

This subcommittee is considering a specific proposal: to build a larger centralized data base for the Nation to reduce the costs of duplication of files and to provide more rapidly available information to those with legitimate need. The initial goals are valid and useful. But of common concern is the range of possible side effects. In general, I wonder about the potential threat to our historic right to privacy that could be endangered by a lack of appreciation for the present-day limitations of the computer and communications technology that could allow tampering of files by a sophisticated criminal, or a conspiracy, or even Government itself.

The initial questions are those of examining the proposed central file system, considering its weak spots, and creating a precise description of those safeguards required that are technologically and economically feasible. If the gap is too great, then clearly we should not build the system. But as a practical matter we should realize that eventual development is almost inevitable. We would do well to concentrate on the more constructive and larger issue of: How shall we control the development of the automation of all sensitive information files in order to best protect the rights of the individual and avoid a "1984" nation?

This may sound pessimistic, but if one can save money automating a data system it is only a matter of time until it happens. The only questions are: When? and How? I would like to add the further distressing thought that we may already be well along in the creation of the very system whose needs and dangers we are discussing today. This might sound bizarre, but consider the following line of reasoning:

Our first railroads in the 1830's were short routes connecting local population centers. No one sat down and laid out a master plan for a network of railroad rails. With time, an increasing number of such separate local systems were built. A network gradually grew as economic pressure caused the new links to be built to span the gaps between the individual routes.

We didn't start to build a nationwide telegraph network in the late 1840's; only independent telegraph links. But it was not long before we had an integrated nationwide network. Even the name, Western Union, recalls the pattern of independent links joined together to provide a more useful system.

We didn't start to build a nationwide telephone system in the early days of the telephone in the 1890's. Yet, today we have a highly integrated telephone network.

Such patterns of growth are not accidents. Communications and transportation are services that historically tend to form "natural monopolies." The reason is well understood. It's cheaper to share use of a large entity than to build your own facilities. Hence, if you were to look at the earth, say, from the far-off vantage point of the moon, it would appear that the growth of these integrated networks out of individual pieces is almost biological.

So much for history. What is of concern to us is that automated information files have the same properties as communications and transportation that causes the integrated networks to be self-agglomerating. It is cheaper to share the information by tying together independent systems than by building a very large number of highly duplicating systems without interconnection. But "information" can be too