

Supplement to the Historiography I:4

Camille Akmut

December 22, 2022

THE NETWORK WORKING GROUP AND ‘RFC1’

The Network Working Group can be found described as "precursor" to the IETF, the Internet designing body. It emerged from (physical) ARPANET meetings and (envelope and stamp) discussions leading to the first RFCs...

In the summer of 1968, a small group of graduate students from the first four host sites - UCLA, SRI, UC Santa Barbara, and the University of Utah - had met in Santa Barbara. They knew that the network was being planned, but they'd been given few details beyond ... From that meeting emerged a corps of young researchers devoted to working on, thinking through, and scheming about the network ... they decided to meet regularly. ... A month or so after the new group began meeting, it became clear to Crocker and others that they had better start accumulating notes on the discussions. ... [Steve] Crocker volunteered to write the first minutes. ... To avoid sounding too declarative, he labeled the note "Request for Comments" and sent it out [in] 1969. ... the note was distributed to the other sites the way all the first Requests for Comments (RFCs) were distributed: in an envelope with the lick of a stamp.

[Where Wizards Stay Up Late, ch. 5, 'The Search for Protocols']

Crocker's personality, style had a big impact on providing the template for all future RFCs : *"He was an extremely considerate young man, [he] worked all night on the first note, writing in the bathroom so as not to wake anyone in the house. ... The fact that Crocker kept his ego out of the first RFC set the style and inspired others to follow suit in the hundreds of friendly and cooperative RFCs that followed."*

A contemporary comments : "I felt included by a friendly group of people who recognized that the purpose of networking was to bring everybody in."

Janet Abbate also describes the group, providing a different perspective :

Roberts also reestablished his informal networking group, now named the Network Working Group (NWG), to develop software specifications for the host computers and to provide a forum for discussing early experiences and experiments with the network. The most active members of this group were computer science graduate students who had been asked by their advisers to represent their sites. At UCLA, which was particularly active in the NWG, Leonard Kleinrock was using ARPA money to support a number of Ph.D. students, including Stephen Crocker, Vinton Cerf, and Jon Postel

[*Inventing the Internet*, ch. 2]

Roberts is likely Lawrence Roberts, “the manager of the ARPANET project”.
Where Wizards... contains the information that “Crocker and Vint Cerf had been best friends since attending Van Nuys High School in L.A.”. Postel also.

The first Request for Comments (or RFC1) was headed “Network Working Group” on the left, Crocker and UCLA on the right, dated “7 April 1969”, and titled “Host Software” for reasons readily apparent from the introduction :

Introduction

The software for the ARPA Network exists partly in the IMPs and partly in the respective HOSTs. BB&N has specified the software of the IMPs and it is the responsibility of the HOST groups to agree on HOST software.

The document is organized, hence fairly straight-forwardly, as follows :

- I. A Summary of the IMP Software
- II. Some Requirements Upon the Host-to-Host Software
- III. The Host Software IV. Initial Experiments

Section 2, 'Requirements' (on the host software) contains interesting remarks
1. about what the software should do : remote access and file transfer are mentioned
2. ease of use and wide user base - not an obvious choice, a more elitist philosophy could have been proposed.

II. Some Requirements Upon the Host-to-Host Software

Simple Use

As with any new facility, there will be a period of very light usage until the community of users experiments with the network and begins to depend upon it. One of our goals must be to stimulate the immediate and easy use by a wide class of users. With this goal, it seems natural to provide the ability to use any remote HOST as if it had been dialed up from a TTY (teletype) terminal. Additionally, we would like some ability to transmit a file in a somewhat different manner perhaps than simulating a teletype.

In section 3, features of said (host) software are detailed,

- a) Initiate TTY-like connection with HOST x.
- b) Terminate connection.
- c) Send/Receive character(s) over TTY-like connection.

and three equivalent points about a “file-like connection” (prev. evoked)

We really like the tone of RFC1 : “*Very little of what is here is firm and reactions are expected.*” Crocker warmly warned!

MAGAZINES

— *FringeWare* [cont.]

The issue of *FringeWare* and design is actually more complicated than that it didn't improve from first to last volume : quality was not consistent. Issue 11 for example, out of nowhere, for no apparent reason, was on fire and reached Future Hacker levels.

In issue 11, Paco Xander Nathan wrote a review of *Where Wizards Stay Up Late* (Hafner/Lyon's book on the making of the Internet) including biographical information :

e.g.

I am struck by a description of the first instance of potential government censorship within an online forum, in 1979 - around when I first encountered the Net, but portentous and instructive even today:

"What emerged from the debate was strong evidence that the networking community felt a deep stake in the creation of the Net, ARPA funding or no ARPA funding, and was trying jealously to guard its right to determine its future. In a realm where, in a sense, personal identity is defined entirely by the words people choose, free speech seemed second only to concern for the survival of the realm itself."

or

I grinned and winced to find quotes from my former professors - wishing I'd had this book during grad school... In the space of paragraphs, Hafner and Lyon explain complex networking issues which some of the same experts had taken days to cover in lecture. So many nights spent in school struggling to complete datagram simulations, so many nights spent at work struggling to fix an ailing net or grok some obscure RFC, now hold much more meaning (and empathy) in the context of a clear historical perspective.

In the ninth issue PGP was a topic again due to the publication of its source code and manual as books by MIT Press.

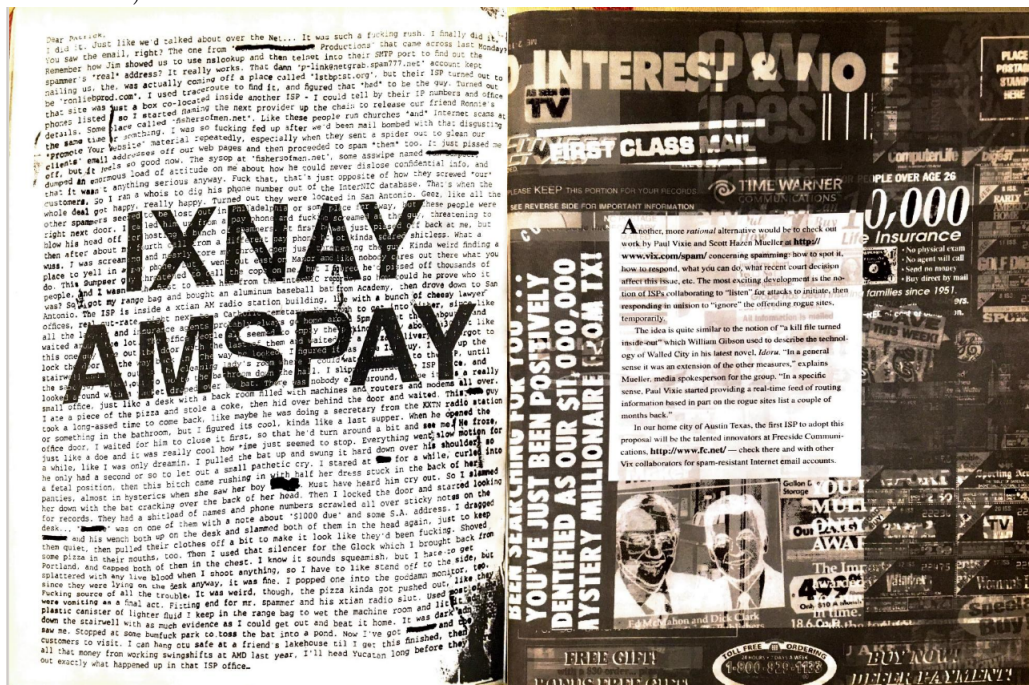
The reviewer for the former admits that they are not "even remotely C-literate" to understand the 895 pages of small font code. But, that is not the point (for most people) :

Apparently, Mr. Zimmerman intends any computer equipped with OCR (Optical Character Recognition) capabilities to do the same. Thus, even if the bad guys succeed in making PGP a contraband, we'll still be able to have it, or get to it.

FringeWare also included Barlow's preface to the *User's guide* : in which so-called 'civil liberties' are never far away from concerns about taxes and in the case of Libertarians of course meaning not paying them,

Any number of citizens armed with PGP and such of its relations as digital cash and anonymous Net remailers can simply vanish from the governmental radar. They are at greater liberty than ever before to conduct any endeavor, including something that, as Phil frankly puts it at the beginning of this book, "shouldn't be illegal, but is." They can exempt themselves from taxes and yet maintain precise accounting records. In many ways, they can effectively resign from the community of the governed and enter a condition in which their actions are ordered by conscience and culture alone.

demonstrating how the dichotomy between "civil libertarians" and plain libertarians tends to be a false one. They may deeply care about issues like free speech or privacy, but - going hand in hand - just as much about circumventing taxation. (Hence the description by Barlow of digital cash and mail encryption as "relations".)



II. issue 11

Talk long enough to a 'civil libertarian', especially the kind with a carefully cultivated public image, and soon enough "don't tread on me" serpents, fantasies about private islands or more modestly 'free land', and generally living outside of the law ("the community of the governed" they'll call it euphemistically, like Barlow) should surface...

FILM

— *Conceiving Ada* (1997) and *Teknolust* (2002) by Lynn Hershman Leeson

Our first impression :

that rarely have we ever seen so many women, occupying so much time, and so much space in a technology film. And, that this is a good thing. This reversal makes those works alien objects, alone; with no clear competition or even field. (Spontaneously we can only think of *Sisters with transistors*, though a documentary and much more recent, and the Wachowskis.)

Not content with female protagonists, her recurrent collaborator Tilda Swinton, she frequently employs mirror effects (doubling, quadrupling... the female presence), and even clones them in *Teknolust*.

Men are either shown and interpreted from the perspective of the women involved, and in *Teknolust* reduced to - vital - sex toys (in ways that females in film have been for decades with few protesting).

Conceiving Ada has appearances by John Barlow (in the role of John Crosse), Timothy Leary, Bruce Sterling (as himself - but limited to a windowed webcam), R.U. Sirius...

These works are a celebration of the female form, female beauty, intelligence (Ada Lovelace, Rosetta Stone)... Interactions between *Teknolust*'s clones — all of Swinton! — are a delight to watch, and are either an evocation of (straight) female solidarity, plain lesbian in nature or a representation of a fluid uncertain middle. Tilda Swinton's androgyny heightens that alien character, the otherworldliness of a world — fashioned, directed by women if only a microcosm — where men either have ceased to matter and certainly do not play the central role anymore.





Thank god that such brutally uncommercial, unconventional work still somehow gets made.

While women are emphasized in the ways previously described, men are simultaneously de-emphasized: appearing, variously, debodied in computers, projected onto walls, and often stand in the background of women, are talked-to rather than talking-to — this is all subtle, but there is no telling what subterranean

effects all these little tricks might have on the human psyche.

Is the philosophy of Leeson that a reality can be brought forth if it is shown enough, first in fiction?
A German anti-idealist philosopher - contemporary of Lovelace - would disagree, of course.

On another level, between Ada Lovelace (*Conceiving Ada*) and Dr. Rosetta Stone (*Teknolust*) there is something like a Leesonian heroine, an ideal picture of a woman that is emerging : female, obviously, but smart she must be, and aristocratic in one case or urban upper-middle in the other. Marxist feminists at this point would fear that this was all going in a dangerous direction : she would congratulate Leesson for defending women, a certain kind, and pity and criticize them at the same time.

In *Teknolust*, the cleverly named Dr. Rosetta Stone is a fly-high researcher working at the intersection of multiple fields (AI, biotech, etc.) Spirited conversation with a colleague helps introduce them :

- Re-creation is recreation.

[laughing]

- Not bad.

- Yeah.

- Neither is your thesis on artificial intelligence viruses.

- Oh, thank you, but they are not viruses, you know.
They are SRAs, self-replicating automatons.

- Yeah, yeah, SRAs.

- They are non-virus based.

- Yeah, yeah, but they mime and they reproduce like viruses.

- No, they don't.

- You know, the most important thing to me
is the creation of reliable software
that makes the world a safer and a better place.

- Mm-hmm.

- So when do I get to see them?

- You can't see them.

It's only theory.

It couldn't be possible for, I don't know, 20 years?

And, even if it were possible,

I'd suppress their reproduction code

Finally, a dimension of Leeson's work is their background as an artist : a lot of scenes, often the most stunning ones, are like video art installations that were -then- integrated into a story. A lot of them involve technology, and specifically subversive uses of them (project images of classic b-w movies, white noise, green screen)