

Telecommunications in the Community in 1985

The number of telephones installed in Community countries will almost treble between now and 1985. But even then the network's density will only be equivalent to that which countries such as Switzerland or New Zealand had attained by 1967, and which the United States and Sweden had already far exceeded at that date.

How can this tripling of the Community network be achieved? Above all, how can it be achieved while at the same time retaining the possibilities of subsequent technical improvement, and while rationalizing telecommunications systems as a whole? A study carried out at the request of the Commission of the European Communities by the Federation of Telecommunications Engineers in the European Community (FITCE) is aimed at finding the answers to these questions.

This study, which covers five of the European Community countries (Germany, Belgium, France, Italy and Luxembourg), concentrates mainly on telecommunications in the sense of postal, telegraphic and telephone services, leaving aside broadcasting of radio and TV programmes.

The number of subscribers' main stations in the countries concerned will rise from 17.9 million to 56 million in 1985, so that these countries will have to invest some 4,000 million dollars (since one connection costs about 1,000 dollars). Over the same period trunk traffic may be expected to increase five-fold, and international traffic to expand even more rapidly. Telex facilities will also undergo considerable development, but it is thought that here saturation will be approached with a density of one to five telex stations per 1,000 inhabitants, as against approximately 500 per 1000 inhabitants for the telephone. In these two sectors present-day techniques appear satisfactory, ..//..

and while the replacement of electromechanical switching by electronic switching is tempting, the time required for amortization of equipment will make it necessary to proceed with caution.

Telephone Equipment Forecasts

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	Subscribers' main stations (millions)		Density of subscribers' main stations (per 100 inhabitants)	
	<u>1969</u>	<u>1985</u>	<u>1969</u>	<u>1985</u>
Germany	7.3	21.0	12.2	31.1
Belgium	1.27	2.7	13.2	25.8
France	3.68	15.5	7.2	25.5
Italy	5.58	17.0	10.36	28.7
Luxembourg	0.073	0.155	21.8	42.5
Total	17.90	56.35	10.0	28.6

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The situation is not the same in the other sectors, and particularly as regards data transmission and the videophone. For example, as regards data transmission, it is considered that the number of data receiving sets (terminals) will vary between 100,000 and several millions. As regards the videophone, an enquiry has revealed the need for quality, but the transmission requirements are 100 times as high as for the telephone, and the cost at the present time is prohibitive.

On the other hand, by adding a system of rapid photostatting, and making use of videophone in order to transmit not moving but still pictures, it would be possible to obtain a document transmission system at moderate cost. The report even quotes, for the transmission of a page such as this, a rate of 0.003 dollars locally and 0.015 dollars over a distance of 300 km. As compared with the price of a letter, which takes not a few seconds but 48 hours, and costs approximately 0.80 .../...

dollars, this price is fantastically low. However, such systems is unlikely to be used on any appreciable scale in the near future, and Europe is not at the stage reached by the United States, where the videophone is expected to be introduced next year.

The FITCE study also refers to the probable expansion of communications between mobile stations, and the transition from a simple call system to a system capable of being inserted into the general telephone network. It may be noted in passing that the broadcasting of radio and TV programmes by cable would make it possible to free frequency bands for other uses, and particularly for mobile services.

In addition, an analysis of the technical aspects of the pattern of development shows that having regard to the lifetime of installations, the decision to be made in the near future concerning equipment will be determinant for the period up to the end of the century. If the various national authorities make different decisions, major obstacles will be raised to the creation of uniform European networks. Network standardization might be effected on the basis of a network which could be used for the various telecommunications methods, each subscriber installing at the end of the line the receiving set appropriate to his needs. But the creation of these "integral" networks necessitates the replacement of many existing exchanges by exchanges of a more up-to-date type, and this can only be done progressively, since amortization of an exchange takes twenty years.

Lastly, it seems that present techniques will be capable of coping with traffic up to 1985, and that submarine cables will retain their value despite the use of stationary satellites above the Equator, where there are liable to be zones of very high traffic density.