the City.

Meeting all of people’s human needs, the breadth of human resources really can’t be stressed enough. These people really take care of each other. In an industry where your employer really doesn’t take care of you anymore, and in a world where people are separated from their
extended families as a rule rather than as an exception, these people manage to support one another...We have 20 year old kids dropping out of college to come to SF to get a job working on the Web who find and apartment and a job and a group of friends to hang out with inside the community, with very little effort. Fabulous, the kind of support people need. (Caleb Donaldson, interview, October 7, 1996)

My friends moved here for the summer. They arrived Wednesday night. On Thursday night they went to a TND. On Friday night, they had housing in a good place, near public transit, and soopah cheap. That’s the fastest (and cheapest) housing I’ve ever seen anyone get. Thanks TND! (John Shiple, e-mail to sf@cyborganic.com mailing list, May 11, 1996).

Time and again my informants spoke about Cyborganic as a “support system.” Whether members were new to the San Francisco, or simply new to the challenges of making a living and making a life, Cyborganic offered the type of support provided by kinship groups, ethnic organizations, and employers in the past—and by Weber’s “neighborhood of households settled close to one another” (1978:361). Though Weber identifies “an unsentimental economic brotherhood,” “practiced in case of need” as “the essence of neighborly social action,” he also writes: “The neighborhood is the natural basis of the local community (Gemeinde)” (1978:360-363). The social action of the Cyborganic community extended beyond the necessary and beyond the local neighborhood. Aid and comfort were given in times of need; but birthdays and holidays were also celebrated (e.g. Cyborganic Seder 1996); and partnerships of all kinds—from intimate to professional—were facilitated, within a community whose collectivity extended from the household, to the workplace, and into life as a whole. People participated to “feel like a part of
something,” but also to explore and experiment with collaborative resources “for imagining and managing life in the network economy” (Turner 2005:491). 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 as “geeks,” and (3) as a geographically and historically specific community organized around the cultural values of the creators of the Internet.

Cyborganic was not merely a defensive project, but also a creative one that can be understood in the context of “urban social movements (not quite revolutionary), through which common interests are discovered, and defended, life is shared somehow, and new meaning may be produced” (Castells 1997:60). This creative project was apparent in the Valley section of the website which was devoted to the art and activist projects of community members. It was also apparent in a variety of other undertakings not represented on the Cyborganic Gardens website. There was, for example, Salon Medusa, a monthly “forum for women artists to share their creative work, receive feedback, and network with other members”\(^4\) that met

\(^3\) Ian McFarland, questionnaire response, May 11, 2005.

\(^4\) M. Mara-Ann, e-mail to author, March 11, 2008.
every month for nine years. Founded in February of 1997 by M. Mara-Ann, the salon
was hosted on a rotating basis at members’ homes.

Salon size was limited to ten, and then later twelve members, with
required regular monthly attendance in order to maintain a “critical
mass” for quality sharing and critique of work. Meetings were
structured with an initial open mic for brief member updates, then
followed by a half hour feature for an in-depth look at a member’s
creative work, and ended with a brief thematic presentation
introducing a piece of theory or another artist’s work for
consideration during the interval between meetings. (M. Mara-Ann, e-
mail to author, March 11, 2008)

Many of the women in Salon Medusa\textsuperscript{5} initially met through Cyborganic, and
some—Mara-Ann, Francis, Kreuter, Krylova—were part of the community that
preceded the growth of the business. Salon members worked in photography, poetry,
fiction, non-fiction, new media, and performance. During the 1990s, these women
worked at \textit{Wired} (Sanders), \textit{Hotwired} (Yates), CNET (Francis, Mara-Ann, Shindler),
Computerworld (Mills Abreu), for the Burning Man arts festival (Kreuter), in
graphic design (Hoffman), film production (Howe), and teaching (Francis, Krylova).
Communication outside Salon Medusa’s monthly meetings was conducted largely
over e-mail and the majority of early correspondence streamed over the Cyborganic
servers and neighborhood LAN.

\textsuperscript{5} The original members of Salon Medusa were: Elinor Mills Abreu, Alison Yates,
Anne Francis, Lisa Hoffman, Jaynee Howe, Holly Kreuter, Zoe Krylova, M. Mara-
Ann, Stacy Sanders, and Stephanie Shindler; with Devra Edelman and Laura Paulini
joining in 2002 (M. Mara-Ann, e-mail to author, March 11, 2008).
Cyborganic’s techno-communitarian ideals and practices are nowhere more apparent than in the many Tibet-related IT projects supported by the community since 1996. These include: (1) Tibet.net, the official site of the Central Tibetan Administration (the Dalai Lama’s government in exile); (2) Tibet.org, an umbrella website for organizations of the Tibetan community in exile and Tibet support groups internationally (e.g. Tibetan Youth Congress, International Tibet Support Network (ITSN)6; (3) mailing lists for these groups; and (4) the project to set up a LAN and e-mail system for the Tibetan Administration in Dharamsala. Cyborganic’s involvement with these projects was the work of Dan Haig whose life history illustrates vividly the way educated young people were drawn to San Francisco’s growing Web industry in the 1990s and, in turn, used their Web jobs to support a variety of creative, social, and activist projects.

Haig studied Tibetan medicine at the University of Wisconsin, Madison before moving to California where his girlfriend (now wife) Krylova was living.

I took up driving a cab while I was in grad school, and so I came out here with virtually no job experience whatsoever, didn’t know how to use a computer. (Dan Haig, interview, October 4, 2005)

Though he arrived in the Bay Area with few computer skills, Haig was already connected to Cyborganic through his younger brother’s high school friends, Steuer

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6 Since 1997 the ITSN website has been hosted on Cyborganic’s servers—first at http://www.tibet.org/itsn/ and now at http://www.tibetnetwork.org/. At the end of 2007 it was in the process of being transferred off the Cyborganic server.
and Nelson. Even before Haig moved to San Francisco, Nelson had begun talking to him about working in the emerging Web industry.

I remember when I came out here actually to go camping with Zoe [Krylova] around Halloween 1993, we went to see something at The Great American Music Hall and Nelson had a computer, a laptop with a version of Mosaic one point O point three [1.0.3] with some little prototype website for Knitting Factory Records or something like this, and he’s clicking on pictures and some other page comes up. So, I look back and Nelson’s, you know, like “Well, it’s the wave of the future, dude, what do you think? Do you want to do all this stuff and build websites?” And, I’m like “Sure, man, plug me in.” You know, whatever, being a Luddite, I wasn’t really thrilled but I’m also fairly practical about things, so I thought I’d give it a whirl, and now look at me [laughs]. (Dan Haig, interview, October 4, 2005)

Haig learned “how to use computers and got sucked in to the Web explosion” becoming Organic’s first employee and later working at other SOMA Web ventures (CNET, Third Age). In 1995 he quit his contract job at CNET and, using money saved from building websites, traveled to India for five weeks of study at the Tibetan Medical and Astro Institute in Dharamsala.

In Dharamsala, Haig met Phuntsok Namgyal, director of the Tibetan Computer Resource Centre and learned about the IT projects he was working on as “sysadmin for the Tibetan government in exile.” Realizing the challenges Namgyal faced working with old, un-networked computers, frequent power outages, and no other technical staff, Haig decided he could help using skills and connections he had developed in the Web industry. On January 3, 1996, shortly after his return to San Francisco, Haig asked Jon Drukman (Ramona Empire’s resident sysadmin) to
register the domain Tibet.org on his behalf. A few weeks later, Haig received e-mail from someone in Palo Alto asking about the domain.

This guy down in Palo Alto ping[ed] me, not too many weeks later, saying “Hey, I wanted that domain name. Can I have it? What are you doing with it?” And I’m like, “Well, no, but let’s talk.” So, I meet this guy over at the office on Ramona and after talking to this guy for half an hour, I was like, “Okaaaay, sure I’ll be going to D.C. next month for this big Tibet conference to take over the Tibet movement’s Internet development planning. Sure, I can go do that, um. I’m going to meet the Prime Minister of the Tibetan government in exile next week to show him the website I’m going to build between now and then, right! Okay.” And this guy, Fred, Fred Shepardson, Committee of 100 for Tibet President, kind of just plugged me in, he just was like, “Dude, take the ball and run with this, please, somebody’s got to do something.” And, I know a magic carpet ride when I see one, so I stepped on it and, still kind of hovering a little bit. (Dan Haig, interview, October 4, 2005)

Thus, Haig’s connection to Tibetan Internet projects came about through two unplanned meetings (with Namgyal and Shepardson); his access to Cyborganic resources (technical expertise, infrastructure, and office space); and the regional proximity that enabled him and Shepardson to meet face-to-face in San Francisco.

Haig put a world address book for all Tibetan relief organizations online on July 6, 1996 as a birthday gift to the Dalai Lama. He worked with dozens of Tibet-support organizations and NGOs, in the Bay Area, New York, and internationally, helping them set up their first websites, many initially hosted by Cyborganic. At first, all these groups needed help getting online and figuring out how to build websites. But as soon as they learned how to use the new medium, those who lived in places like New York and London, with good network access, moved their
operations to a local server. Predominantly, it was the Tibetan organizations that stayed on Cyborganic’s servers. One reason was cost, given that “25 bucks a month for bandwidth is a lot of money” for organizations like the Tibetan Youth Congress, and other non-profit groups.

Through this experience Haig came to realize that all the online initiatives for Tibet would be far more effective if the Central Tibetan Administration (CTA) in Dharamsala had a local network of its own. In 1997 he began organizing to build a direct, high-speed network connecting the offices of the CTA’s seven ministries and the Library of Tibetan Works and Archives to one another and the Web server. First, Haig asked Donaldson, Cyborganic’s Gardener-In-Chief, to go to Dharamsala to measure distances between buildings and record specifications for the LAN. Haig paid his airfare, but Donaldson volunteered his time and other expenses. On April 3rd 1997 a team of four Cyborganics and Jack Burris, a University of Wisconsin computer administrator, each took a month off work to travel to Dharamsala and set-up the network. The Cyborganics paid their own airfare and expenses, and Haig covered Burris’ and his own. The Cyborganics were: Haig; Rick Schneider, a telecommunications engineer and the Ramona Empire’s resident “hardware infrastructuralist;” Stefan Lisowski, a Web developer and volunteer Cyborganic sysadmin; and Ari Salomon, a graphic designer and Macintosh specialist. Other than

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7 Stories about the project appeared in the *San Jose Mercury News* (Jung 1997) and the *Milwaukee Journal Sentinel* (Heinen 2001).
Haig, none of the team had any prior connection to or special knowledge of Tibetan culture and history.

The Cyborganic team made the journey to Dharamsala carrying motherboards, processors, cable (800 feet of steel, 2,400 feet of coaxial), drill bits (to bore through walls), and other hardware purchased by Haig. In addition to laying cable and installing hardware (computers and hubs), they set-up an e-mail system and intranet for the CTA’s staff of 200, with dial-up service for governmental and cultural institutions too far away to be on the LAN. Personal accounts on the system “were a big hit” rising from seven to over forty within a few months. After working for a month with old computers (Macintoshes with 1 MB RAM) and challenges such as regular power failures, the network was operational and four members of the team returned to the U.S. Haig, however, stayed on for four months to teach the CTA computer staff how to use and maintain the new systems.

In 2001, the Dalai Lama spoke of his hopes for Tibet.net and the many websites for Tibetans in exile and their supporters that had been developed with the aid of Cyborganic’s community.

“With the sudden proliferation of Tibet-related Web sites, it is my hope that a virtual Tibetan community can be created in cyberspace, to be freely accessible to everyone interested in Tibetan Buddhism,

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8 “10 network cards, 10 network hubs (distributed 2 of these in each backpack to allay possible suspicions at Delhi Int'l customs, a few dozen very heavy lag bolts, a star repeater hub, and a modem for the Dalai Lama's office to use to dial in to the network from two km up the mountainside, as well as zip drives and other assorted utility devices.” (Haig, e-mail to author, April 1, 2008)
Tibetan culture and Tibet’s present tragic fate,” the Dalai Lama said in a message on one of the site’s pages. (Heinen 2001)

While the Dalai Lama emphasized the websites’ value to the preservation of Tibetan Buddhism, culture, and the political struggle for Tibet’s sovereignty, Haig spoke of Tibetan culture as a remedy for fundamental threats to humankind and the planet.

“Tibetan Buddhist culture has fostered something that the rest of the world needs very desperately in order to make it through the next century—compassion for all living things and realistic ways to develop such compassion,” Haig said. “So they give us compassion and we give them, well, a Net connection. Hopefully, we will give them more than that in the end.” (Jung 1997)

“Many people feel that Tibetan civilization holds the key to wisdom that the ‘developed’ world has lost—respect for the environment and a focus on developing the potential of the human spirit, for instance—and must regain before we destroy the world we live in. My work is to help provide the means for this ancient wisdom to survive and propagate throughout the world,” Haig added. (Heinen 2001)

The loss and need Haig perceives in the “developed” world are the very threats against which, as Castells has argued, the social movements of the information age—opposing globalization, ecological destruction, and the micropowers of patriarchy—defend (Castells 1997:60-67).

As Haig describes, San Francisco’s flexible and distributed “new economy” created the conditions that enabled him to contribute time and money to these Tibet-related IT projects.

The hardware that we brought to take with us to Dharamsala to build their network, and the plane tickets and all this other stuff that I basically sprang for, I made that money in about six weeks when Third Age was being built, heavy overtime, contract, getting paid by
the hour, 60 hours a week, kind of money. But it was great, you know, go to India, come back, have a new job, or have your old job, it’s your choice really, and make your money, save your money, go back to India to do some of the work there, then come back have your job back again, no matter how long you were gone, it seemed. And then we went again, Zoe and Tashi and I once, for a whole year, and when we came back, Booph! No more work. It was like, “Oh, now I’m in trouble, I shouldn’t have done that.” But who knew, at the time it seemed like a simple thing, in fact, I was kinda banking on getting work I could just telecommute and do from India, but you know, everything changed. (Dan Haig, interview, October 4, 2005)

In 2001, Haig returned to the Bay Area from a year in Dharamsala with his wife and three-year-old daughter to find the dot-com bubble had burst. After failing to find a job on the West Coast, he moved with his family to Ann Arbor to work on a medical software start-up with his eldest brother, a physician. The company never got off the ground and Haig returned to driving a cab for a year and a half during the economic downturn. Though Haig’s Tibet work included a handful of contract jobs, for the most part he labored on a volunteer basis and used his Web industry earnings to underwrite his participation and other costs. Haig estimates having spent $10,000 of his own money, and

at least six figures of missed income during the peak of the dotcom days while I volunteered in India, and that doesn’t count the thousands of volunteer hours I did in the Bay Area when I could have been asking $60-$75 an hour. (Dan Haig, e-mail to author, April 13, 2008)

Though the Cyborganic business had just closed when Haig returned from his first stint in Dharamsala, Steuer donated server space and bandwidth for the Tibet Online initiatives (websites and mailing lists); and with a cooperative of volunteer sysadmins from the community kept the Dalai Lama’s CTA site and other Internet
services online from 1997 until 2008. Over the years these Tibet websites have received a good deal of traffic, averaging a million hits (68,000 visits) per month in 2004, and there was sometimes talk in the cooperative about asking them to contribute to Web hosting costs. But this never happened.

Haig: between Tibet.org and Tibet.net it’s about a million page views a month. Tibet.net gets like 600,000. No wonder they [the Cyborganic cooperative] wanted them to pay for bandwidth.

Cool: How’s that working out?

Haig: No one’s sent me a bill yet?

(Dan Haig interview, October 4, 2005)

With the Chinese government continually reporting Cyborganic’s mailhost to “spam lists” and “crackers” working to bring them down, maintaining the servers hosting the CTA’s website and many pro-Tibet political mailing lists has been a unique challenge for Cyborganic’s volunteer sysadmins.

Cyborganic’s Tibet projects also drew attention from the Pentagon. In 1997, Haig received e-mail “from an address @osd.pentagon.mil” (Office of the U.S. Secretary of Defense) saying they had heard about the trip “to India to wire the Dalai Lama” and wanted to know about Tibet Online and what we did in Dharamsala as an example of how sub-state actors can have disproportionate affects on geo-politics by utilizing technology. (Dan Haig, interview, October 4, 2005)

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9 These averages are based on Cyborganic’s server logs for 2004.
The e-mail came from Captain Dick, a retired army officer who founded the Highlands Forum in 1995 to keep Pentagon personnel abreast of technological developments. Steuer and Haig were asked to come to Washington, D.C. to address the forum in the fall of 1997.

They’d just closed Cyborganic, and I knew [Steuer] was down, so “Hey, Jonathan, man, check out this invitation, want to go to DC and talk to these people?” And he was like, “yeah … that’d be great, actually, let’s go do that” and I think he quite enjoyed the fact that Cyborganic, by virtue of being this synergistic thing had created one little flurry of activity sufficient to attract interest of the Pentagon and to be asked to go speak at their top-level information technology forum. He was amused and then he had the letter from the Secretary of Defense taped to his rack\(^\text{10}\) for quite awhile. (Dan Haig, interview, October 4, 2005)

In terms of helping “sub-state actors,” cultural groups, and activists adapt their missions to the information age, Cyborganic’s communitarian practices and imaginaries have been as innovative as the entrepreneurial ones discussed earlier. The group’s commitment to self-publishing and the utopian promise of online social networks, together with its flexible structures of cooperative action, enabled Cyborganic’s influence to reach beyond SOMA and other tightly circumscribed hubs of digital culture, to the mountains of northern India and around the world.

These contributions to Tibetan and pro-Tibet IT initiatives, not only attracted attention from the Pentagon, they also drew new recruits to the Cyborganic project after weekly TNDs had ceased, the business had closed, and the community had

\(^{10}\text{A rack is metal shelving used to hold hardware devices such as servers, hard disk drives, modems, other computer and network equipment.}\)
shifted to the more attenuated, less regularly face-to-face form it took after 1997. While the group’s Tibet work served a community of interest that already existed, it also served as a vehicle through which Cyborganic’s communitarian ethos, utopian practices, and imaginaries of techno-sociality, have continued to propagate in the decade since the business closed its doors. For example, Locke Berkebile, a network security architect, learned about Cyborganic in late 1998 and was the group’s primary sysadmin from 2001-2007. Prior to his association with the group, he had no experience with non-profits or with Tibet. After working for years as a volunteer for the Tibetan Administration—first as a sysadmin on Cyborganic, later as a technical advisor flying to India to meet with CTA officials—Berkebile started his own non-profit in 2005, California Internet Cooperative, “a member-run ISP” for non-profit groups on the model of Cyborganic’s cooperative.

I think Cyborganic showed me that technologists can make real, meaningful contributions to important causes. Before I encountered Cyborganic, I didn’t think in terms of applying my Internet expertise to activist and humanitarian projects. I thought of these pursuits (if at all) as activities to be undertaken outside of the domain of my work. I am now making plans to start a new nonprofit that offers online communication services to other nonprofits. So the lesson was a profound one! (Locke Berkebile, questionnaire response, September 11, 2004)

Berkebile connected to Cyborganic through Scient, a successful Internet consulting company founded in San Francisco at the height of the dot-com bubble. Both he and Steuer began working there in 1998 and their association served to propagate Cyborganic’s techno-social vision long after the community’s largest, most visible incarnation between 1994 and 1997. Berkebile never attended a TND,
never had a homepage in Cyborganic Gardens, and, when he joined, the group was being reconstituted as a bandwidth cooperative, separate from the community that continued on the mailing list. Yet, he and the others in that cooperative— which became Cyborganic.org (instead of .com)— sustained and propagated Cyborganic’s communitarian vision of techno-sociality beyond the Web publishing industry and the dot-com period of the 1990s.

Over the years, many in the community took the path Berkebile followed from sysadmin to activist (or artist). It appears, for example, in the words of Steev Hise, another late recruit to the project who served voluntarily as the last sysadmin for the business, and as a community sysadmin for the Cyborganic mailing list and Ramona LAN for several years (1996-2001).

My role: at first I was really excited about learning new stuff and just totally geeking out. I soon evolved into the position that my geeky career was something to fund what I really cared about, which was my art, and more recently, activism. the work was better than most ways to make a living and allowed, and still allows, me to make quite a bit of money in a pretty small number of hours, leaving me plenty of time to do what really matters. my time has always been more important than money. I’d prefer to do this work for a cool nonprofit or other cause I believe in, and have made many attempts at moving in this direction with not much success. Really I’d like to get completely out of IT work, or anything to do with computers, but I haven’t figured out how or what I’d do instead. I think computers are ultimately unhealthy, part of the vast, unhealthy (in many senses of the word) culture that we’re stuck in. But they’re one of the master’s tools that we need to use to bring down the master’s house. (Steev Hise, questionnaire response, September 22, 2004)

Just as the significance of Cyborganic’s business project can be seen in its connection to innovations in the production and consumption of new media, the
significance of the group’s communitarian projects, practices and imaginaries can be seen in the continuing influence of Cyborganic as an exemplary community for imagining and managing life in the network society.

After the business failed in 1997 Cyborganic persisted in a variety of forms. The physical neighborhood of apartments continued to be occupied by people who were part of the community and connected to the Ramona LAN. These residents organized as the Church of the Immaculate Connection (CIC) bandwidth collective in 1998 to share Internet connectivity, technical infrastructure, and administrative labor, but disbanded in 2001 in favor of individually purchased commercial ISP service. Within a year of the Corporation’s demise, Cyborganic was reconstituted, albeit in significantly curtailed form, as a group of nine volunteer systems administrators (sysadmins) sharing servers and sponsoring a community of approximately one hundred users with over a hundred separate domains. This incarnation of Cyborganic—which I call “the tech list” or Cyborganic.org because interaction on the mailing list and server constituted it—existed for almost five years (1998-2003). Each sysadmin sponsored a number of users for whom he was specifically responsible, and users (“sponsorees”) only contacted their sponsor, they did not send e-mail to the tech list. Thus, it was not a direct membership organization for all its users, only for the administrators who maintained the server and were on the mailing list. No longer confined to San Francisco, these Cyborganic sponsors were at different times in New York, Los Angeles, Ann Arbor, Sealand, London,
Dharamsala, and Australia. In 2003 the Cyborganic.org cooperative was again re-
constituted when, in the process of migrating to a new server (oz.cyborganic.org),
they lost two systems administrators in a split over whether to upgrade to Linux or
the FreeBSD operating system. The seven volunteer systems administrators who
remained in the Cyborganic cooperative, supported well over a hundred users in
some capacity. The servers and systems they maintained hosted several dozen e-mail
accounts, mailing lists, personal, and business websites: for example, Greenhome\textsuperscript{11},
an online store for environmental products. Cyborganic also continued to host
approximately a hundred virtual domains, including the Web presence for the
Tibetan Government in exile, until April 2008.

Another significant legacy of Cyborganic’s cultural commune can be seen in
the many communities its members have joined or formed which are similar to
Cyborganic in their practices and imaginaries, but without the central business
project and dedicated physical space. These Bay Area communes cum bandwidth
cooperatives include: SuperDeluxe (now Nanolux), maintained by James Home,
which “exists to provide our friends and family with a reliable conduit for their
electronic communication;”\textsuperscript{12} Saturn5, run by Steve Simitzis, which serves
approximately a hundred and fifty users with “hosting for artists, online

\textsuperscript{11} The Greenhome website is at: \url{http://www.greenhome.com/}

\textsuperscript{12} Superdeluxe website, \url{http://superdeluxe.com}, accessed November 25, 2005, site
now discontinued.
communities, activist organizations, and locally owned businesses;”\textsuperscript{13} and The Spore Project, “a non-profit, community hosting service.”\textsuperscript{14} While some of these groups center on electronic music and arts gatherings (e.g. Cloud Factory\textsuperscript{15}), others are, or were, simply friends hosting their personal and professional e-mail and websites together (e.g., Maz, Vigilante, arctic\textsuperscript{16}, The Hungry Programmers\textsuperscript{17}). For approximately eight years after Cyborganic closed its doors—that is, its physical venues (TND and the business offices)—the Maz “pals list” and server, maintained by Brian Moseley connected several dozen people who had come to know one another through the community. In addition, space bar\textsuperscript{18}, the online chat forum launched as part of the Cyborganic project, continues to operate today, hosted by Home and moderated by Donaldson.

All these collectivities integrate online and face-to-face interaction and express overlapping sub-groups of people who came to know each other through Cyborganic and started, or joined, similar communities of their own. Many also


\textsuperscript{16} Arctic website, http://www.arctic.org/, accessed November 25, 005.


came together in other social, personal, creative, and recreative online and off-line collectivities: for example, the numerous Burning Man theme camps, such as The Irrational Geographic Society, bianca’s Smut Shack, and the Illuminaughty.\footnote{The Irrational Geographic Society website, \url{http://lsdworld.com/igs/}, accessed August 31, 2008; the Bianca website, “The History of Bianca at Burning Man, \url{http://bianca.org/history/burn.html}, accessed August 31, 2008; the Illuminaughty website, \url{http://www.illuminaughty.org/}, accessed August 31, 2008.}

Burning Man became a big umbrella to all of the different cultural groups in SF. Cyborganic could be considered like a little pod of this umbrella. Burning Man welcomed and was a platform for crossbreeding of groups. The artists talked to the techies, who hung out with the musicians who would do stuff for, and so on... My friend from Berlin always told me of the scene there that the artists would only talk to the artists and the musicians would only hang out with the musicians, this was very untrue in San Francisco. Cyborganic also had this feeling, too, the graphic artists would chill with the digital musicians, etcetera. (Susie Kameny, questionnaire response, October 5, 2005)

Burning Man is an annual festival that takes place on the playa of Nevada’s Black Rock Desert. For 8 days before the U.S. Labor Day holiday\footnote{Labor Day in the United States is the first Monday in September and the three-day weekend is a major national holiday marking the culmination of the summer season.} the dry lakebed is transformed into Black Rock City—complete with a system of roads, Department of Mutant Vehicles (DMV), daily newspaper, security force (Black Rock Rangers), and portable toilets. Described by its organizers as an experiment in “community, participation, self-expression, and self-reliance,”\footnote{Burning Man website, “What is Burning Man?,” \url{http://www.burningman.com/whatisburningman/}, accessed August 29, 2008.} the event brings together bohemians primarily from the Bay Area, but also from other hubs of digital and
alternative culture. Participants stay in “theme camps” and many work year-round designing and crafting art, architectural, and performance pieces for the festival, which culminates in the ritual burning of a large wooden figure (“the man”) on the Saturday night before the Labor Day holiday.

Burning Man began in San Francisco in 1986 with twenty participants. By 2007, participation had swelled to 47,366 (Berton 2007). Since 1995 it has been an important gathering for many in the Cyborganic community. In a 2004 interview, Home relayed a powerful image of the way Burning Man theme camps reflected the various San Francisco bandwidth collectives that formed within Cyborganic’s membership.

The thing that struck me about Burning Man in went I went in ’96 was that it was all of these host names physically instantiated, like I could walk around to each of the machines and see a physical manifestation of the machine in the desert, right, because the camps and the hosts where you got your e-mail were the same thing, right. People who all had their e-mail addresses at one domain, they all camped with each other, right. Like the little, we had that little hub and you could literally walk around and feel the same gradient that you experienced online of people on their websites talking about each other, with how they physically camped. And that, that was powerful, that was a very powerful, um, it just, it made it a more solid thing. Some of the solidity that these communities have had and still have, I think stems from that physical instantiation. If you can walk around in something, you know. The virtual is so powerful, but it still isn’t as powerful as being able to walk around in something. (James Home, interview, September 24, 2004)

The camps set up in the ritual time and space of Burning Man mirrored on Black Rock Desert the social collectivities and connections of everyday life in the Bay Area. In 1999 when the Cyborganic.org, Ramona LAN, and SuperDeluxe
cooperatives were having problems with security breeches and disruptive attacks to their servers, Home set-up a mailing list to coordinate the response. That list remained active in 2005 as a forum for systems administrators supporting hundreds of users in these San Francisco bandwidth collectives.

In this network of groups and projects, the vision, practices, identities, and connections forged through Cyborganic live on. As Home put it, “Cyborganic is still a very strong community brand” that carries “a lot of meaning for a lot of people.” The phrase “community brand” evokes the tight fusion of entrepreneurial and communitarian imaginaries characteristic of these cultural communes. Talking with Home in 2004 about the groups that were still active, I asked if they focused on recreational gatherings and found eloquent corroboration of the argument I make for the influence of Cyborganic’s communitarian and social innovation.

They’re communities as much as, the parties themselves are not what it’s about any more, I would say that Cyborganic was a proto-version of what they’ve become. They’re communities of people who are extremely close to each other, who collaborate on all kinds of projects together, who, you know, their job to each other is essentially to keep life interesting, right, which is what Cyborganic, Cyborganic established that as something to do, right. (James Home, interview, September 24, 2004)

It is not that Cyborganic invented the techno-sociality practiced and imagined in these communities, as the cultural history in chapter 3 details, but that they reinvented it in San Francisco at a time when e-mail and the Web were starting to become the mass social phenomena they are today. By establishing its vision of community “as something to do,” Cyborganic fueled the rise of new “mediated
imaginings” (Warner 1990:xiii), drawn from an early generation of Internet culture but adapted to network society.

In addition to starting new cultural communes in the form of bandwidth cooperatives, those who had been part of Cyborganic also pursued personal projects for life expressive of the group’s utopian social imaginaries. For instance, responding to the question of whether or not he wanted me to use a pseudonym for him in my ethnography, Home replied:

You can attribute anything that I say to me. I’m extremely open with my life. I don’t judge people who aren’t that way negatively at all but I’m not happy with the direction that the world is going in, as far as just general culture goes, and I feel like one of my jobs as someone who’s really happy with their life is to be as, not foist, right, but be as open with what I’m doing as I possibly can so it might be a little infectious. So, there’s not much I’m quiet about, you know. I’m pretty open about sex and drugs and rock and roll, you know, like you said. (James Home, interview, September 24, 2004)

Here the utopian vision is articulated in terms of the individual life as exemplary project in a manner consistent with Castells’s description of “the culture of communal hyper-individualism” (1997:67-68). It is individualistic because “only the individual can be the proper accounting unit,” but it is also communal, clustering, in the case of Cyborganic’s membership, in groups formed on the basis of identities and values inherited from Internet culture and the broader countercultural movements of the 1960s and 70s. The model of online-onground community and vision of turning computer technology to human ends that Cyborganic pursued has since been taken
up by my informants as a resource for imagining and managing their daily lives in contemporary, U.S. society.

Though many business relationships connect those in the communities Home described in 2004, none is itself a start-up company. This may well reflect lessons learned from tensions between the entrepreneurial and utopian dimensions of Cyborganic. In the second part of this chapter, I turn to discuss these tensions, the conflicts in which they were expressed, and contradictions they bespeak, thereby addressing my second objective of elucidating the relation of Cyborganic’s entrepreneurial and utopian aspects. While earlier chapters emphasized the productive synergies of business and community, here I bring to the surface “gaps and paradoxes” (Holston 1989:13) apparent in the ethnographic material presented throughout the work. This analysis initiates my critical consideration of the Cyborganic case, that is, of gaps and contradictions in my informants’ self-understandings, specifically, in their imaginary of turning computer technologies to communitarian ends and projects for life. This consideration, in turn, readies the way for me to complete my third objective in the final chapter: grounding the narrative of social revolution through technology as a cultural legacy that has passed through generations and draws on quintessentially American attitudes and practice. While my concluding chapter focuses in etic terms on the limitations of the community form in realizing such social change, my focus here is on “tensions” immanent in Cyborganic’s entrepreneurial and utopian images, narratives, and practices, by which
I mean phenomena experienced and reported from an emic perspective. Talk of limitations in the final chapter engages theoretical questions of social morphology and social action. Talk of tensions in this one engages ethnographic evidence of the paradoxes and complexities entailed in Cyborganic’s project for life. Discussion of these tensions is organized around three themes, or provisional angles of analysis: (1) working time; (2) status and status group; (3) modes of allocation and mechanisms of social order.

**Working Time**

Cyborganic was a project for life in a social order dominated by work. This, I would argue, was the most basic paradox of its entrepreneurial-utopian hybrid. Many researchers have observed that high-technology product-cycles and work practices compress temporal experience (e.g. Barley 1988; Harvey 1990). In this context, the logic of work spills over into other realms; “life is colonized by work and technology…boundaries between home and work blur; and the self becomes another project to be streamlined” (Davidson 2004:187). This view and my theme of “working time” draw on the work of J.A. English-Lueck who, in a rich ethnography of Silicon Valley culture (2002), develops “compressing,” the use of “digital technologies to shape space and time,” as a central theme. In doing so, she articulates several points about middle-class families in “the Valley” that apply to my Cyborganic informants as well. The first is that the pace of life in technopoles is tied to the increasingly rapid product development cycles of information technologies.
In high-technology work the networks are maintained not only across space but also within time…Products are born, developed, and pushed to market in increasingly short time frames. Noel, a software engineer, speaks of the luxury of the old days, when a product cycle might have taken five years…the devices he designs are increasingly complex…Despite this increased complexity, the time frame for the product cycle is relatively short…That is, eighteen months for a new product, with a novel design…Each product cycle consists of a whirlwind of activity. Diverse players—computer scientists, various different engineers, technicians, machinists, prototypers, tech writers, marketers, and support staff—all work at different paces…

The daily rhythm of work is dictated by “fire fighting”—managing problems that must be solved immediately and are usually somebody else’s fault—and squeezing in progress on one’s own product. (English-Lueck 2002:55-56)

English-Lueck’s Silicon Valley informant, Noel, works with routers (devices that direct traffic on data networks) and refers to an 18-month cycle from design to launch of a new product. For my Cyborganic informants working in SOMA’s Web publishing industry in the mid-1990s, an 18-month production schedule would have been inconceivably long. Most did not work a single job for that length of time, let alone on a single product or project. Among these workers, it was common to speak of a “Web year” as being about 3 months long. The term refers to the time it takes Internet technology to develop as much as technology in another context might develop in a calendar year. In common practice, however, it was used most frequently to speak of the experience of this rapid pace of development: for example, the sense of time passing; experiences accruing; technologies, styles, and skills obsolescing at a rate greater than calendrical time.
As English-Leuck observes, one of the “unintended consequences” of yoking “the daily rhythm of work” to product development cycles in technology-intensive industries, is that the pace and logic of work tend to spill out over the rest of life.

Everyday life in Silicon Valley becomes transformed into a series of projects, and the underlying logic of outsourcing extends beyond the workplace into family and civic life. As people push harder to meet the obligations of “work-work” and the commitments of “life-work,” even changing the oil in the car oneself, or shining one’s own shoes, becomes impossible. …

This colonization of life by work has been remarked on by many. But it is more subtle than merely answering an e-mail or writing a report at home. Financial management, household maintenance, and continuing education take on aspects of work. Just as a tech writer learns new multimedia specifications in order to develop a CD-ROM manual, parents seek out skills for managing “difficult toddlers.” Knowledge workers seek out courses for how to work with people they dislike, or learn Italian to prepare for the next vacation. (English-Lueck 2002: 58, 67)

The insights English-Lueck presents of everyday life in Silicon Valley “transformed into a series of projects” that entail both “work-work” and “life-work” are well suited to my informants and the Cyborganic case. Everybody had many kinds of work. Cyborganics not only labored for pay (“work-work”), “schmoozed” (an emic term for professional networking), and performed the domestic and personal “life-work” that English-Lueck describes (household maintenance, self-learning), they also undertook a variety of entrepreneurial, creative, and communitarian projects (e.g. Cyborganic, Salon Medusa, Tibet websites) in “their own” time.

The figure of the “day job” looms large in the history of the Cyborganic project in chapter 4, as it did in the lives of many members of the community. The
term “day job” points indexically to night work, generally on artistic projects (e.g. self-publishing) and start-up companies, but also on ventures such as Haig’s many Tibet-related Internet initiatives. The context for this ceaseless activity during the dot-com era was not a lack of paid employment, but quite the opposite, as my informants describe.

I think it’s really easy in Silicon Valley/San Francisco area to kind of just work ridiculous hours all the time. I know from working at other companies that 60-hour weeks are not uncommon with other companies, now it’s like 80-hour weeks are not uncommon, or even more and, you know, if you’re giving up that much of your personal life, there better be some pay back, not just in the long term, but even in the short term in terms of where you lose that community time, that social experience, that you’re giving up. There still has to be a component of their lives which fulfills that socialization need and I think there’s a great amount of power in being able to tie that into a work environment. (Dave McClure, interview, October 7, 1996)

It was crazy—so much money floating around and so many amazing projects outside of industry, so many intelligent and creative people working on their own dreams. I hear SOMA is a ghost town now. Glad I was out of the country when it all came crashing down. I don’t miss the insane pre-launch phase of so many start-ups. The summer I built tibet.org I also was contracting well over 40 hours a week at E!Online to get that off the ground and also had a side gig working for a VRML browser company, not to mention the Cyborganic education stuff. I think I worked 16 hours a day 6-7 days a week for two months, not to mention living in Oakland and taking BART back and forth. You can only do that kind of thing for so long before your mind and health fail. (Dan Haig, questionnaire response, September 15, 2004)

In this milieu of 60- to 80-hour work weeks, both the pace and logic of work extended beyond the workplace into life as a whole—setting the tempo and tone of

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22 Joke recorded in fieldnotes: “I’m self-employed which means I can work any 80-hours a week I want.” (Ian McFarland, personal communication, March 9, 1996)
social interaction; and creating conditions that supported the pursuit of projects for life, yet simultaneously subverted their human-scale aims.

In addition to the toll on physical and mental health and the issues of sustainability that Haig raises, the extension of work time and work rationalities to all domains posed other paradoxes for Cyborganic’s project of turning entrepreneurial practices and imaginaries to utopian, human ends. Work mediated life, by which I mean the extension of its pace and logic imposed constraints (on self and social interaction) that were at once material and socio-cultural. Material constraints included the limits of the human body and physics more generally, in that even knowledge work takes place in time, only so much can be done in a day. During the Web boom, both limits were regularly tested by Cyborganics and often “overclocked.” Cultural constraints entailed porting entrepreneurial values and practices—efficiency, multi-tasking, directness, conciseness, and rational activity—to most practices of communication. These included: (a) norms of participation on the mailing list: in an “attention economy” people were expected to deliver high “signal to noise ratios” and were “flamed” for sending “off-topic” posts, or wasting other people’s time in some way; (b) new genres of micro-communication

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23 Overclocking means operating a processor (CPU or other digital logic device) at a rate higher than that for which it was designed.

24 “Continuous rational activity of a specified kind will be called an enterprise… The concept of the enterprise covers business conducted by political and ecclesiastic organizations as well as by voluntary associations in so far as it has rational continuity” (Weber 1978:52).
(e.g., the bite-sized messaging described in chapter 5); and (c) aesthetic values of formalism, brevity, newness, and regularity (e.g. the 54-word stories, “prose sushi,” and ideal of updating websites with something new every day). In addition to being antithetical to the human-scale ends of a project to defend life against the world-economic orders that structure product cycles, the spillage of “working time” over life as a whole contributed in a variety of ways to the other tensions I describe below between Cyborganic’s entrepreneurial and utopian dimensions.

**Status and Status Groups**

Status, in Weber’s terms, is “an effective claim to social esteem…typically founded on a) a style of life, hence b) formal education, which may be α) empirical training, or β) rational instruction, and the corresponding forms of behavior” (1978:305-6). Cyborganics was a status group within a larger status group of geeks who rose to prominence along with the Internet on the basis of technical knowledge, occupational prestige, and style of life. Though without the wealth and status of the baby boomer “digerati” (e.g., John Perry Barlow, Steward Brand, Mitch Kapor, Ester Dyson), Cyborganics were connected to this elite through Stanford, the WELL, Apple Computer, *Wired*, and *Hotwired*. Besides entrée to jobs, projects, and the latest industry developments, this status entailed privileges such as free passes to events (conventions, conferences) and inclusion on guest lists for corporate parties. *Wired* parties were notable for their rituals of status, often with “A-list,” “B-list,” and “C-list” invitees admitted to events at successive intervals, and long lines of people
awaiting entry (as at popular urban clubs). I refer to this phenomenon among the Cyborganics as geek, or “technorati,” status to distinguish Web geeks, who were on the whole a generation younger, from the “digerati,” though both words are similarly coined from “literati” to connote a cultural elite based on mastery of a particular media.

Geek status was of value to Cyborganic’s communitarian project in attracting volunteers as well as media attention, which further bolstered the group’s prestige and membership. In this sense, the rise of the geeks story (“revenge of the nerds”) that was a fixture of 1990s popular culture might have advanced the project in relation to the outside world. Yet, within the Cyborganic community claims, to “technorati” status were not equally distributed and, thus, distinguished in-groups and supported informal hierarchies that were sometimes at odds with community-building efforts. Space bar, for example, exemplified the in-group, or status clique, in the practice of “toying with newbies in channel one.” The practice was sanctioned not only by the participation of Cyborganic staff, but also by those who endured it and became members of the community, via space bar or other channels. Even those who spoke about “getting burned” in the chat curbed personal resentment, expressed embarrassment, or apologized for trespassing, in view of the status of space bar regulars, both in that forum and in the community more generally.

25 Cyborganic was featured in Rolling Stone, on cable television (CNET, MSNBC), and in the book Net Voice in the City (Kaneda 1997) that profiled the San Francisco Net rave community.
In terms of the communitarian project, I see two significant tensions in the fact of geek status as a key differentiator in the community. First, work for Cyborganic had no bearing on it, except in so far as the work itself was accorded geek status (i.e., was technical). This may be one reason growth of Cyborganic’s TNDs, mailing list, and media coverage was not accompanied by a sustained increase in volunteers for “non-geek” tasks (cooking, cleaning, accounting, public relations26), yet Cyborganic continued to attract volunteer sysadmins a decade after both the community and attention to it had faded. What I point to here is that the group’s central practices and imaginaries of status fostered contributions of the same kinds of labor and skills fostered by the entrepreneurial milieu, rather than those specifically required by the project for life. The second tension I note is that in-groups and informal hierarchies entail practices of communication, inclusion, and exclusion that often appear opaque, idiosyncratic, unfair, or irrational to those outside them. They, thus, become fault lines in conflicts, but are also the context for breakdowns in communication and trust in which conflicts arise.

**Modes of Allocation and Mechanisms of Social Order**

In the history of Cyborganic presented in chapter 4, I observed that as the community grew and the business gained momentum in 1995 and 1996, the tensions inherent in its entrepreneurial and communitarian projects became more pronounced.

26 There is, of course, a gendered dimension to this division of labor and status, but this was not a subject of my research and is not taken up in this ethnography.
Conflicts emerged around the incorporation of the business and, more broadly, the transition to market relations from the reciprocity and volunteerism of Cyborganic’s early phase.

The dilemma [was] due, in part, to the fact that volunteers have created and sustained the heart and soul of the community which is, in some sense, what the corporation is selling. Feelings of exploitation and resentment about payment, and for what kind of effort, [have] yet to be resolved” (IFTF 1997a:31).

As I described, the decline in TND volunteers shortly after the Cyborganic Corporation moved to Mission Street (SOMA) was associated with these feelings of exploitation and resentment. Kirkland captured the social atmosphere keenly in her e-mail to the TND mailing list initiating discussion of the problem, calling it “a dominant dissatisfaction with TND and what it is seen as representing,” and noting “a grumpy apocalyptic taste of brimstone in the air.”

Conflict and resentment over compensation also developed around Geek Cereal leading to its discontinuation and, ultimately, to Donaldson’s resignation from the company. The geeks who wrote the serial were to have been paid for their work and had signed a contract agreeing that the work itself (i.e. Geek Cereal) would be the Corporation’s property. While the start-up had just received a round of funding when Geek Cereal launched in the last quarter of 1996, overhead costs at the new location were high and further promises of investment never materialized. After a year of publication none of Geek Cereal’s writers had been paid. Acting

27 Jose Kirkland, e-mail to TND mailing list, December 12, 1996.
independently, one of them filed a lawsuit against Steuer personally, rather than the Corporation. Notice of the suit was served to Steuer on the playa at Burning Man in September 1997. The event is notable, not simply for its incongruity, but also for the fact that a San Francisco judge subsequently dismissed the case for improper service: the playa is in Nevada and notice must be served in the state in which a suit is filed.

Though Geek Cereal’s other writers did not take action to pursue payment for their work, Donaldson began talking to Steuer “about letting the Geeks take over their Cereal.” These talks “fizzled out” amid “haggling over legalese” and “arguing about intellectual property.” In his last post to the serial, Donaldson resigned as Cyborganic’s Gardener-in-chief and as Secretary of The Cyborganic Corporation.

(Donaldson, *Geek Cereal*, October 24, 1997)

Resentment over contributions made on the basis of Cyborganic’s community vision and feelings that it was being subordinated to the goal of raising investor capital had factored in my own departure from the business two years before, as the excerpts below from my e-mail resigning make clear.

My life at Cyborganic for the last months has been a continuous stream of error messages: No route to host. Server not responding. Link dead…

Suffice it to say that there is no longer a place for me at Cyborganic. I am a community-oriented person, someone who needs human factors, someone who needs respect, who needs common decency, and a

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28 After the Cyborganic Corporation filed for bankruptcy its assets were turned over to creditors. However, intellectual property claims for Geek Cereal were not awarded to anyone in the bankruptcy. A copy of the project remains online, hosted by Rocky Mullin, one of the Cereal Geeks, at http://www.sharon.net/gc/.
sense of common purpose to work at *any* job. Certainly I need these
to work the hours I have under the conditions I have—stress, verbal
abuse, non-payment of wages. It’s especially disappointing because
such “human factors” are what I thought Cyborganic was about, what
differentiated it from other places, like HotWired, AOL, or c|net. This
vision of a community service business is certainly what motivated
me to join you in the Cyborganic project at the end of 1993, and has
been the basis of my tireless efforts since. I thought Cyborganic was a
place where people actually mattered. How can we hope for this to be
true when the well being of even the principals is not looked after, not
tended to, ignored?

…I won’t go into the value that I have added to the organization, the
value that TND has brought, other than to wonder what Jeff Goodell
would have written about [in the Rolling Stone article], if not TND.
Despite the inaccuracies of his article, the story he tells is centered on
this event, the community it draws and the ideals behind it.

I won’t go into the value that my work has brought in terms of
funding being present for salaries and computer equipment. I may be
the humanist in this bunch, but I’m also the person who negotiated the
Getty investment. (Jennifer Cool, e-mail to Steuer, January 12, 1996)

What we have here—in my own case, as in that of Geek Cereal and the wider
community of TND volunteers—is a failure to communicate about vision, goals,
incentives, and rewards, to say nothing of responsibilities and sanctions. That is, the
project of creating Cyborganic on an entrepreneurial-communitarian basis was
undertaken without identifying and organizing rules of participation within the
community. For example, there were no explicit mechanisms to keep track of
members’ voluntary contributions and thus no system of valuation or recognition
beyond TND Dispatches and reputation. Thus, when the business sought to convert
to a fee basis the user accounts of members who were not contributing to the project,
their methods of determination were unclear to the community as a whole.

Moreover, other than free accounts and the stock options issued to Cyborganic
employees, there were no means of valuing voluntary contributions within the business, either. Despite much deliberative discourse over standards on the Cyborganic mailing list, there was no public discussion over these broader principles of participation, allocation, and reciprocity, and no consensus emerged by which to maintain administrative and regulative order.

In the absence of organized modes of allocation outside the business enterprise, control over and compensation for individual contributions became the key sources of conflict within the project. Yet, allocation and reciprocity were only one aspect of what I here call mechanisms of social order, by which I mean administrative and regulative rules governing social action.

Rules which govern organized action constitute an administrative order (Verwaltungordnung). Rules which govern other kinds of social action and thereby protect the actors’ enjoyment of the resulting benefits will be called a regulative order (Regulierungordnung). (Weber 1978:51)

The omission of rules governing social action and constituting “administrative and regulative orders” in the Cyborganic community as a whole was not an oversight. It reflects the “culture of freedom,” as Castells has called the hacker layer of Internet culture, in which freedom is the “paramount value” (2001:17, 46). Thus, after informal mechanisms such as dialog and complaint discourses were exhausted, Cyborganic members had no formal recourse in conflicts, other than to quit the group (or the particular forum of conflict, e.g., the cc list or space bar), or appeal to State law.
Both the paramountcy of freedom and paradox it posed for Cyborganic’s communitarian vision with regard to mechanisms of social order are vividly illustrated in my analysis of the raucous debates, or “flame wars,” that characterized the community mailing list throughout its eight-year run from 1995 to 2003. Flame wars were a given on the cc list and, at times, divided the community and caused people to unsubscribe. Yet, they also stimulated intense reflection and discussion about what the mailing list was for, what sort of speech and topics were appropriate, whether a person should be kicked off the list, and under what circumstances. In this way, flame wars served to define and discipline participation on the mailing list and in the community. In general, it was these crises, rather than organized action, that brought questions of list norms and community standards to the fore. It was these crises in the mailing list forum that provided the means for members to articulate, question, and reflect on their practices and imaginaries of community.

Through ethnographic and discourse analysis of the three longest, most contentious flame wars in cc list history, I made two discoveries relevant to my argument here regarding the Cyborganic community’s lack of all but the most informal mechanisms of social order. First, in all these major debates, norms of participation on the list itself were the focal issue. Second, I came to appreciate the strength of my informants’ commitment to freedom: (a) in their disavowal of formal regulation as “censorship;” and (b) in the staunch refusal of the majority of members

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29 These were “cc conversations” in April 1996; “Same-sex marriage” in June 1996; and “on Michael Thomas and the cc list” in July 1998.
and administrators to expel even the most disputatious person from the list. Before I explain these findings and their relevance, let me present some background on the three flame wars. The first took place in April 1996, addressed the question of what “we are ‘supposed to’ be talking about on the cc list,” and consisted of 30 messages, or posts, from 23 different people. The second started in June 1996 as an argument between two of the list’s most outspoken members—Rebecca Eisenberg and Michael Thomas—and continued in a thread of 110 posts from 32 people. Argument centered on Thomas’ use of what many regarded as extraordinarily abusive language (some called it “hate speech”) and his practice of reposting private responses to his posts back to the public list. The third flame war, which broke out about two years later in July 1998, also focused on Thomas’ invective, personal attack, and reposting of messages sent privately to him. But, more crucially, it raised the question of whether, after years of this behavior, it was time to kick Thomas off the list. The debate over whether he, or anyone, should be expelled from the cc list raged over several days in more than a hundred posts from 31 members.

The first pattern I noted in these flame wars is that posts tend to touch only initially, or tangentially, on the subject under debate and to focus, instead, on the way (or place) it was being debated. Whatever the topical tinder that sets them off, they generally focus on meta-discourse about what sort of posts and posting behavior are appropriate, alongside commentary weighing in on the original issue. Indeed, the cascade of “by-stander” commentary is precisely what magnifies arguments into
flame wars, and what made them one of my best ethnographic sources for insight into ideals and prohibitions among list members and the extent to which these were shared. Further, meta-discourse on the list was of three types. Most common were suggestions for managing electronic mail—client-side filters, subject lines, attention management—as techniques to avoid unwanted messages and effectively expel anyone from view as desired. Second were arguments that addressed expectations of list participation and conveyed a view, not simply of the cc list’s purpose, but of the community itself, the purposes of their collectivity. Finally, when people are embroiled in intense clashes on mailing lists, as Thomas was, their status as group members is usually drawn into question. In extreme crises, the meta-discourse converges on whether they ought to be “booted” (removed) from the list. What I read in the preponderance of meta-discourse in cc list flame wars is the way informal mechanisms of social control (i.e., argument, ridicule, shame, avoidance)—rather than appeal to any administrative or regulative order—served to discipline list participation.

The second discovery that arose from my analysis of cc list flame wars was an intense appreciation for the strength of my informants’ disavowal of censorship to the point of refusing to delete anyone from the list. “Eradicated” or “de-rezzed,” were two words used in the debate that convey the sense in which deletion from a

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30 The term “de-rezz” comes from “de-resolve,” meaning “to disappear or dissolve,” and was “invented as fictional hacker jargon” for the movie Tron, “and adopted in the spirit of irony by real hackers years after the fact” (The Jargon File, http://www.catb.org/jargon/html/D/de-rezz.html, accessed August 19, 2008).
mailing list is equivalent to banishment and was discussed with commensurate concern. In studying flame wars on the cc list, I came to see the absence of regulative rules as representing, not an omission, but the paramount value of freedom (and its corollary individualism). What emerged clearly in the third flame war was that the lack of a cc list policy was policy itself. Further, even though the dispute over expulsion resulted in the first statement of a “policy for the cc list” in that forum’s history, no one was ever removed from the list and the policy itself, as I will show, was not articulated in terms of communally recognized standards or principles.

Hise, one of Cyborganic’s volunteer sysadmins and, thus, a person with the technical permissions to remove others from the list, introduced the question of expelling Thomas when he put the proposition forward for an on-list vote. This drew immediate fire from the volunteer who had been administrating the cc list, Home, stating that he was “the only person who should be making threats about kicking people off” and that he had “no intention of kicking [Mike] or anyone else off this list.” In a subsequent e-mail, Home identifies convention and the labor he contributes in maintaining the list as sources of his authority and explains his understanding of the list administrator’s role in the community.

All I actually said was I was the administrator of the list, and that as such, should be responsible for establishing the guidelines of the list, in the same way that you do as host of your conference on the WELL. Cyborganic lacks the background set of policies that the WELL does, so in theory, Cyborganic list administrators are entirely on their own in trying to understand the needs of the community that their list is supporting and establishing a working set of posting guidelines accordingly. It was never explained to me that Cyborganic system
administrators played a role in that; this is not common practice, as I understand it. I am the system administrator on my own machine, superdeluxe, and in the same way that I would never consider reading another user’s email I would never consider dictating list policy to a user hosting a list on my machine. This situation is obviously different; the cc list has been around for a long time and has been maintained by several people before me. (James Home, e-mail to the cc list, August 4, 1998, emphasis added)

The conundrum Home expresses it that, though sysadmins do not usually establish “posting guidelines,” because Cyborganic “lack[ed] the background set of policies” and the cc list was not moderated, it fell to him to “try to understand the needs of the community” and support them. When Home came down firmly against kicking anyone off the list, the vote to expel Thomas stood nine in favor, none against, and Home accordingly stated his willingness to relinquish the administrator role if “someone would like to take over that duty.” Hise, who initiated the vote to expel Thomas, responded immediately, offering to “take over as list admin.”

After Home entered the debate over Thomas on the cc list, speaking authoritatively in his role as administrator, there was a chorus of support for his move to stop the voting, opposition to kicking anyone off the list, and assertion that flame wars over Thomas were “part of Cyborganic history.” Though voting ceased, the discussion of underlying issues continued for days. Discourse focused on whether the imposition of any sort of standard for participation was, at one end, tantamount to censorship or living in a racially segregated, “gated community;” or, on the other, necessary to the very notion of community itself. No consensus was
reached. Debate only intensified after Hise, in his new role as cc list administrator, posted the list’s first official statement of policy, excerpted below.

Ok, this is going to be the list policy that gets sent out to all new subscribers. If anyone has problems with it, let’s discuss it, but I think it’s very fair. Please note the last paragraph. It is in force, as of now. …

Controversy and debate are welcome and encouraged on this list, but personal attacks on individuals or groups, hate speech, and other socially inappropriate behavior will not be tolerated. The list moderator and the owners of the machine on which this list is hosted reserve the right to remove anyone from the list at any time. Such removal will be announced to the list membership. (Steev Hise, e-mail to the cc list, July 30, 1998)

This is essentially the same rule by which Home had operated: the list administrator establishes the rules. The departure lies in having a formally articulated policy. Rather than set a community standard, the policy reserved the right to regulate “socially appropriate” behavior for “the list moderator and the owners of the machine” hosting the list. Though the message came from Hise (who uses the pronoun “I”), Steuer’s signature block (identifying and contact information automatically appended at bottom of e-mail messages) appeared at the end of it. Whether this inclusion was intentional, or a mistake from cutting and pasting, it implies that Hise sent the policy statement to Steuer for his approval before posting it to the cc list.

What is anthropologically interesting in this flame war and the policy it produced is what it reveals about Cyborganic’s mechanisms of social order. In the conflict between systems administrators, Hise appealed to democratic legitimacy and
procedure in calling for a vote, while Home drew on his authority as list administrator and knowledge of the community. Neither one, however, had any ultimate authority over the cc list. Both the Cyborganic domain name and the machine that hosted the list were Steuer’s personal property and it was he who authorized Home and Hise to serve as volunteer administrators. Steuer’s approval of the new list policy is implied by the presence of his signature on its announcement. However, though he sent messages to the cc list on other subjects during this flame war, Steuer never joined the public discussion about expelling Thomas. My reading of this is that, while Steuer’s authority over the list was both de facto and de jure (i.e. legitimated by law), given the culture of freedom the very fact of this power requires him to be especially “hands-off” about exercising it in the community. He must not act like “the man” and must distance himself from even the appearance of authoritarianism in community matters, not despite, but because of his ownership of the machine and overall leadership of the Cyborganic project. As my analysis of cc list flame wars indicates, Cyborganic’s lack of rules governing social action (“administrative and regulative orders”) was not an omission, but an articulation of individual freedom as the paramount cultural value. However, as many vehemently argued in these flame wars, granting priority to this value over all others makes it difficult to “protect the actors’ enjoyment of the resulting benefits” of their collective action (Weber 1978:51). In conditions where it was challenging to establish any regulative order on the mailing list—the only community forum that afforded public, deliberative discussion—the difficulties involved in developing clear and common
principles for Cyborganic’s community project become apparent. In this context, constrained by time pressures and concern for status, it would have been exceedingly difficult for members of the community to work out thorny issues of valuation and allocation and find innovative ways of bridging the gap between Cyborganic’s entrepreneurial and communitarian projects. Given that the projects were, as I have argued throughout this ethnography, symbiotic and mutually defined, these were significant problems. The community’s consensus against rules and policies, and preference for individual mechanisms of social control that were either (a) technical, such as filters, or (b) informal, such as public discourse and criticism, expresses the central paradox of Cyborganic’s project for life. In an environment where life was mediated by work, community and business were symbiotic, and freedom a priority, it was clearly pragmatic to avoid unnecessary rules and the “administrative overhead” required to establish them. The paradox is that this leaves no basis, no place, for establishing protocols for community participation, let alone for the more utopian aspects of Cyborganic’s project for life.

The same paradox, or gap, appears many times in my field study of geek community mailing lists, illustrating time and again a preference for technical rule (i.e., using filters or unsubscribing) or closing a community forum altogether over ejecting anyone by fiat, or establishing guidelines for posting. For example, Moseley, who ran the Maz server and “pals” mailing list for many years, reported that because everybody told someone else about the list, it was impossible for him to control
subscription. Twice he had found the list so large and unmanageable—“too much noise, not enough signal”—that he decided to close it down. This case repeats another pattern both basic and paradoxical, namely that these community forums are invariably hosted on machines that are the private property of individual men. While custom and culture constrain the mechanisms of social order available to them, they are ultimately the only owners of these mailing lists whose legitimacy is sanctioned by the State. In these conditions, the options tend to be rather binary. People are either expelled or not, but guidelines for participation do not emerge. Mailing lists either survive without such explicit guidance, or are shut down. All the bandwidth collectives and community mailing lists encountered in my field research were or are run on machines owned by individual men. In this regard, they share a common structure and character of personal power that I liken to “big-man” authority, a concept drawn from Marshall Sahlins (1963).

Sahlins distinguishes the Melanesian “big-man” from the Polynesian chief as political types, first by noting that while Melanesia and Polynesia have similar economic bases, societies in these regions differ markedly in “scale, structure and performance” (against Colonial incursions):

a survey of Melanesian…societies [concluded] that ordered, independent political bodies in the region typically include seventy to three hundred persons; more recent work in the New Guinea Highlands suggests political groupings of up to a thousand, occasionally a few thousand, people. But in Polynesia sovereignties of

two thousand or three thousand are run-of-the-mill, and the most advanced chiefdoms, as in Tonga or Hawaii, might claim ten thousand, even tens of thousands. Varying step by step with such differences in size of the polity are differences in territorial extent: from a few square miles in western Melanesia to tens or even hundreds of square miles in Polynesia.

So instead of the Melanesian scheme of small, separate, and equal political blocs, the Polynesian polity is an extensive pyramid of [ranked lineages] capped by the family and following of a paramount chief…

Here is another criterion of Polynesian political advance: historical performance. Almost all of the native peoples of the South Pacific were brought up against intense European cultural pressure…. Yet only the Hawaiians, Tahitians, Tongans, and to a lesser extent the Fijians, successfully defended themselves by evolving countervailing, native-controlled states. (Sahlins 1963:287-88)

Sahlins draws from these “grand differences…a more personal contrast” between two types of leader-figure, the big-man and the chief (1963:288). While chiefs have many formal mechanisms of social order, big-man isn’t so much a political title…[as] an acknowledged standing in interpersonal relations…a cluster of followers gathered about an influential pivot. It socially implies the division of the tribe into political in-groups dominated by outstanding personalities…what the big-man is doing: amassing a ‘fund of power.’ (Sahlins 1963:289-92)

The comparison I make between the kind of social organizations that form around Melanesian big-men and bandwidth collectives is structural, not an argument that Cyborganic was a tribe. Yet the similarities are suggestive and point to my argument in the next chapter about the limitations of communities like Cyborganic in effecting the type of social change their communitarian projects aim to realize.

In this field—of work-work and life-work, complex negotiations of status, and other constraints on establishing new mechanisms of social order—the tensions
between Cyborganic’s entrepreneurial and utopian practices and imaginaries emerge, not as superficial phenomena, but as structuring forces that produced a number of gaps and paradoxes in the project. Reflecting on these tensions in 2004, Haig explained one paradox in response to the question: “Can you say anything about the community/corporation dynamic?”

Ah, well, that’s the crux of the biscuit isn’t it? The community outlasted the corporation, and it still exists in a very skeletal tattered form it seems to me. Cyborganic as group identifier is largely extinct, but from my own involvement on the tech list I know Cyborganic still exists. It seemed to me that all those people started out as raver friends and as they got older and the thrill started to wear a little thin Cyborganic provided a focus for continued fun and creativity and a wee bit of sobriety out of the bargain, insofar as they tried to make a bloody corporation out of a pack of friends and their talents. So in that sense, the Cyborganic Community lived on far longer than those group friendships might have without that drive to create the Corporation. On the other hand, the drive to create the Corporation damaged or destroyed many of the individual friendships. (Dan Haig, questionnaire response, September 15, 2004)

Constraints, tensions, paradoxes and all, Cyborganic’s cultural commune and the many individually led projects for life it supported and seeded, testify to both the defensive and creative powers of community. The mutually constructive and conflicting relationship between commerce and community that Turner observed for the WELL, and that I have reported in the case of Cyborganic, are also reflected in the characterization Castells gives of urban social movements as “symptoms of our own contradictions, and therefore potentially capable of superseding these contradictions” (1997:61). Though the scale and terms in which these movements address the issues of our time are not “adequate to the task,” and though they are
based in resistance, they nonetheless “produce new historical meaning…by nurturing the embryos of tomorrow’s social movements within the local utopias” they construct (Castells 1997:61).
Chapter Seven

Cyborganic and Social Change: The Power and Limits of Community

Never doubt that a small group of thoughtful, committed citizens can change the world; indeed, it’s the only thing that ever has.

Margaret Mead

Margaret Mead’s maxim that small groups of committed citizens can change the world is probably the most well known statement an anthropologist has ever made. Though it does not appear in Mead’s publications, and no primary source is ever cited,¹ it has become the motto for many organizations and movements in the U.S. The aphorism is also popular among Americans individually, appearing in high school term papers and yearbooks, and on plaques and bulletin boards in government, corporate, and other institutional offices (e.g. universities and non-governmental organizations). The small group of committed citizens who can change the world seems to be an image of social collectivity with which Americans want to

¹ “Despite copious searching, the origins of the quotation most associated with Margaret Mead, ‘Never doubt…’ remain a mystery. When a source is cited, …it is always secondary” (Keyes 2006:xvi). The Institute for Intercultural Studies has the quotation as their motto, explaining on their website: “Although the Institute has received many inquiries about this famous admonition by Margaret Mead, we have been unable to locate when and where it was first cited, becoming a motto for many organizations and movements. We believe it probably came into circulation through a newspaper report of something said spontaneously and informally. We know, however, that it was firmly rooted in her professional work and that it reflected a conviction that she expressed often, in different contexts and phrasings.” (The Institute for Intercultural Studies. “Frequently asked questions,” http://www.interculturalstudies.org/faq.html#quote, accessed August 27, 2008)
identify. It is a popular social imaginary that I recall to introduce two topics central to the concluding arguments of this study. One is the characteristically American social imaginaries exemplified in Cyborganic. The other is the question of social change inherent in the Cyborganic project itself. Both pertain to my objective of advancing a cultural critique of the narrative of social revolution through technology. To approach these broad subjects, however, I begin with the more basic question of whether and how Cyborganic changed the world. That is, I start with an analysis of the power and limits of Cyborganic as a project for social action.

As I have argued throughout this work, Cyborganic’s business and community, its online and onground dimensions, must be taken altogether as a whole. This applies as well to a consideration of outcomes. Many of my informants have made statements to the effect that the Cyborganic business failed, but the community was a success. They refer to the fact that, after being bootstrapped with personal resources, volunteer labor, and small investments for three years, the business failed to raise the capital needed to open a Cyborganic café, ran out of funds, and filed for bankruptcy. As a start-up aimed at producing market value for investors and stakeholders, it was ultimately unsuccessful. In practice, however, this was not the only goal of the company or its principals (all of whom had less risky options had business success been their sole motivation). The project to create an exemplary community demonstrating Cyborganic’s online-offline vision was central to the business enterprise. As much or more effort went into actually realizing this
community as into launching a company with a viable revenue model, though as I have shown, the efforts were essentially inseparable. Therefore, in this assessment, I look holistically at Cyborganic’s project to build a local community around the production and use of networked media.

As chapters 4 and 5 illustrate, Cyborganic joined place, technology, and community in productive relationships that contributed to the development of Web publishing through new firms, software, and process innovations. In its focus on community and promoting Web publishing among its members, Cyborganic prefigured many of the norms and forms of media production and consumption dominant on the Internet today. It created a milieu in which personal publishing and networked social media could be imagined, practiced, and commonly understood. At a time when popular audiences were just coming to the Internet, Cyborganic was innovative and representative of a new generation of Internet culture that has since become dominant on the Web. Moreover, as a cultural commune, Cyborganic provided its members support, meaning, and identity for almost a decade; and modeled practices they have since taken up in managing their social relations and daily lives. In these respects, one could say that Cyborganic served to change the world. In doing so, the project demonstrated that: (1) physical proximity and face-to-face communication create context for interaction online; (2) creating diverse media and channels for communication (mailing lists, chat, the website, TND) encourages broad participation; and (3) bringing a range of people with different skills (“artists
and techies”) together in informal, socializing around a common interest (new media)—and fostering a gradient of participation levels and types—is productive of innovation and collective action.

These contributions notwithstanding, Cyborganic was not entirely oppositional to mainstream U.S. society, but clearly embraced some of its dominant values and institutions—freedom, individualism, technophilia, the venture financed business start-up, advertising-supported media. As chapters 4 and 5 illustrated, sharing some dominant practices and imaginaries was extraordinarily productive and advanced Cyborganic’s project in a number of ways. However, as chapter 6 detailed, it also resulted in tensions and discord between the community’s entrepreneurial and communitarian orientations. In making a grounded (i.e., non-theoretical) analysis, I arrange the phenomena I have described variously as tensions, paradoxes, and gaps around four interconnected points.

1. **The community**—as a demonstration that such communities could be a new source of market and other value—was in some sense what Cyborganic was marketing to venture investors and the press. Local community hosting was the service Cyborganic proposed to turn into a profitable business. Yet, conflicting incentives and tensions inherent in the relation of corporate goals and community interests were not recognized or addressed in an organized way. When the Ramona neighborhood and weekly potluck dinners (TND), created voluntarily in the name and spirit of community, were assimilated into the business project,
accounts were never reconciled. What I mean is, after a history as lived
experiment and “labor of love,” the project was incorporated as the Cyborganic
Corporation. But, neither at this juncture nor after, were measures taken to
reconcile contributions made on the basis of reciprocity and volunteerism with
the institutional systems that incorporation introduced alongside them—wage
labor, contracts, job descriptions, corporate and employment law. One result of
this disjuncture, or gap, it that compensation for (and control over) individual
contributions became key sources of conflict within the Cyborganic project:
“Feelings of exploitation and resentment about payment, and for what kind of
effort” developed among the company’s principles as well as the wider
community of volunteers. (IFTF 1997a:31)

2. **Feedback and Collaborative Social Orders:** After the initial open-call meetings
of early 1994, community members were not directly involved in developing the
Cyborganic vision, or shaping its plans, and core principles. The project gained
only limited, informal community feedback, one of the primary benefits of peer-
to-peer collaboration (Raymond 1999; Moody 2001; Weber 2004). This feedback
gap sparked “dissent and frustration among members” and, while it “did not
prevent them from working individually and collaboratively in developing
artistic, community-oriented projects with new media,” this was “not…a
strong community of gifts,” as the 1997 IFTF report on Cyborganic suggested. (IFTF 1997a:31-33)

3. *Growth* and collaboration without establishing rules of social action in the community as a whole produced limited accountability. While there were intense discussions on the Cyborganic mailing list over expelling a subscriber and whether being a community justified any sort of constraint on individual freedom of speech, this did not lead to establishing mechanisms of social order for the community beyond such automated and individuated tactics as mail filters and subject lines. Limited accountability in all directions—*to* and *from* the community and project (leaders)—impeded sustained collaboration and contributed to waning participation as individuals lost a sense of how their participation fit within the project and community as a whole.

4. *Time:* In addition to the constraints that working time imposed on members individually, Cyborganic was defined through other temporal limitations. At the most basic level, economic cycles of boom and bust, the “gold rushes” and “ghost towns,”2 and high mobility of U.S. society created conditions of turnover that made it difficult to sustain the community against them. Though Cyborganic’s community survived the business by several years, and no identifiable events precipitated its dissolution, it nevertheless petered out.

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2 Both are terms that appeared several times in informant interviews, field notes, and writings (emic and etic) about the rise, and subsequent downturn, of the Web industry.
gradually as members “moved on” in various senses. A more complex temporal limitation lies in the fact that, as I have noted several times, Cyborganic was an age-cohort, most of its members were in their twenties, in transition from student to independent adult life. To the extent that this life-stage transition was the impetus for participation, Cyborganic would be structurally limited by its members aging out of their liminal status “betwixt and between” institutions of family, school, and marriage (Turner 1969:95). However, given the increased age of first marriages, decreased incidence and duration of marriage in the U.S. generally, and new practices of coupling, this model of life-stage transition does not fit in every case. For example, the trend of joint property ownership (“co-housing”) among the bandwidth collectives discussed, represents an extension of Cyborganic’s techno-social vision, not a transition to pre-existing institutions of adult life. A good number of Cyorganics have married, moved into single-family residences, and had children. Whether and to what extent they have imported norms and forms of sociality developed in Cyborganic remains a matter for further empirical investigation. In the absence of such intergenerational connections, however, Cyborganic’s age-homogeneity places another limitation on the capacity for social change: an imaginary of community that, in contrast to society at large, includes only a single generation and thus limits access to other generational cohorts and networks.
Reflecting at a higher level of abstraction, I identify in these tensions, gaps, and paradoxes of Cyborganic’s project, certain limitations on the community’s capacity for social change, not simply of the dominant values and institutions that were generally shared, but also those opposed and resisted through its cultural commune, its project for life. First, though extraordinarily productive, the social imaginary of community was unsupported by administrative and regulative social orders beyond those of the business project. As I have argued, the culture of freedom and “dominant trend” toward “networked individualism” (Castells 2001:128-129) in contemporary society made it difficult for my informants to see this gap as a problem, let alone address it as a constraint on the community project.

Each of the tensions and limitations discussed bespeaks the central paradox of Cyborganic: it challenged certain effects of the dominant order, but not their premises. For example, the new user-generated media countered conventions of top-down publishing, but adopted the same mass-media model of advertising-supported “content.” In Cyborganic, as in geek culture generally, even those practices and imaginaries that challenge mainstream norms are often justified in terms of dominant values. The renaming, or “re-branding,” of free software as “open source” that took place in the 1990s provides a very visible example of this pattern. Free software, a

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3 Eric Raymond, who was present at the 1998 “strategy session” where the term “open source” was introduced, referred to the name change as “re-branding” in an interview with the author on December 16, 2000. Tim O’Reilly, who coined the term “Web 2.0,” was an early recruit to the campaign to promote open source software to business. (Raymond 1999:205)
social movement started by Richard Stallman in 1983, opposes both the practices and principles of proprietary software. However, in an effort to make free software “palatable to Wall Street” a campaign to change the name was initiated in early 1998, just after Netscape announced it would release the source code for its Web browser as free software (Tiemann 2006). The goals of the name change were (a) to obscure, or disavow, free software’s principled opposition to dominant institutions of intellectual property; and (b) to emphasize instead the technical fact of openness⁴ and its practical benefits.

Some of the proponents of “open source” considered it a “marketing campaign for free software,” which would appeal to business executives by citing practical benefits, while avoiding ideas of right and wrong that they might not like to hear. Other proponents flatly rejected the free software movement’s ethical and social values. Whichever their views, when campaigning for “open source” they did not cite or advocate those values. The term “open source” quickly became associated with the practice of citing only practical values, such as making powerful, reliable software… Nearly all open source software is free software; the two terms describe almost the same category of software. But they stand for views based on fundamentally different values. Open source is a development methodology; free software is a social movement. For the free software movement, free software is an ethical imperative, because only free software respects the users’ freedom. By contrast, the philosophy of open source considers issues in terms of how to make software “better”—in a practical sense only. (Stallman 2007, emphasis added)

⁴ That is, to direct attention to the fact that the underlying code of free/open software is visible and manipulable by any user. “Free” in Stallman’s usage refers to freedom to access, change, and redistribute source code. It is not a prohibition on charging money for software, but on locking away ideas and techniques as proprietary.
The re-naming campaign was tremendously successful and, following Netscape, other large corporations (e.g., IBM, Oracle) subsequently embraced open source initiatives. More recently, the trend in academic literature has been to combine the names as F/OSS, which stands for “free/open source software.”

The re-branding of free software is but one example of a recurring pattern in which countercultural projects pursuing social transformation in everyday life come to contribute to the very systems of power and wealth they set out to resist. Turner observed this in arguing that the WELL’s success in realizing the New Communalist vision simultaneously “mark[ed] the failure of the…movement to escape the pull of America’s technological and economic centers of gravity” (2005:511). As I have argued in this chapter and the last, the case of Cyborganic suggests a similar paradox. Trying to understand the wider cultural context of this long-term pattern led me to a set of insightful essays by Langdon Winner that situate late twentieth century discourses of “the computer revolution” within a broader narrative of social revolution through technology that has been central in the American popular imagination for over 150 years.
Social Revolution Through Technology: Imaginary, Ideology, and Myth

A recurring fantasy of industrial society expects relief from...thoroughgoing estrangement in the coming of a new technological system...Dreams of instant liberation from centralized social control have accompanied virtually every important new technological system introduced during the past century and a half. The emancipation proposed by decentralist philosophers as a deliberate goal requiring long, arduous social struggle has been upheld by technological optimists as a condition to be realized simply by adopting a new gadget. This strange mania...is alive and well among those who celebrate the advent of the computer revolution.

Langdon Winner (1986:95-96)

Engaging my Cyborganic analysis in the context of Winner’s essays in The Whale and the Reactor (1986) contributed to the third objective of this work: advancing a cultural critique of contemporary discourses that celebrate networked social media as revolutionary. First, Winner’s argument that “dreams of instant liberation...have accompanied virtually every important new technological system introduced during the past century and a half” led me to recognize Cyborganic’s place, or situatedness, in the history of utopian experiments and intentional communities in the United States. Second, Winner identifies in this history a dominant cultural narrative of social revolution through technology, which he critiques in the context of late twentieth century attitudes to technology. Together, Winner’s analyses further my cultural critique of utopian discourses about the Internet, showing them to be neither as new nor as revolutionary as commonly conceived.
From John Winthrop’s Puritan “city upon a hill” (1630), to the many intentional communities of the 18th and 19th centuries—both religious (Shakers, Rappites, Moravians, Hutterites, the Oneida community) and secular (New Harmony, Brook Farm, Fruitlands, Skaneateles, Nashoba)—the U.S. has long been a “place where utopias of the most diverse kind could be realized” (Kumar 1991:82). The earliest utopian experiments entailed forming new settlements apart from an existing society regarded as corrupt. However, in the 19th century, positivism and scientific rationality brought evolutionary theory to understandings of society (Saint-Simon, Fourier, Comte, Spencer, Marx), which critically shifted utopian thinking away from idealist, often spiritually inspired, separatism toward “schemes for the total transformation of society” (Kateb 1972; Spann 1989). Whether rural or urban, such schemes generally took the form of exemplary communities intended to demonstrate the virtues of their vision to society as a whole (Hasbrouck 2001). As a secular (“for the here and now”) and prescriptive (“demanding to be integrally carried out”) project to build a model community⁵, Cyborganic can be located within this longer history of utopian social experiments in the U.S. Situating the project in this context enabled my analysis and cultural critique in two key ways. First, it elucidated the genealogy and character of Cyborganic’s utopian project. Second, it fixed attention on a particular vision of technology and social change that has been prominent in the American popular imagination since the mid-19th century.

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⁵ Here I employ Taylor’s terms and schema of modern moral orders (2007:7).
In his examination of “the appropriate technology movement of the middle 1970s,” 6 Winner draws on scholarly histories of “communitarian socialism in America” to point to a common cultural vision of “demonstration models” as “orthodox forms of technical and economic practice.” The pragmatic materialism of this vision, he argues, paradoxically subverts revolutionary transformations of society by framing social reform in terms of delivering “a superior product,” that is, “building a better mousetrap.” (Winner 1986:61-84)

As scholars Arthur Bestor and Dolores Hayden have observed, nineteenth-century American utopians…believed their technical inventions and social innovations would have a strong appeal to an age undergoing rapid change. *Communities such as those at New Harmony and Oneida saw themselves perfecting what Bestor calls “patent office models” of the good life.* In the same way that ordinary people would eagerly accept new improvements in farm machinery if a convincing demonstration were given them, so would they be willing to embrace the principles and devices of utopia if a successful working model could be built and maintained somewhere in the world.

Insofar as they had a coherent idea of how their labors would change the world, the appropriate technologists usually entertained the better mousetrap theory. A person would build a solar house or put up a windmill, not only because he or she found it personally agreeable, but because the thing was to serve as a beacon to the world, a demonstration model to inspire emulation…People would, in effect, vote on the shape of the future through their consumer/builder choices. This notion of social change provided the underlying rationale for the amazing emphasis on do-it-yourself manuals, catalogues, demonstration sites, information sharing, and “networking” that characterized appropriate technology during its heyday. (Winner 1986:79, emphasis added)

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6 Winner cites *The Whole Earth Catalog* as exemplary of the vision of technology as “a realm of intimate, personal power” that informed the movement for appropriate technology (1986:65-66).
Winner highlights *The Whole Earth Catalog* (1968) as a prime example of the vision of social transformation through technology that informed the appropriate technology movement.

*The Whole Earth Catalog* assumed that throngs of people would be moving off into small, humanly nurturing, economically self-sustaining communities that fit into a new complex world system destined to save the earth from the destruction of overindustrialization. In this vision choices about the right technologies—both useful old gadgets and ingenious new tools—mattered greatly; choices about politics mattered little…The catalogue-browsing consciousness of the New Age was not one that wanted to be bothered by well-reasoned arguments. (Winner 1986:66)

His interpretation of the preference for demonstration models over “well-reasoned arguments” as not wanting “to be bothered,” does not engage emic understanding, and, thus, is not a cultural or immanent critique. Yet, Winner’s critical insights echo Turner’s arguments about the New Communalists of *The Whole Earth Catalog* and the WELL.

Winner’s critique identifies exactly the basis on which Turner distinguished the New Left from the countercultures exemplified in *The Whole Earth Catalog*—a vision of the relation between technology and social change. As Turner notes, both segments of the counterculture sought to “transform the technocratic bureaucracies that, in their view, had brought Americans the cold war and the conflict in Vietnam. Both also hoped to return Americans to a more emotionally authentic and community-based way of life” (2005:493). However, while the New Left pursued these goals by engaging the political structures of U.S. society, Turner explains:
Many members of the counterculture…stepped away from agonistic politics and sought instead to change the world by establishing new, exemplary communities from which a corrupt mainstream might draw inspiration. For this group, whom I will call the New Communalists, as for many others in the counterculture, the key to social transformation lay not in changing a political regime but in changing the consciousness of individuals. (Turner 2005:493, emphasis added)

In this way, both Winner and Turner serve to ground the Cyborganic vision in a broader narrative of social transformation through technology that they and others identify in the history of utopian communities in the U.S.

As a conscious project to create an exemplary community online and onground, Cyborganic was itself utopian in aspiration. Turner’s New Communalists and the virtual-communitarian lineage of Internet culture (Castells 2001), join my informants to the broader history, and techno-social legacy, that Winner and other scholars have surveyed. Their most direct and concrete links to this history lie in Cyborganic’s many connections to the WELL. The WELL’s first managers—Matthew McClure, John Coate, Cliff Figallo—were all long time members of The Farm, a commune in Tennessee founded in 1971 by former San Francisco State University professor Stephen Gaskin and several hundred Bay Area hippies (IFTF 1996; Fike 1998; Turner 2007:147). At the Farm, as Figallo explained in a 1997 Wired magazine article, “We were conditioned to respond to the Community Imperative—the need to build and maintain relationships between people and to preserve the structure that supported those relationships” (Hafner 1997). Most Cyborganics (myself included) were unaware of The Farm as they
embarked upon their own projects for the good life in the 1990s. Yet, the
“Community Imperative” forged at The Farm and propagated through the WELL
was a formative influence on Cyborganic. It has since become a dominant social
imaginary in Internet geek culture. The sway it has exerted has led some to call the
WELL “the world's most influential online community” (Hafner 1997).

The cultural history I presented in chapter 3 described the ways the vision of
computing that shaped the Internet was taken up by segments of the counterculture
within which personal computing was developed. 7 Observing that these
technological developments have been called, variously, the “information
revolution,” “network revolution,” and “personal computer (PC) revolution,” Winner
identifies in this pattern a narrative of social revolution through technology found in
“patent office models of the good life”—a particular vision of the relation of
technology to society—that has been prominent in the American popular imagination
since the mid-19th century (1986:79, 98).

In his sharply critical essay, “Mythinformation,” Winner questions the
widespread consensus that affirms “revolution” as the best metaphor for the
sweeping changes associated with the “use of computers and advanced
communications technologies.”

Those who employ it to talk about computers and society…appear to
be making…serious claims. They offer a powerful metaphor, one that

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7 That is, the vision shared by Vannevar Bush, J.C.R. Licklider, Douglas Engelbart,
and others, of the computer as a communications tool for general, non-specialist use.
invites us to compare the kind of disruptions seen in political revolutions to the changes we see happening around computer information systems (Winner 1986:99).

Deciding to “take that invitation seriously,” Winner considers whether the revolution implied by the metaphor is political, and if so, what ends and ideals guide it; or whether it is, instead, like the Industrial Revolution. He finds writings on the computer revolution “conspicuously silent” about its ends and “consistently ahistorical” in viewpoint (1986:102). Yet, he observes that politics is nevertheless integral to the metaphor and narrative it bespeaks. “Of all the computer enthusiasts’ political ideas,” he writes, “there is none more poignant than the faith that the computer is destined to become a potent equalizer in modern society” (1986:112). “Taken as a whole,” Winner argues, “beliefs of this kind constitute what I would call mythinformation: the almost religious conviction that a widespread adoption of computers…along with easy access to electronic information will automatically produce a better world for human living” (1986:105).

Noting that, as myths generally do, this one “contains elements of truth,” Winner begins his critique by questioning the substance of “the faith” that information technologies are a “potent equalizer” in modern society. First, he argues that just because the shift from industrial to service economies depends on computerization does not mean computers will be a primary source of new high-skill, high-wage employment. On the contrary, he cites studies that suggest the “vast majority” of new jobs will come in menial, low-wage service occupations. Second,
he notes that, while “computer romantics are…correct in noting that computerization
alters the relationships of social power and control,

they misrepresent the direction this development is likely to take. Those who stand to benefit most obviously are large transnational corporations. …Other notable beneficiaries of the systematic use of vast amounts of digitized information are public bureaucracies…that would operate less effectively at their present scale were it not for the use of computer power. (Winner 1986:106-107)

Rather than automatically dissolving inequality and centralized power, the long-term consequences of computerization are far more complex. Winner contends that “empirical studies of computers and social change” suggest “an increase in power by those who already had a great deal of power.” Thus, while he acknowledges the possibility that “a society strongly rooted in computers and telecommunications systems could be one in which participatory democracy, decentralized political control, and social equality are fully realized,” he concludes that “if there is to be a computer revolution, the best guess is that it will have a distinctly conservative character” (1986:107).

Next, Winner examines the logic of “mythinformation,” that is, the “key assumptions” on which political ideas about the equalizing power of information technologies draw. He identifies these as: “(1) people are bereft of information; (2) information is knowledge; (3) knowledge is power; and (4) increasing access to information enhances democracy and equalizes social power.”8 Winner examines

8 In his analysis of “the cult of information,” Theodore Roszak (1987) echoes the arguments Winner sets forth in this essay.
each of these assertions critically. He points out that the first two share a premise that
“mistakes sheer supply of information with an educated ability to gain knowledge
and act effectively based on that knowledge;” and that the third assumes an
“automatic, positive link between knowledge and power” that does not exist,
particularly when power is meant “in a political or social sense.” “Of the many
conditions that affect the phenomenon of power,” he notes, “knowledge is but one
and by no means the most important.” Finally, Winner argues that the fourth
assumption misconceives democracy as “first and foremost a matter of distributing
information.” Having demonstrated the faulty logic and flimsy argumentation
entailed in beliefs of mythinformation, Winner concludes that the formula
“information = knowledge = power = democracy lacks any real substance.” (Winner
1986:108-113)

At this point, Winner acknowledges that while he has critiqued ideas about
the power of information technology to bring positive social change as political
theory, they are in fact beliefs of a different kind.

Despite its shortcomings as political theory, mythinformation is
noteworthy as an expressive contemporary ideology. I use the term
“ideology” here in a sense common in social science: a set of beliefs
that expresses the needs and aspirations of a group, class, culture, or
subculture. In this instance the needs and aspirations that matter most
are those that stem from operational requirements of highly complex
systems in an advanced technological society; the groups most
directly involved are those who build, maintain, operate, improve, and
market these systems. (Winner 1986:113)
Thus, Winner contends that the groups most closely connected with the imaginaries of the latest technological “revolution” are “consumer/builders,” or as I have called them, “producer/users” affiliated in communities of practice and use. Winner’s contention holds true in the case of the WELL, a primary hub through which the imaginary of online community and legacy of pragmatic materialism characteristic of American utopias (i.e., exemplary communities, demonstration models of the good life) propagated through Internet culture in the 1990s. Whether writers, programmers, freelance journalists, or Grateful Dead followers, people on the WELL were producer/users of the networked social media that were (a) their primary channels of association; and (b) central to their imagined collectivity. All this holds true for Cyborganic as well.

Winner’s critique of what I call “cultural narrative” and he calls ideology, or “mythinformation,” is more dismissive of the emic understandings and experiences of “computer romantics” and “enthusiasts” than cultural critique affords. He characterizes them as “idle fantasy,” “faulty,” “thoughtless,” “superficial,” facile, gullible, and ultimately self-interested ideology. As he clearly recognizes, the beliefs, imaginaries, and practices that inform daily life do not have the consistency of theory, and cannot be accurately understood as such. Without extending his emic judgments to my Cyborganic informants, I recognize that there were many members, myself included, whose self-understandings (“what am I up to”) partook of the “build a better mouse trap theory” of the good life. When crises of legitimacy leave
people disillusioned with political and civic institutions, they build the places and collectivities to which they aspire in everyday life. This is the gist of Castells’ analysis of the defensive projects of cultural communes. Like the imaginaries that inform such projects, “build a better mouse trap” is not a theory. But neither, as I take up in the following section, can it be summarily distinguished as an “ideology” from the entrepreneurial and utopian social imaginaries discussed throughout this monograph. Before heading in that direction, however, I should conclude my third objective in light of Winner’s insights and critique.

The vision of technology and social change Winner identifies as prominent, if not dominant, in the American popular imagination since the mid-19th century, has been invaluable to me in grounding contemporary discourses around new media genealogically. His critique of earlier celebratory discourses of “information revolution” is largely consistent with the one I have made of similar discourses celebrating “social networking” and “Web 2.0.” It thus advances my third objective both empirically and theoretically, demonstrating that, however recent the technology, such discourses are nothing new nor are the transformations they celebrate necessarily social equalizers. The narrative of social transformation through technology Winner traces returns to the questions about social change with which I began. Specifically, it brings back the question inherent in the Cyborganic project about the power of small-scale communities to engage larger social institutions and structures. This is “the community question” addressed in chapter 1.
Whether it is asked in structural terms, or in terms of the social relations of everyday life, the concern and significance are the same—what effect can human-scale social forms, groups, and communities, have on the dominant social orders of their time?

This is also the question raised by the popularity of social imaginaries such as *community* and Mead’s “small group of thoughtful, committed citizens.” Each is a different formulation of the same, very human question of how the small-scale constructions in which we house ourselves engage the larger structures and forces within which we have to make a living and make a life.

**Social Change, Social Imaginaries, Social Theory**

By my reckoning the balance of work on which I have embarked, the questions of social change, all address very similar terrain, but each at a different tilt. So, I begin by taking up my earlier point about Winner’s use of the term “ideology” because it brings us directly to the heart and soul of the matter. Taken together (i.e., in narrative form), Winner calls beliefs about the inherently equalizing and liberating power of information technologies “an expressive contemporary ideology” (1986:113). The definition he provides for the term is not so different from Taylor’s characterization of the social imaginary as shared “images, stories, and legends… common understanding that makes possible common practices” (2002:106). By calling these beliefs and metaphors “ideology,” Winner challenges their revolutionary claims, casting them as basically conservative, representative of the particular “groups most directly involved” in building and maintaining the systems
and media they celebrate. His use of the term ideology recalls for me Paul Ricoeur’s admonition to preserve a tension in social imaginaries between ideology and utopia.

For Ricoeur those social imaginaries that drive a culture or affiliation toward “integration” or traditionally shared identities are “ideology;” while those that work toward rupture, difference, and discontinuity are “utopian.” While “ideology repeats what exists by justifying it, and so gives a picture of what is… Utopia has the fictional power of redescribing life” (Ricoeur 1986:xxviii). In Ricoeur’s “paradigm of imaginaries, ideology reaffirms and recollects a culture or affiliation’s ‘foundational symbols,’ while it is also inextricably tied to utopia, which offers both a critique of ideology and various projections of possible social worlds” (Hasbrouck 2001:13). The tension Ricoeur preserves between ideology and utopia has been instructive for my analysis of social change and social action. Most significantly, his paradigm was a reminder that integrative and discontinuous social imaginaries may counter one another but are inextricably linked. This has served me as a guardrail against falling into many venerable debates of the past around ideology: structure versus agency, resistance verses accommodation, and so forth. As I said at the start, this is an ethnographic study focused on a micro-level analysis of the Cyborganic case. Thus, I engage the questions of social change bound in the Cyborganic project in the spirit of Goethe’s “delicate empiricism,” which approaches theory only in intimate involvement with the object (Benjamin 1977).
The findings of my case study show that Cyborganic can be understood both as a cultural commune and in the context of urban social movements. In making this analysis I have drawn on Castells theorization of “three forms and origins of identity building” and their “outcome in constituting society.”

*Legitimating identity*: introduced by the dominant institutions of society to extend and rationalize their domination vis à vis, social actors… *Legitimating identity generates civil society*

*Resistance identity*: generated by those actors that are in positions/conditions devalued and/or stigmatized by the logic of domination, thus building trenches of resistance and survival on the basis of principles different from, or opposed to, those permeating the institutions of society… *identity for resistance* leads to the formation of communes, or communities…

*Project identity*: when social actors, on the basis of whichever cultural materials are available to them, build a new identity that redefines their position in society and, by doing so, seek the transformation of overall social structure… *project identity*, produces *subjects*. (Castells 1997:8-9)

In the second volume of his trilogy on network society, Castells argues “a crisis of legitimacy” is sapping the “meaning and function” of “the institutions of the industrial era” and that in this context communal resistance becomes more significant as the basis for identity, meaning, and social action (1997:354).

I propose the hypothesis that the constitution of subjects, at the heart of the process of social change, takes a different route to the one we knew during modernity, and late modernity: namely, subjects, if and when constructed, are not built any longer on the basis of civil societies, that are in the process of disintegration, but as prolongation of communal resistance. (Castells 1997:11)

From this overview, it is clear that my analysis of Cyborganic as a cultural commune focused on resistance as the basis for identity construction and meaning within the
community. Yet, I also spoke of Cyborganic as a “project for life,” part of an urban social movement (“back to the city”), and touched on the “geek” identity constructed in conjunction with the early Web and spread of free and open source software.

Given that Castells specifies resistance identities “can also be built by, and around, proactive social movements,” and that project identities can grow from resistance, there is nothing problematic in associating Cyborganic with both resistance and project identities (1997:356). The problem lies in understanding how well the community fits either categorization and whether legitimizing identities play any role.

Let me address these questions by going through the three forms of building meaning and identity in society that Castells delineates and considering the Cyborganic case in light of each.

(1) *Legitimizing identity:* As a California Corporation, Cyborganic’s business connected the project to dominant institutions, administrative, and regulative orders (legal, financial) that certainly extended their logic and domination to social actors in many ways. Cyborganic members were connected individually to the same dominant orders as workers in the Web industry. Universities were another source of legitimizing identity in the community overall, both in terms of qualification and alumni networks. Yet none of these can be seen as generative of civil society in the Cyborganic case. Thus, I leave this form of identity aside and focus on the other two.
Resistance identity: As an intentional community, a cultural commune, Cyborganic originated in and took the form of a resistance identity. Though it differs markedly from the fundamentalist and nationalist communes Castells examines, and, if anything, opposed, or re-imagined “traditional values of God, nation, and the family,” Cyborganic nonetheless drew on traditional values and imaginaries of local community, neighborhood, and the City, that is, “territorial identities” (1997:60-64, 356). However, Cyborganic members do not seem to have occupied positions or conditions of devaluation or stigma, unless their youth and recent entry into the job market and professions be counted as such. Castells has named the separatist tendencies of cultural communes “the exclusion of the excluders by the excluded,” but Cyborganics maintained a high degree of “reciprocal communicability” with the dominant orders (1997:9). They were not excluded, and did not entirely exclude, dominant institutions and ideologies. They did not reject dominant narratives of technology, “garage start-ups,” and “IPOs.” They did not establish their community at a remove, but congregated instead in SOMA, San Francisco’s revitalized urban zone. Nothing in Castells’ theory requires exclusion: resistance identities may be voluntary, but Cyborganic shows an interesting variance suggesting that in contemporary society even the “included” require havens from the large-scale, global forces of flow.
(3) *Project identity:* Considering whether Cyborganic also built a project identity focuses most directly on my final question of social change. During the 1990s, in conjunction with the rise of the Internet industry and open source movement, a new geek identity came together on the Web: it descended from the four-layer, pre-Web, Internet culture, but was influenced, as well, by popular culture, the rave scene, and other “Generation X” subcultural lifestyle phenomena (e.g., in terms of sexuality, recreational drug use, body decoration, music consumption and production, and such). In contrast to the hacker identity most associated with pre-Web Internet culture, geeks are not all programmers (“coders”) but enthusiasm for, and knowledge and mastery of, computing technologies remains the basis of this identity. In this way, geeks represent the extension of the Internet and forms of techno-sociality developed there in the 1970s and 80s into all arenas of life. Networked social media, which other than telephone-based networks (BBSes), had been largely confined to institutional and occupational settings, came out into the world at large, into homes and lives in new ways, on new bases (i.e., social, recreational, personal). As the Internet moved beyond the community of technical scholars within which it originally developed, its producer/users, too, became more diverse, less focused on the underlying protocols, and more on the production and consumption of media. Like “hacker,” “geek” is a status identity associated with technical prowess and connection to “old sk00l” (old school), Internet culture. The open source movement did much to promote the
geek identity. With many wider initiatives applying open source practices and imaginaries to creative work other than computer software (e.g., Creative Commons, MedCommons), it represents the mostly likely avenue through which geeks might effect transformations of overall social structure. While Cyborganic was intimately bound in the creation and extension of geek identity on the Web, and members individually sought social change, “transformation of overall social structure” was not a common goal of the Cyborganic project. One indication of this conclusion is the fact that many informants have indicated in the last few years that “Web 2.0” represents the realization of what they were working to create. There has been little organized resistance to the advertising-supported model derived from broadcast media, which instead has been generally embraced as a source of legitimacy and revenue. Assessing project identity clearly depends on identifying what the project was. In the case of Cyborganic’s project to build an exemplary community, my conclusion is that resistance, rather than the project, formed the basis of identity and collective action.

Cyborganic’s basis in resistance was one clear limitation on the power of the community to effect overall social change: in terms of tensions and paradoxes expressed in the project for life; and of reciprocal communication and coordination with larger social forms outside the commune. Resistance identity was the limit of the community, quite literally, a limit none of Cyborganic’s many proactive social
projects came up against—except through their connection to the larger Internet culture, for example in the organized challenge mounted against the Communications Decency Act of 1996 that was led by the Electronic Frontier Foundation. Even the dramatic reach of the Tibet online initiatives took place through channels of resistance, people organized primarily as volunteers, rather than subjects and citizens.

As I said in preface to this ethnography, the story of Cyborganic is a story about the productive power of community, in particular, of intentional communities mobilized in conscious projects of self-creation. But it is also a story of constraints and limitations on this power vis-à-vis the larger social structures, cultural forces, and “real issues of our time.” In the Cyborganic project the issue, the contested terrain was everyday life itself. The practices, discourses, imaginaries, and values of the community worked, in Castells’ terms, to reassert “the space of places”—and its attendant experiences, meanings, and logic—within the “space of flows” (1996:378). In the terms of Habermas (1987), the project aimed to integrate lifeworld and system so that making a living and making a life were mutually re-enforcing practices connected in a meaningful frame—a social imaginary. Cyborganic’s project for life was innovative in imaging and building new forms of techno-sociality that its members carry on to this day in dozens of spore communities and projects. Yet, in terms of constituting society or subjects, this is politics by other means, argument by example, by technology. It is also supremely bourgeois and bohemian in the sense of
creating a new style of life, rooted in a creative calling and countercultural status identity. As a project for life in a social order dominated by work, Cyborganic did not turn away or close itself off from the mainstream altogether. Rather, through a symbiotic set of entrepreneurial and utopian practices and social imaginaries, its members sought in the countercultural, New Communalist mode to build and harness the power of networked social media in a pragmatic and highly creative, communitarian experiment—a project for life.
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Appendix A: Primary Data Sources Cited

- Participant-observation and fieldnotes 1993 – 2005
- 12 formal interviews with Cyborganic members conducted in 1996 for the IFTF study on telecommunities. Interview questions are presented in Appendix B.
- Group history of Cyborganic elicited December 19, 1996.
- 7 interviews conducted with Cyborganic members in 2004
- 10 responses to the 2005 follow-up questionnaire presented in Appendix F.
- Mailing list archive of the TND list 1995-1997
- Mailing list archives of the cc list and its predecessors 1994-2002
- Prospectus for CHANCE: Center for High Technology, Arts, and Cultural Exchange (1990)
- Cyborganic Brochure (1993), presented in Appendix E
- Archive of the Cyborganic Gardens website (including TND Dispatches and The Cyborganic Propaganda leaflets)
- Cyborganic business plans
Appendix B: Interview Guide for 1996 Study of Intranets & Telecommunities

General Guidelines
Start with "how" and "what" questions, leave "why" questions until later in the interview. This gives people a chance to start with straightforward questions and build to ones that require some reflection. Employ native terms you hear right away in follow-up questions.

Profile
• For each interview subject, get the following information:
  • Name (or pseudonym if anonymity preferred)
  • Gender
  • Age
  • Occupation (type of work done)

Background
• How long have you been a Cyborganic member?
• Could you describe a typical day for you, from start to finish, highlighting the ways the Cyborganic network might be involved or come into play?
• Can you tell me about the community's history--how it got started?
  – If they don't know, ask who to go to for a deeper sense of group history?
  – What is the purpose behind it, its reason for being?
  – Is the history, or are past activities, archived or recorded anywhere?
  – Is knowing about the history important to you? Why or why not?

Structure
• Assuming I know nothing at all about Cyborganic, could you give me a guided tour of all it includes? Just sort of draw me a mental map of all the different parts. If it's helpful, you might want to use a piece of paper to sketch an overview of what Cyborganic consists of.
• Using whatever map informant has drawn, ask about the functions of various areas. For example, Cyborganic uses the following modes of communication:
  – spacebar
  – real-time chat
- cc.list
- mailing list for the entire community
- sf.list, nyc.list
- regional mailing lists
- Cyborganic Gardens
- website
- Thursday Night Dinners (TNDs)
- weekly IRL gatherings
- tnd-sf.list
- mailing list for info on SF TNDs
- tnd-nyc.list
- mailing list for info on NYC TNDs

For each area/mode, ask:

- Where do you spend the most time? the least time?
- How is it valuable/useful to you?
- Is it an individual or group area--do you go there by yourself or meet others?
- What sort of activities occur there?
- What is the purpose of this area?
- What is the mood or tone of each?
- Relative pros or cons?
- Tell me what communal resources people share?

**Meaning/Identity with the Whole**

- What's valuable or meaningful to you about being a member of (the community)? [Use whatever term they use to refer to the group].
- What would you say being a member of this community means to you?
- Probe why and how? Could you give me an example?
- What kinds of relationships have you developed in this community?
- What keeps you involved? Why? What do you think keeps others involved?
- Is this just for fun, or for work, or a part of who you are?
- What other communities do you feel a part of?
• How is this community similar/different?
• Why do you think (SGI/HP/Cyborganic) set this up?
• Do you have a sense that the community shares a picture/idea of where it's headed in the future?

Rules/Sanctions
• Do you feel trust among the members? What do you think it's based on?
• What would happen if I came into one of the communication areas, say a chat room or discussion forum, and started acting inappropriately, what would happen to me?
• What constitutes acting inappropriately?
• Are there rules or guidelines for how people should behave to each other? FAQs, group principles....etc.? 
• Can you think of any times when trust has been eroded?
• Is there much concern about security?

Roles/Responsibilities/Reputation
• If I'm a new person in the group, how do I find out what I need to know? To whom do I go?
• Are there people who are known for being especially helpful to newbies? Or, for being especially rude/impatient?
• Say you needed something from the group, like an answer to a question, would you know whom to go to? Why and how would you approach that person?
• How would you find out, if you didn't know?
• Would you say there are formal roles in the group, or only informal ones?
• What do you see as your role?
Appendix C: Cyborganic History and Evolution (1991-1996)
Appendix D: Cyborganic Network of Firms, Projects, & Communities (1993-1999)
Cyborganic Brouchure, October 1993

Appendix E: Cyborganic Brouchure, October 1993

A CYBORGANIC journey

From Here

Location:

The Cyborganic Cafe will be located in " Multimedia Gulch," in the South of Market area of San Francisco. The top tier advantages to this location are:

- Higher per capita ownership of computers with modems in the country
- Easy access to hardware and software companies
- Large pool of local design and programming talent
- A well-established community of mediartists
- A public that has already proven receptive to media art
- History of computer savvy in part of popular culture
- Online interaction (like WELL, SFNet, NextNet) has proven to be a visible and potent social force
- Proximity to computer magazine publishers
- San Francisco is the city most like Cyberpunk
- San Francisco has already hosted a number of computer-inspired cultural events including Cyberthun sponsored by Whole Earth Revival, the Digital De-Tea sponsored by venumb magazine, the Flackers Conference sponsored in part by Apple Computer, Silicon Graphics, and other Bay Area companies, and the Net Jams sponsored by Stanford University.

To Here

Cyborganic Crew

On a foggy day, late in the autumn of '87, Jonathan Breuer, caught his first glimpse of something. He imagined a public space where people gathered amidst high technology and turned it to the most delightful & jurassic ends. A place where people met, made friends and took up the tools of our digital future.

Pursuing this vision to San Francisco's cyberspace, he enlisted his friends and fellow scholars of postmoder society, Jennifer Cool, in the Cyborganic mission.

Together, Jonathan and Jennifer bring expertise in networking, social science, media production, and a fervent tendency to the task at hand - developing and launching the Cyborganic Cafe.

Look for us South of Market in the Spring of '94!

For more information, and/or a copy of the Cyborganic Cafe business plan, send email to:
cafe-info@cyborganic.com
or leave voice mail at 415-255-1120

Cyborganic

interlaces neural & digital makes virtual time impact real space means friendly, not user-friendly turns technology to human ends, not vice versa nurtures cheap connectivity for the general public knows the computer is a communications tool is the future of networking
Appendix F: Cyborganic Research Questionnaire 2005

Send responses via email with the subject line: Cyborganic Research 2005-2006

Privacy & Attribution Policy:
None of your responses will be shared, published or reproduced without your explicit permission. Please indicate whether you give permission for your anonymized answers to be quoted, in part or in full, in my work on Cyborganic and network society.

If you would prefer your responses NOT be anonymized, and would instead like your name included wherever you are quoted, please indicate that at the top of your responses to the following questions.

Research Questions
1 When and how did you first begin using the Internet?
2 Try and think back to those early days and describe what sort of expectations of the Internet you had. Did you think of it in terms of digital culture or the information age, or did you have some other concept of what was going at the time? Do tell.
3 When and how did you first get involved with Cyborganic? By which specific individuals were you first linked to Cyborganic?
4 What do you think motivated most people to participate in Cyborganic? How did they mostly participate and why, in your opinion?
5 Do you think of Cyborganic as a particularly San Francisco thing? Could it have happened else where? Where? What ties, if any, do you see to the rest of the City and region? To its history? What links to other geographic regions can you trace?
6 When you first got involved, did you have any specific expectations of hopes about Cyborganic? Or of some other wider or different group? If you did, describe, explain. If you didn't, what motivated your participation?
7 Are you still involved with Cyborganic in any way? If so, describe or explain. If not, when and how did your involvement end?
8 Can you name, off the top of your head, all the individuals you're still in touch with who you know through Cyborganic? Let's say "in touch" here means you have a current email for them and know what city they live in.
9 Describe your professional involvement, if any, with the Internet or technology industry, telling when you began and whether you still work in this sector. Can you describe what it was like working in the industry in the early or mid-1990s versus today? Major changes, major constants, how you see what you're doing? Your role? Send your resume, or a link to it, as a handy way to answer the first part of this question.

10 What, if anything, did you learn through or via Cyborganic? I'm interested both in technical knowledge (computer, net, and other professional stuff) as well as any other category of stuff you might have learned about in your involvement with Cyborganic.

11 Cyborganic, which became The Cyborganic Corporation in 1995, was popularly known as the Cyborganic community. How do you think of it and can you say anything about the community/corporation dynamic?

12 Where are your web pages currently hosted? What about your email?

13 Are you currently on any mailing lists like the Cyborganic cc-list? If so, can you name or describe them briefly?

Profile & Demographic Information

Privacy Policy:
None of this demographic data will ever be referenced, published, or otherwise shared on an individually identifiable basis. It will only be used to give an overall profile of the people associated with Cyborganic, for example, the average age, residential, and marital status of respondents.

- Your name
- The identity of interviewees will not be revealed, but it is helpful for my research, especially where it enables me to interpret what you say in the wider context of what I know.
- Cyborganic login (if you had one)
- Spacebar login (if you had one)
- Did you ever use Cyborganic for web hosting? For email? If yes, from when until when?
- Birth year
- Gender
- Occupation
- Marital status
- If married, in what year?
- Do you have kids? If so, how many?
- Do you own a home?
- What city do you live in today?