

TI and Geneve on the Internet?

Michael Zapf

November 20, 1998

The Internet

The global network *Internet* offers services to many users which could not be imagined a few years ago. Many kinds of information — be it texts, pictures, animations — can be retrieved; everything that is covered by the buzzword *multimedia*. And you can get it all at low connection costs. This rise is grounded on the spreading of so-called *web browsers*, programs that combine a lot of multimedial capabilities under an easy-to-use graphical interface. One of their most popular representants is the *Netscape Navigator*. But there is even more, e.g. *e-mail* and *FTP*, which originally were the main applications for the Internet.

The Internet is a very sophisticated computer network, connecting all kinds of computers of all kinds of architectures. There is no problem for a PC talking to an IBM mainframe and downloading files from it. This flexibility is ensured by a collection of communication rules, also known as *protocols*.

The *Internet Protocol (IP)* is the most important protocol. It cares for the delivery of the data from one location to another. This transfer is not as simple as with a BBS; unlike there, the data is transported over many intermediate nodes that organize a correct forwarding of the data (*routing*) without the client even noticing it. The *decentral* organisation can cope with node failures in the network simply by choosing other routes.

Many other protocols are installed on top of IP which use its services. One very important one is the *Transmission Control Protocol (TCP)* which is needed by most upper-level applications. As TCP relies on IP, this structure is often called *TCP/IP protocol stack*. TCP cares for the correct and complete reassembly of the files that were fragmented by IP for delivery. The user has no idea how the data was cut in pieces and which way each piece took — TCP ensures the correct delivery.

The TI community

It's still there. Moreover, it gains from the growing connectivity, and there has been more than one former TI user that decided to re-join after seeing that so many people are still in contact all over the world. You might want to drop a short note to someone overseas, and if he can arrange it, you'll receive his answer in a couple of minutes — even if you live far away from him. If someone has a hard programming problem that he is unable to solve, he might want to post a question to a newsgroup, and shortly after that, he will be given more answers than he needs. All this is offered to you for local connection costs in the best case. Can you image what course the TI history would have taken if those possibilities had been available earlier?

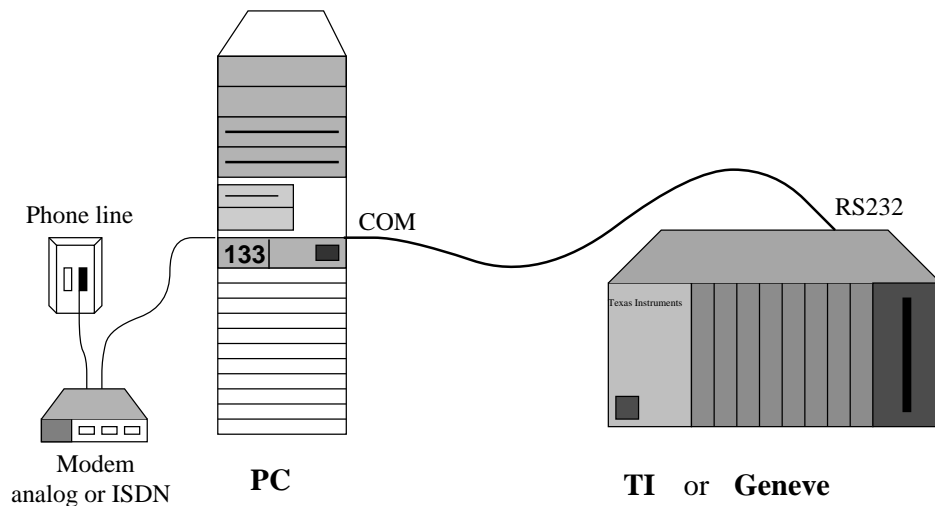


Figure 1: The PC as an interface to the Internet

Getting on the Internet

But how do I use that? Well, most of the users sit at their personal computer or workstation, at home or at work. They can exchange messages and news, even short program texts that can be re-entered on the TI at home. *That*, however, does not seem to be the final goal. Why is there no program for the TI which connects it *directly* to the Internet?

Because a *really* tedious, stony way extends before us before we get our TI on the net. A small world seems to lie between terminal emulators like *TELCO* or *TERM80* and a real TCP/IP system. To be more precise, the requirements could be so high that they cannot be fulfilled by the TI — but not because of speed since the Internet does not require a minimum connection speed.

Currently anyone who owns a PC at home should be able to bring the Internet world to his TI, although it takes an indirect way. You are required to have Internet access from your PC to one of the many *providers*. (Closed online services like CompuServe are not taken into account in this article.) If you are able to download files from the Internet to your PC you just need a three-wired connection from your PC to your TI. Furthermore, you have to run the appropriate programs on both sides.

Each one of TI and PC should run a *terminal emulator* that allows at least a file transfer via *XModem*. For instance, use the *TELCO* program on your TI or Geneve; the program you need to start on your PC depends on the operation system you are using. OS/2 users can take *HyperAccess*, and Windows users would use *Terminal* (both are bundled with OS/2 resp. Windows). It is essential that the same values are set for the TI and the PC interface. A good RS232 card should make no problems with transfer rates up to 9600 baud.

It is even simpler when you want to transfer text files. You just have to print the listing to the RS232 device (with the appropriate values) and receive it on the PC with a terminal program. After that you can save the received data in a file and distribute it on the Internet. If you have no Internet access at home but at your workplace and you are able to write DOS diskettes you can save the transferred files to disk, take it with you at home, restore them on your PC and follow the above mentioned procedure afterwards.

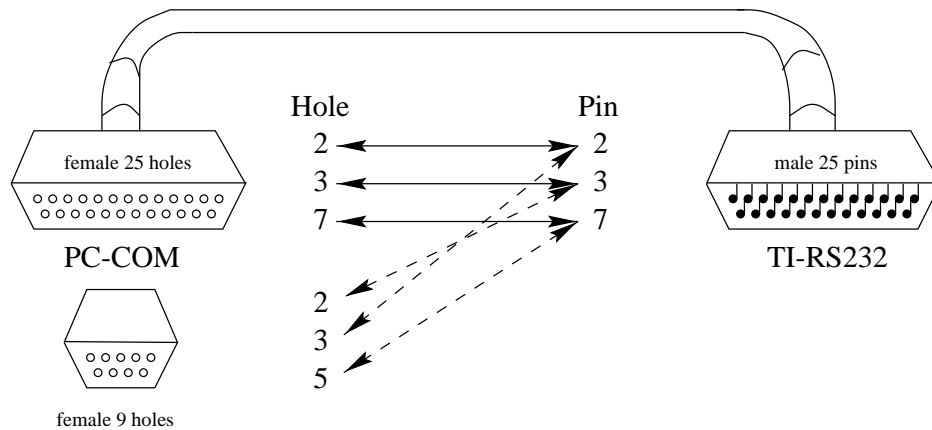


Figure 2: Connection between PC and TI

And where shall we go?

There is an ever growing number of addresses on the Internet that are related to TI topics. Here are two of them:

- **comp.sys.ti** (Newsgroup)
- **ti99@theriver.com** (TI List Server)

The former is a *newsgroup* in the USENET that is part of the Internet. Messages that are *posted* there can be read by everyone who *subscribed* to this newsgroup. This dramatically enhances the global discussion among the members of the TI community.

The latter is a server that forwards all e-mails that are sent to it to all people that are registered on its list. So it works similarly to the newsgroup but you have to register explicitly at Tom Wills who set up the server. His address is **twills@theriver.com**

Two locations for storing and retrieving new files are

- **ftp://solutions.solon.com/pub/ti99**
- **ftp://ftp.io.org/pub/users/opanit**

The september/october issue of MICROPENDIUM lists a considerable bunch of Internet addresses so that I would like to advise you to check this issue for more information.

Conclusion

TI or Geneve online? That should be no problem if we restrict this to the indirect way described above. But directly? I am currently investigating the feasibility of this project. Chances are much better for the Geneve than for the TI because of the better hardware resources. It will suffice to implement just a basic functionality; however, at least PPP (connection), IP (without routing), TCP, and the application itself must be written. Not to forget to leave enough memory as buffer space.

We surely won't get a real web browser à la Netscape. But a simple FTP utility which allows to upload and download files from the Internet would not only sufficient but also probably feasible. Later even USENET access and e-mail could be added.

In my opinion the Internet will definitely help the TI community to survive or even to grow again. User groups can coordinate their activities all around the world, information can be

shared and new software be distributed. Authors won't have to be afraid that the produce of many hours of their spare time falls into oblivion in a few dusty disk cases. In many cases all this is available for local telephone connection costs. But the plan for the next days to come is to ensure that *every* TI users group has at least one Internet access. The costs for this can be divided among the members. The gain will be magnificent.

Michael Zapf*

*The author is a Ph. D. student at the department of computer science at the Johann Wolfgang Goethe-Universitaet Frankfurt/Main, Germany
E-Mail: zapf@informatik.uni-frankfurt.de
FAX (home): +49 6039 95430
Address (home): **Homburger Strasse 2, D-61184 Karben, Germany**
Please use mail, FAX or e-mail to contact. No phone calls please.