TO: THM
FM: RCC
SUB: I COULDN'T RESIST AN "I TOLD YOU SO".
NOTE THE DATE ON THIS.

REF: YOUR MSG TO UHLIG

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Memo:   18 Jan 74
TO:     TENEX group, WRS
From:   RCC
Subj:   Providing Mail Service to the ARPANET
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I believe it is an error to assume that TENEX systems,
the ARPANET, and the TIPs (as presently configured) can provide a reliable
production-quality service of the SNDMSG/READMAIL variety. I think there
is a better way to do this job which will make life better for both
the mailbox user and the TENEX sites.

Some statistics and assertions:

The present user of the TIP, using READMAIL, has a long string of
hardware and software in series, all of which must be simultaneously
working in order to provide that mail-reading function: his local
terminal, its connection to his TIP, the TIP, the IMP, some 50 kb
phone lines, some more IMPs and a large PDP-10 system. One has to be
a Dr. Pangloss to expect this entire system to be working at every
moment when the mailbox service might be desired. This is
especially true with the current system loads and current protocols.

Even when it is all working, it is not working well for this
task. An example is the complaint that LOGOUT takes too long. Well,
LOGOUT does take too long for a mailbox function, but a quite
reasonable amount of time for the job it is doing in general for TENEX.
This extra work is unimportant to the mailbox user.

The incremental cost of a new mailbox user is much higher than just
a few seconds of CPU time per week. It also includes the up-time
and response-speed demands of that user, which cannot realistically
be met by a heavily loaded, research oriented TENEX system.

A TENEX system is well suited to complex, longterm processing

a few seconds of CPU time per week, as also improves the response
and response-speed demands of that user, which cannot realistically
be met by a heavily loaded, research oriented TENEX system.

A TENEX system is well suited to complex, longterm processing
tasks which support the mail system. A local mini-computer
is well suited to terminal-handling and line-editting for nearby
users. How much minicomputer would it take to support the immediate
needs of the mailbox user? At the moment, there are 182 non-empty
MESSAGE.TXT files on BBN TENEX, occupying 4 and a third million
characters of disk space. At an average of 24000 characters,
then, 102 mailbox files will fit on one RKØ3 disk cartridge
on a PDP-11. If this is cut by a third for some space for an
operating system and the SNDMSG/READMAIL/FTPSRV/MAILER functions,
and then doubled or tripled to reflect only recent messages
(using backup of older mail at a TENEX possibly WITHOUT the
real-time response on old mail -- queued requests if needed),
then we have a very respectable mail service which will mesh
well with existing mail services around the net. It would have
fast login and logout, simpler user commands (being dedicated to
the mail function), and would be stable and more reliable
due to the stability of its set of tasks, the small size of the
hardware which must be up at any instant, and the layered
method of sending and receiving messages.

The cost of this is a dedicated minicomputer, and some robust
mail delivery software. The ANTS, NET-11, and other systems
are available as bases. Our BCPL-11 system could be used for
the NCP, TELNET and new 11-based user and server code.

I think a pragmatic approach to providing mail service to the
ARPA office, and other clusters of mailbox users, should consider
the development and replication of such a minicomputer-based
facility.