[*Translating and the computer 12: Applying Technology to the Translation Process*. Proceedings of a conference … 8-9 November 1990, ed. Catriona Picken (London: Aslib, 1991)]

Online data exchange

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Now for some more useful information about online data exchange using modems, with hints on what can be done with current communication software and hardware. Particular emphasis will be laid on PC based systems, because they are the ones I have the most experience with. The PC has come to dominate our working lives, our home lives and our businesses, indeed, as I mentioned, the concept of tele-working is a reality for us all.

Any system of data exchange between computers requires a connection between them. That connection may be just a wire from one plug at the back of one machine to one plug at the back of another, or it may a serial port connection through a modem, such as a direct hook-up. It's not necessary to have a connection between a micro and a mainframe. Micro to micro, mainframe to mainframe, it really makes no difference.

This is the simplest level of connection and it requires the micro or PC to act as a terminal to the target computer using software emulation, the terminal type, a VT-100, a teletype, a simple text entry mechanism.

For the purposes of this discussion, the type of connection we are considering today is modem to modem hook-up. This is nearly always achieved by one or other of the following configurations, a PC connection with an external modem or the possibility of an internal card modem within the computer itself. The costs involved in that are marginal these days.

It should be noted that the target machine could be a mainframe as I said earlier, or another PC or micro. The actual connection requires the caller to establish a telephone circuit or connection with the target computer

system, via the public telephone network. In general that is the system that most people use. There are also systems called lease lines, which are high quality low noise lines which actually ensure higher data integrity for the translator, but they cost a lot more money and tend to be only used by corporations. So you and I would be using PST, Public Switch Telephone Network.

In the early days of modem technology, this connection was achieved by the use of an ordinary phone handset, usually a fairly low tech modem, V-21 or V-22. (I will explain these terms later on) and manual dialling of the telephone number of the target computer, which, when it answers, will emit a series of squawks and burbles after which you put the handset down, and you have established your first connection, we hope!

Recent developments in modem technology over the past five years have shown that the technology itself has grown at a vast pace. As the on-line community, as I choose to call it, moves into the '90's, the hardware and software available to the ordinary user to make effective use of both personal and professional on-line services has become increasingly sophisticated. Data transfer software has become more efficient by use of error correction and data compression techniques, giving a direct benefit to the user, in the shape of lower phone bills because of shorter connect times actually on the telephone circuit.

The next section of my presentation describes what happens after we have established that vital telephone circuit. Almost all data exchanged between consenting modems requires a brief form of etiquette (a protocol) to be followed by both participants, very much like the conventions people follow regarding introductions, greetings, conversations and partings. Computers must observe similar conventions if they are to exchange information with one another. They must agree to speak the same language, at the same speed. They should know when to say hello and when to say goodbye to each other. They may have to agree that only one of them can talk at the same time. It doesn't much matter what the rules are, as long as the two parties concerned absolutely agree upon them. Such a set of rules is called a protocol, which is also designed to ensure that computer files, that is to say a collection of named data on magnetic media, can be transferred from one computer to another directly and completely despite the many pitfalls that lie in the way.

It would be fair to say that in general modem hardware and its associated on-board software, has not always been in sychronisation with the production of good communications packages to support those features. Indeed, after having purchased an expensive modem, the user even two or three years ago was reduced to 1275 band connections with minimal file transfer facilities, that is to say low speed V-21, V-23 type connections. Virtually no terminal emulation software was available and the facilities available were really limited.

Over the past two to three years, I'm happy to say, the situation has much improved. Packages such as Pro-corn Plus, Odyssey, Datatalk and Transcend Plus all provide a good selection of adaptable and configurable software for your use.

These will permit the addition of such features as Viewdata, MNP, which is a data compression technique, and error correction software.

There are different merits to each of these packages which have all been reviewed in depth in the popular computer press.

Current modem technology is still well ahead of the software, and is still making better use of existing hardware. The finalization of V-42 specifications will mean that this becomes the de facto standard across Europe and (hopefully) the world.

When it comes to considering cost, if you do a lot of file transfers you must consider either the software packages that provide data compression and error correction, since this will clearly bring benefits in terms of line cost and general ease of use as opposed to the old manual system. There are command language modems which allow you to take full advantage of the newer software packages, i.e. you don't have to become too involved in it, it can become an automated process.

To sum up, the successful exchange of information between machines relies on the following: a good circuit or connection between the two computers and their modems, a good general purpose corns package, agreed transfer rates and data structures, and agreed file protocols. Once you have all of that, you're ready to go.

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