

**"Gutenberg made everyone a reader,
Xerox made everyone a publisher,
the personal computer made everyone an author
the personal telephone makes everyone a participant"**

Towards an Information Economy

To make possible relevant steps towards a true information economy, it needs to be defined an information currency. There is need for some kind of system for exchange of values that are representations for information. If such representations differ from person to person, then there seems to be no chances to find a common currency.

If, however, there exists groups with the same, or at least overlapping, frames of reference, then there might be a chance to define some kind of currency that could be valid for at least these groups.

Frames of reference rely on access to data. A frame that can show relevance for a certain discussion, relies on relevant data for this topic.

Different forms of access to relevant types of information for everybody is being discussed widely. What is been agreed on is that an increased individualization of information access is expected. Everybody will have the chance to define her or his personal information profiles, and systems will be available for collection and distribution of such personally defined and demanded types of information.

What is being debated are the forms for this. In what manner are personal information profiles to be defined? How should one value, collect and

distribute the different types of information that are asked for?

Videotex and related types of communication technologies, seen in a broad context, is one form of technical means that may be able to provide a basic network structure for information collection and distribution. On top of such networks there will be other perhaps more technically competent networks, networks that may provide "higher", or more value-added, forms of information.

In France there is an almost undisputed understanding that the road to new and more personalized information services goes via the Minitel. This represents a "low technology" start in the race towards more efficient communication between human beings.

The North Americans believe in the opposite technical form. The Prodigy system holds for probable that soon (before the end of the century) more or less everybody will have access to a s private personal computer with a modem.

It is important to note that the french low tech philosophy represents a certain type of understanding of networking. **It is in the network itself that the intelligence exists, and not primarily in the nodes.** The cooperation between the nodes creates intelligence. It is probable that in this sence the "intelligent sum" of the node parts is greater than the sum of the intelligences in the nodes.

In Sweden, where the mobile telephone is being spread with what probably is the worlds highest speed in the beginning of the 1990's, one can already predict with some accuracy the timing for the situation where everybody will carry a private portable telephone of, perhaps, pocket size. Estimates have been given that before the end of the century, every second Swede will have access to a personal telephone. Soon this piece of equipment will be made intelligent. Innovations and market demand will transform it into some type of partable interactive personal computer.

Although the way to this in many countries will resemble the French Way, through Low Tech (the Minitel), it is now time to discuss effects of the situation where everybody has direct access to personal computer power, more or less 24 hours per day.

This development will blur the boarder between the Prodigy and the

Minitel approaches.

Suppose that a human being and her portable terminal are considered as a whole, as an "extended person". Let us call our first such person EP_1 . The second person we come across is called EP_2 . They both have access to specific computer power, especially in some sense relevant databases. They are, logically seen, functions that in some sense rely on their access to data.

$$EP_1 = EP_1(\text{girl}_1, \text{terminal}_1);$$

$$EP_2 = EP_2(\text{girl}_2, \text{terminal}_2);$$

If the abilities of both EP_1 and EP_2 can be considered as logical sums of its parts, then

$$EP_1 = EP_{1\text{girl}1} + EP_{1\text{terminal}1};$$

$$EP_2 = EP_{2\text{girl}2} + EP_{2\text{terminal}2};$$

Then the difference between these two, $EP_1 - EP_2$, has two parts, Q_1 and Q_2 :

$$EP_1 - EP_2 = (EP_{1\text{girl}1} - EP_{2\text{girl}2}) + (EP_{1\text{terminal}1} - EP_{2\text{terminal}2}) = Q_1 + Q_2;$$

What we noted $Q_1 = EP_{1\text{girl}1} - EP_{2\text{girl}2}$ is as undefined as its parts, $EP_{1\text{girl}1}$ or $EP_{2\text{girl}2}$. The difference between them **might** then be treated alone in our discussion. Let us leave it for the moment.

The other part, Q_2 , is built up of the expression

$$EP_{1\text{terminal}1} - EP_{2\text{terminal}2};$$

In situations where this can be considered useful, this may be a manageable formula. Suppose, for instance, that the two extended persons in the relevant time interval have access to the same database. Then the difference between their functions of access can be seen as zero.

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If, on the other hand, EP_1 has access to more relevant data than EP_2 , then the difference gives a positive result. Without giving exact measures concerning these items, we thus have at least relations between them.

This is simple linear arithmetics. More complex expressions may be evaluated into other forms. Certain types of these may be able to be treated formally. What type of relational algebra could be defined on this base?