

INFORMATION: THE THIRD REVOLUTION

Herbert G. Bown
Vice-President
Corporate Development
Norpak Ltd.
10 Hearst Way
Kanata, Ontario
K2L 2P4

It has often been noted, most recently by Alvin Toffler, that the world is undergoing a third revolution. The first was agricultural, the second industrial, and the third is in the world of information. The development of the microprocessor and the move towards information distributors as major employers has combined to create a world in which the collection, storage, delivery and retrieval of pure data in some way forms a part of all of our lives.

However, it has also been noted, since ancient times, that everything tends to come in three's. Therefore, we will also see that the world of information itself has undergone three stages of development.

All communications media can be grouped into two general categories: interactive and non-interactive. That is, information can be merely received and digested by the user; or, he can be allowed a means of reacting actively to the received information, of interacting with its source, or ultimately of providing new data himself.

In the primarily alphanumeric media, the scale is heavily weighted on the side of the non-interactive category. Books, newspapers, magazines, letters, reports, documents, telegrams -- all allow the user to access and compile valuable information, but give him little direct recourse to its source except to reply in an alphanumeric form -- a letter to the editor, for example. On the interactive side we now see computer conferencing and alphanumeric computer-based information services, such as the source or InfoGlobe, giving the user some limited means of interaction with the provider or with other users.

Audio communications fall distinctly into the two groups, radio, phonograph, or even good old speaking aloud allows the listener to intake through his ears what he would receive through his eyes

alphanumerically. The telephone, teleconferencing, and conversation with others brings in interaction. The only limitation is that all responses must be verbal.

In the world of video communications (some with audio capabilities), television, film, videotape, paintings, facsimile copiers extend the depth of information retrieval by the user. He can read, visualize, and listen as well. He can react, but not respond. Teleconferencing by videophone may allow some interaction, but a distinction must be made between immediate person-to-person communication, and source-to-source information exchange with allowance for rumination, correction and editing.

Visual media without sound include drawings and sketches, and on the interactive side, Telidon (as an information retrieval device).

We have looked at each of the various communications media and distinguished their interactive forms from their passive ones.

Let's take a look at how we use the interactive communication media. A person may interact with a machine: asynchronous computer conferencing, computer-based information services, or Telidon as information-retrieval device. He may interact with other people: speaking, telephone, interactive Telidon, videophone. The person-machine interface has an advantage in speedy information dissemination but provides limited, if any, dialogue. That's why the telephone has been an unqualified success: technology allows us the communication means we learn from birth -- conversation -- at any distance. It was natural to assume, then, that the videophone would match and continue that same success: it adds visual impact to the two-way interaction. However, the videophone so far has failed to win popular appeal, because each viewer sees a different picture. It feels remote, it does not give us common ground. Perhaps that's why Telidon is doing so well: you and I will see the same picture, at the same time. We can share a common visual space, which is what we do when you and I communicate in the same room. Now, as with the telephone,, we can achieve that psychological effect without regard to geographical separation.

How does information processing fit into this picture? The information provider of today still operates in basically a non-interactive way. He is a private publisher or broadcaster, who sends out information to certain users. But the information provider of tomorrow will have much more depth. He will maintain a continual updating service of the information which he makes available. He will be open to receiving feedback, from the individual or from other information "brokers". He will be an electronic publisher. He may be part of a huge corporation -- or he may be a single individual. The implication of fully interactive visual/video communications media ultimately resolves down to a

national (or international) information network, with everyone who has information providing it to anyone who wants it. They may provide it free of charge as a public service -- government agencies, provincial ministries and social services have already started to get their information online (and on Telidon) or they may charge a fee for the knowledge. I'll teach you Spanish if you'll provide a sketch of my new living room.

The third revolution is therefore "third" in two senses. The agricultural work force is dwindling; as is that of the traditional industries. But approximately three quarters of today's workforce deal in some way with information. Information is the new, and highly profitable, commodity. The first exploration of this commodity gave us information retrieval. The second, limited transactional services, verbal and alphanumeric interaction. The third will see a total integration of all media and all systems: two-way communication; full exchange of information in alphanumeric and high-resolution graphics; common visual space networks; Telidon that talks to all computers; overall communications systems for voice, data, video, text; the user as information source. And all available in one device that will fit in my hand.

The "third wave" then, is really more of a tide, and the ebb and flow is the provision and reception of information.