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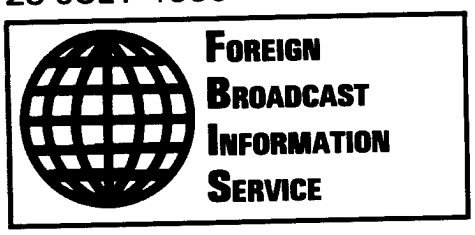


# JPRS Report

# Telecommunications

# Telecommunications

JPRS-TTP-90-007

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23 July 1990


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# RWANDA

## Nation To Link With International Data Bases

*90WT0103A Kigali LA RELEVE in French 1-7 Jun 90 p 10*

[Article by Augustin Twagirayezu: "We Shall Soon Have the Minitel"; first paragraph is LA RELEVE introduction]

[Text] A data transmission network by telepac [burst transmission mode] will soon be opened in our country. Rwanda is gradually entering the age of instantaneous communications.

Listeners to Radio Rwanda, however, thought it was a hoax when they heard on 17 May the very serious minister of transport and communications announce the forthcoming opening of a Rwandan data transmission network by telepac: RWANDAPAC. In a press conference held 23 May, Andre Ntagerura affirmed it and confirmed it. RWANDAPAC was to be put into service with France by 1 June and with Switzerland and Canada on 1 July if all preliminary details are arranged. Actually, agreements will be negotiated with the foreign transit countries, just as it will be necessary to fix the rates, make contracts with the administration, and interest subscribers.

International traffic will be opened during a preliminary period. RWANDAPAC will permit private subscribers or professionals having a minitel [video terminal] to consult data bases situated in more than 40 countries in all continents. But one can also access them by means of a X25 compatible microcomputer. We note in passing that a minitel is connected by telephone to a computer called a data processing communications server. In other words, before subscribing to the minitel one must first have a telephone installed at home. In practice, the Rwandan subscriber will have his telephone connected to a minitel. The minitel in turn will be connected to RWANDAPAC, a data transmission switchboard (a kind of exchange). RWANDAPAC will in its turn be connected with the Paris International Transit Node (NTI). From Paris one can access other data processing communications servers situated in France or elsewhere.

The minitel offers numerous advantages. First, rapidity and flexibility. As Beatrice Gurrey writes in "Guide to Telematics" (Telematics is another neologism meaning media minitel.) For example, when an exceptional event is reported by press services, its speed is obvious. Between the ringing of the teleprinter indicating an urgent message and the circulation of the latter, only ten minutes could elapse, at least for announcing the raw news. The radio certainly can be quicker but has the disadvantage of not leaving any written record. This kind of very rapid updating can be enriched in the hours that follow by creating a file or by factual clarifications of the event. Telematics has no problems of paging, and therein lies its flexibility. Adding a few screens to a column or a few menu choices can be done quickly and without requiring the assistance of highly qualified technicians. The minitel is definitely an instrument that makes it possible always to have fresh news.

Not the least of its other advantages is its capacity to store data. What is spread by minitel is not ephemeral. There is a record of it in the computer's memory. This storage capacity is, in truth, almost unlimited. Behind the minitel's little screen emerge thousands of others.

Finally, minitel allows interactivity and person-to-person communication. A dialogue can be opened between one subscriber and his minitel, or between two or more subscribers through their machines. Man faces a machine and when he acts, it reacts.

What will be the cost of this new service, which will undoubtedly revolutionize the communications landscape in Rwanda? The decision has not yet been made but proposals are already circulating. The granting of an identification number to the user should cost around FRW 2,000 [Rwandese francs]; installation costs, 2,500. However, the administration might authorize the subscriber to buy his own minitel. In that case, the installation and maintenance of the machine are the responsibility of the retailer. The monthly subscription to the service will probably be around FRW 3,000; rental of equipment provided by the administration, around FRW 1,300 for a minitel terminal 1B; FRW 1,200 for a 40 column printer; FRW 3,200 for one of 80 columns.

Concerning international communications, total cost of the service is the sum of charges fixed in relation to length of use and volume of data. Both are charged FRW 1,000 per hour and kilo-segment when the communication is made with France or an African country; FRW 1,200 with the rest of Europe; FRW 2,400 for other subscriber countries. A change in identification number will cost around FRW 2,000; a temporary subscription, FRW 3,000, without counting communications costs. Access to the RWANDAPAC network is done by switched telephone network. The rate is FRW 40 per minute. This cost will be charged on the telephone bill. It is also possible to subscribe to the minitelnet service, permitting access to the French videotex network. The subscriber only pays for the hours of connection: no fixed costs.

The administration has about ten minitels, a gift from France Telecom, which will be rented to clients in the opening phase. Subscribers will then apply to a private retailer to obtain this kind of terminal. Maintenance will be the responsibility of the retailer. With current equipment one can transmit 30 messages simultaneously on the only line there is. The forthcoming opening of a new land station will make available several other circuits. National companies should thus be quickly formed as data base service centers. If not, there will only be one-way communication.

# THAILAND

## Communications Minister on Satellite Policy

*90WT0104 Bangkok NAEO NA in Thai 28 Apr 90 p 7*

[Excerpt] [passage omitted] On 27 April, Mr. Montri Phongphanit, the minister of communications, told reporters that he has given new principles on the "Thai Sat" communications satellite program to the committee considering this program in order to conduct negotiations with the Piyanan Company, which is the company that proposed this program. When the Ministry of Communications signs the contract authorizing this company to implement this program, during the first five years, when the Piyanan Company can stipulate that users can use China's Asia Sat satellite, the Thai government will not require government users to use the Asia Sat satellite. The company must find customers for the Asia Sat satellite by itself.

This is a new condition that he formulated himself, because he does not want there to be a monopoly on the use of the communications satellite. The reason for having the company find its own customers during the first five years that the satellite is in use is to encourage competition with other satellite services such as the Palapa satellite. This should help improve efficiency, and users will benefit more.

However, at the end of the five year period during which the company has to keep the satellite in orbit and the satellite becomes the property of Thailand, the government will help the company by requiring government units to use the Thai Sat satellite. This is because the government owns shares in this program.

Even though the conditions have been changed as discussed above, the company must still pay the government as originally proposed. This includes the condition of guaranteeing minimum revenues and the condition that the company must keep the Thai Sat satellite in orbit after the initial five year period per the agreement with the Thai government.

"Requiring everyone to use the Asia Sat satellite would not be the right thing to do, because that is not Thailand's satellite."

# HUNGARY

## Status of Hungarian Telecommunications Reforms

*90AN0319 London 1992 SINGLE MARKET COMMUNICATIONS REVIEW in English Apr 90 pp 16-19*

[Article by Ferenc Valter, director general of the Hungarian Telecommunications Company: "Hungary—Liberalization, The Way Forward"]

[Excerpt] [passage omitted on post-World War II developments]

### Present State of the Telecommunication Services

#### *Telephone Service*

The telephone network is rather underdeveloped, both as to the level of supply and the quality of service. The number of main telephone stations in Hungary is extremely low, ranking only the 27th among the 29 European countries. The number of telephones in Budapest is the lowest in the capitals of Europe. The rate of development in the past 19 years was the lowest (annually 4.3 percent) compared with countries being at similar level.

The extent of automatization is very low; the only way to reach somebody in two-thirds of the settlements is to pass through manual switching.

There is a relatively well-developed analog long-distance coaxial-cable and microwave network. This network can satisfy the present demand, and the systems in operation will be suitable also for serving the analog areas in the next ten years. The first digital secondary and cable and microwave systems are also appearing in the long-distance network.

Among the regional exchanges, Budapest has a distinct role, as it is the international gateway exchange.

#### *Non-Voice Services*

The telex service is very popular. The number of subscribers has increased annually by 5-6 percent on average for the last few years.

The telegraph network is based on the telecommunications base network with separate switching and partially integrated transmission devices.

The international telex connections are established by the international gateway exchange in Budapest. The domestic and international telex traffic is fully automatized.

Data transmission service of the Hungarian Post was officially introduced in 1986 through a switched telephone network and as a leased-line service through the telegraph and telephone circuits.

In 1981 the circuit-switched public data network was introduced. The system provides for the integration of different telegraph and data services concerning both switching and transmission. The exchange performs the functions of the national and international gateway exchange for telegraph service and circuit-switched data network.

Nowadays the telecommunication service is extended both in capacity and in the number of offered services. The development of basic services is of primary importance; at the same time the extension of user facilities is necessary, so the trials of teletex, videotex, facsimile and packed-switched services have already been started.

### Future Plans

Nowadays not only the specialists and the government are aware of the necessity for change, but everybody in Hungary. We live in a revolutionary atmosphere and seriously hope that we will be able to accelerate the development, to improve our political and economic structure in order to get closer to, and finally to join, the society of the more developed countries.

#### *The Ten-Year Telecommunication Development Plan*

In order to improve telecommunications in Hungary, a ten-year development programme had been elaborated and was discussed with all interested organizations, entities, bodies, and with foreign consultants. The actual version of the plan was presented to the minister of transport, communications and construction, and later on it was submitted to the government.

The basic objectives of the plan are to develop a customer-orientated telecommunications network capable of satisfying modern service requirements with national coverage and easy access. Quality of service has priority over simple expansion. Technology should be as modern as possible and provide a base for integration with European and worldwide systems and standards, including ISDN. Operation of the network should aim to reduce the gap between Hungarian and European norms for productivity, economy or financial viability, service variety, quality and coverage.

The main quantitative indicators to be achieved by the year 2000 are:

| | |
|---|---|
| Main lines | 2.8 million |
| Total telephones | 4 million |
| Main line density | 27 (per 100 inhabitants) |
| Telephone density | 39 (per 100 inhabitants) |
| Telex terminals | 22,000 |
| Data terminals | 72,000 |
| Mobile radio sets | 100,000 |

The principal objective of the development of telephone services is to satisfy the demands and to automatize the

national network, which means an average annual development of 12.5 percent between 1991 and 2000.

In order to reach these aims a ten-year development programme has been elaborated in two versions, determining the way of development and all conditions necessary to triplicate the speed of annual development.

Two options of the development strategy were prepared: Version 1 is the so-called "Island Strategy," while Version 2 is the "Overlay Strategy." After a general and complex analysis, Version 2 was accepted for realization.

***Plan For the First Accelerated Period***

The basis of the overlay network version is the strategy which has a stronger business character. During the first 4 years of the ten-year period a digital overlay network has to be established on the two upper levels (tertiary and secondary levels) in the network. As to switching of this network, the whole country should be covered by means of remote concentrators, multiplexers, etc. The total automatization of the rural networks is to be carried out before 2000, but mostly in the second part of the period.

In case of this version a higher investment cost per main line can be expected, together with a dynamic increase of traffic incomes in the first part of the ten-year programme. This version has better economic parameters for the telecom company and other possible investors.

Taking into account the present development stage of the Hungarian telephone network, certain automatization tasks have to be carried out together with the construction of the overlay network. The separation of these two tasks would be reasonable and advantageous neither for technical, nor for economical reasons. Therefore the local and transit capacity of the tertiary and secondary exchanges have been determined on the basis of these two (overlay and automatization) aspects.

***Production Adaptation: Difficulties in the Reorganization***

In the course of planning, the Hungarian specialists carried out a detailed assessment of the equipment necessary for implementing the ten-year programme, and they elaborated the timetable of the implementation, as well as the required quantities.

Numerous buildings, material, equipment and appliances are necessary for implementing the development project, the majority of which are available from domestic markets, and only a smaller part has to be imported from foreign markets. Considering the preliminary calculations carried out, as well as the contracts for the industry, procurements from domestic suppliers are foreseen to be about 60-70 percent, whereas from foreign markets 30-40 percent.

The Hungarian telecommunications network is currently installed mainly by analog equipment and network. The proportion of digital switching and transmission devices is low. The reason is that procurement of such installations is limited partly because of the lack of domestic production, partly because of the embargo, COCOM restrictions and hard currency problems. These restrictions concern mainly the digital switching and transmission technology, which is needed by the new Hungarian telecommunications development.

It is necessary to restructure telecommunications in Hungary for the following reasons:

- There is no perspective in further developing the network by analog equipment. They are not manufactured any longer in the countries where telecommunications is advanced or their manufacture is going to be phased out within 5 years.
- Technical development of analog equipment has been completed, their service level cannot meet the requirements, and their adaptation to the up-to-date equipment is costly.
- The installation of analog systems is space and labour intensive, therefore the investment requires more time and is more expensive. They consume more energy, their maintenance is more costly and needs more staff.
- The overlay network can be implemented economically and perspective [as published] by means of digital technology only.

Technological restructuring in Hungary must be associated with the ten-year programme.

***Organizational Frameworks of Telecommunications***

For some decades, until the end of 1988, the Hungarian PTT was the only organization offering telecommunication services to the public and acting as the Hungarian Telecommunication Administration dealing with the authority matters, too. This telecommunications structure went well with the centralized economy control system. The PTT objectives were decided centrally by the government, together with the funds for the investments which were then realized in the five-year plans. Regulations were developed, orders and instructions were issued by the PTT and at the same time the national telecommunications network was operated also by the same PTT, running as an enterprise.

The change in the economy control system made it necessary to terminate the interpenetration of authority and enterprise, and, therefore, it was decided by the government to separate these two activities. The Ministry of Transport, Communications and Construction was established on the 1st of January, 1989, charged with carrying out the authority tasks in connection with all kind of communications. As a result of that, the Hungarian PTT worked in clear business conditions in the last year (1989). Naturally, a certain amount of time was necessary to establish the new organization, therefore the year 1989 was a transitional one, and a lot of temporary solutions were used with the aim to assure that our tasks would be suitably managed. In the area of frequency management we had a lot of problems. It was difficult to

make a precise dividing line between the authority and business activities, because they had been combined for decades.

*Legal Frame*

The Post and Telecommunications Law was a further obstacle to the development. This law was enacted more than twenty years ago and necessarily it contains a lot of out-of-date provisions, which need amendments. It is enough to mention only two of them. Provision of public telecommunications service was the exclusive monopoly of the Hungarian PTT according to the Telecommunication Bill. This situation is today indefensible. In the area of telecommunication it is necessary to establish the possibility of competition, too. Another provision of the Telecommunication Bill was that the equipment used by public telecommunication service could be state-owned only. Pursuant to this, the participation of the foreign capital in the development of the Hungarian telecommunications is almost impossible.

The modifications to the law make possible to establish telecommunications joint ventures with or without foreign participation and further on to introduce foreign capital in all possible forms, for example as finance capital or as active, functioning capital. The formal legal obstacle was cleared out of the way of the development in the Hungarian telecommunications.

*Magyar Telecom*

At the end of 1989 it was decided by the Government to split the Hungarian PTT into three entities, and to carry out the three different activities within three independent enterprises. Pursuant to this decision, the Hungarian Telecommunications Company, the Hungarian Posts Company, and the Hungarian Broadcasting Company were established on the 1st of January 1990.

The number of staff in the Hungarian Telecommunications Company amounts to 25,000 at present; the Headquarters in Budapest controls seven Regional Directorates and fifteen smaller or bigger organization units. Furthermore, economically independent enterprises were established to carry out different activities of telecommunications, for example: to install and maintain PBXs, to conduct researches, planning and so on.

In conformity with our further plans, the Company, which is at present completely owned by the state, will be transformed into a shareholder corporation so that beside the state ownership, it might be possible to bring in other capital, for example foreign one. This step will be very important in the realization of the quick development.

If the shareholder corporation is instituted, the partial privatization of the Hungarian telecommunications will be possible, too. We are keen on reaching with this step the advantages gained in several cases in the industry after privatization. Our hopes are big and we are confident that with the help of our foreign partners they will come true.

**Conclusions**

In reviewing the tasks to be done we may summarize that the Company offering and providing telecommunications services should be independent. The independence implies two items: On the one hand, the regulation and the operation should be separated. If the authority tasks are carried out in the very same organization, which is the operator, the optimal satisfaction of the demands and needs, as well as the effective, quick development cannot be provided for. On the other hand, the quickly developing, economically operated telecommunications should not be interlinked with the postal service. Apart from some small advantages of this marriage, we have met a lot and significant disadvantages in the last years.

The legislation should guarantee for the foreign partners the possibility to take part directly in the development of the Hungarian telecommunications. The first steps have already been done to realize these aims. The Hungarian Parliament has recently modified the Telecommunications Bill and, as it is expected, a new draft law will be negotiated at the end of the year. It will take into account more carefully the changed conditions of the telecommunications. The Hungarian Telecommunications Company providing the traditional services can be developed more efficiently, can better fulfill the expectation of the society, if it has the possibility to work together with the foreign partners directly. Maybe, after reaching a given level of development, some years later, the significance of that effect will be smaller, but on the present level of our development I feel this joint work has an outstanding importance.

The operator should adjust itself to the competitive environment. This demand is only a target at present. The monopoly was terminated only some months ago, and we have had no time to survey the possibilities available. On the basis of the knowledge of the preliminary work, I can state that the preparation for the competition, and the danger of missing the chance, have a stirring effect to our thoughts and to our actions. We have only taken the first steps in that direction, but feel the influence.

## Radio Telephone Services Authorized

*90CH0181A Budapest MAGYAR NEMZET in Hungarian 21 Apr 90 p 7*

[Article and interview with Akos Takacs, ministerial consultant and department head, by Janos Budai; place and date not given: "There Will Be Radio Telephone After All—Two Entrepreneurships Begin the Competition"]

[Text] In last week's issue, our article "The Silent Radio Telephone" dealt with the vicissitudes of and obstacles to developing the Hungarian radio telephone network. In

the middle of this week, the Ministry of Transportation, Communication, and Construction informed the entrepreneurs interested in developing the radio telephone network of its position and decision, on the basis of which the obstacles for the initiatives of both Hungarian Telecom, Limited, and Hungarian Radio Telephone, Limited (Hungarian Telecommunications Enterprise has an interest in the latter) will come to an end. The ministry's position deemed as primary the principles that the development of the radio telephone network should not be financed by the state and that the analog and digital systems so developed should be compatible with the Pan-European digital system now under development.

### The Minister Approved It

In the letter signed by Minister Andras Derzsi, frequency ranges were assigned to the two entrepreneurs. Detailed conditions for using these frequencies will be given the competitors by the Frequency Management Institute. Following that, they will have to submit a request for service concessions. They can get the concessions after complying with several stipulations (e.g., the regulations of the postal law), and a first-class bank guarantee for the entire investment from the foreign financier.

Since the stipulations for concessions are still being worked out in the ministry, applicants probably will be expected to comply with the following as well:

—The system must be developed into a national network by 31 December 1993.

—Eighty percent of the profit, originating from the system's operation and taken out of the country by the foreign partner in foreign currency, must be used by the end of 1998 for further development of Hungarian communications and various infrastructures.

—Suppliers of equipment may be selected only by bidding. In making a selection, production and delivery capabilities of Hungarian industry must also be considered.

—The manufacturer may not be an operator at the same time.

Entrepreneurs must formally apply for concession licenses by 30 June 1990. After the concession's expiration, the companies must surrender the system to the state free of charge, but they retain priority in operating the system. A fee and a security deposit must be paid for the concession, the sum and due-date of which will be determined in the concession—in agreement with the National Tax Office and on the basis of the kind and sum of the currency invested.

### Stricter Conditions

Ministerial advisor and department head Akos Takacs, speaking on behalf of Andras Derzsi, provided information on the decision's background.

**Budai:** "In your opinion, what is the reason for having delayed the decision for so many months?"

**Takacs:** "Frequencies are also a national treasure. Therefore, their use must be carefully planned. In addition, even within the circle of experts there is no consensus regarding the question of analog and mobile digital telephone systems. I do not believe that, even in the West, a license has been issued faster to the first applicant with the idea of building a mobile telephone system. In addition, another difference in Hungary is that while in the West the mobile systems are also meant to boost the demand of the market, here they will be used mostly to supplement the low-capacity fixed telephone network. We will have far fewer truly mobile radio telephones such as those built into cars."

**Budai:** "In what way is this standpoint stricter than the conditions specified in preliminary correspondence?"

**Takacs:** "Keeping Hungary's interests in view, we set a lower limit on the profits that a foreign partner is allowed to take out of the country in foreign currency. In the preliminary regulation, Telecom, by 1995, was to reinvest 50 percent of the profits allowed to be taken out of the country in foreign currency; this has now been changed to 80 percent and extended to the end of 1998. This, then, is a stricter condition. But the conditions for Hungarian Telecommunications Enterprise are also stricter, for state funds may not be used for building the system—and these same regulations apply to them as well. With these standpoints we wanted to achieve, to use the language of sports, a track on which each competitor could run under identical conditions. Let them line up at the starting line together and, after the pistol goes off, may the best man win. Let me add here that, since these are probationary licenses, very exact technical plans will have to be submitted for the actual licenses. Thus, there is still much work to be done."

**Budai:** "Is it not a concern that the new leadership in the ministry may perhaps modify this set of conditions?"

**Takacs:** "We prepared the propositions worked out by the old (present) leadership for the infrastructure's development, based on professional viewpoints and discussions with representatives of the various parties. This is partially a guarantee that these principles are good and need not be changed. For if the decisions made now could be changed depending on who sits in the minister's or department heads' chairs, then it would mean that we did not do a good job. Let me add that the previous National Assembly only modified, not rewrote, the postal law. The new Parliament could add further modifications."

**Budai:** "Has there been any feedback yet on how the entrepreneurs concerned reacted to the ministry's decision?"

**Takacs:** "We have already received a written reply from Telecom that they accept the conditions. They promised

that by the end of this year their mobile radio telephone system will be operating in Budapest."

**The Winner Is: the Citizen**

There are a few small things to add to what Akos Takacs has related. Telecom will not build its own system jointly with the Australian firm, Bond Corporation, because in the meantime the latter has encountered financial difficulties, thanks in part to Australian banks. In its stead the American company, Contel, will join the venture, contributing not only money but telecommunications expertise as well.

On the basis of the above, it seems that the radio telephone issue will be solved. Those waiting for telephones may emerge the winners in the competition between the two companies, and then contractors and private persons with enough money may subscribe for telephone service, which will begin, at least in Budapest, by the end of this year. This correspondent is also happy about this and would like to report of still more good news.

## BANGLADESH

### Contracts for Expansion of Digital Phone Service Signed

*55500082 Dhaka THE BANGLADESH OBSERVER in English 25 May 90 p 10*

[Text] Telephone Shilpa Sangstha (TTS) is expected to embark on a broad based programme of involving itself into the network of telecommunication operation in the country, reports UNB.

TSS, the lone manufacturing plant of telecommunication equipment in the country, on Thursday signed an agreement with T&T Board for installing digital electronic telephone exchanges in 91 upazilas of 19 districts of Rajshahi and Khulna divisions.

Maqsud Ali Khan, Chairman T&T Board and Fazlur Rahman, Managing Director, TSS signed the agreement on behalf of their respective organisations at TSS.

According to the agreement the TSS would be responsible for operation maintenance and revenue collection in the upazilas.

Earlier, the Board signed agreements with two private companies to establish telecommunication link with 203 upazilas of the country.

## INDIA

### Department of Telecommunications Releases Annual Report

*55500078A New Delhi PATRIOT in English 4 May 90 p 11*

[Article: "Significant Progress in Telecom Sector"]

[Text] The Department of Telecommunications made significant progress in bringing remote, backward and rural areas of the country into the mainstream during 1988-89, reports UNI.

According to the annual report of the department, 2,836 long distance public call offices were opened during the year of which 190 were using the multi-access radio relay system.

A beginning was made in the installation of small automatic exchanges and 862 exchanges including 118 electronic ones had been commissioned in the rural areas.

The report pointed out that the number of telephone metred call units increased to 2027.6 crore compared to 1933 crore during 1987-88. Similarly the number of telex metred call units increased to 38.9 crore during the year as against 36 crore in 1987-88.

The revenue of the department including Mahanagar Nigams increased to Rs 3405 crore during the year compared to Rs 2424 crore in 1987-88.

The report said recording activities during 1989-90 indicated that 148 new telephone exchanges were opened till december, 1989 and the total exchange capacity rose to 49.35 lakh lines with 43.48 lakh working connections.

During the same period, 185 route kms of co-axial cable systems were commissioned bringing the total of 23,234 route kms.

Besides this, 801 route kms of microwave systems and 820 route kms of ultra high frequency systems had been pressed into service by December, 1989.

Reporting the status of various products developed by the Centre for Development of telematics (C-DoT) during 1988-89, it said that over 1000 units of 128 port capacity were now working in the field providing "satisfactory services" to the customers. The capacity was being enhanced from 128 port to 256 port adding new features for hotel and business applications.

The report said the department had sanctioned a project estimate for 20 "fly away" terminals for the crisis management of the telecommunication needs anywhere in the country at short notice in case of floods, earthquakes fire, cyclone, landslides, civil disorders, epidemics and riots.

The "fly away" terminals will also deal with the communication needs in case of atomic power disasters, chemical plant disasters and melas.

A letter of intent for these terminals had been placed on Bharat Electronics Ltd (BEL).

The report also said a total of 690 lakhs—a fall by six percent over 1987-88—inland telegrams were handled by the department during 1988-89.

### Editorial Deplores Return of Multinationals

*55500079A New Delhi PATRIOT in English 26 Apr 90 p 4*

[Article: "Telecom Multis Are Back"]

[Text] It is hardly surprising that the giant French telecom multi-national CIT-Alcatel should be showing a new keeness for a fresh entry into the Indian telecommunication market. Others such as ATT are likely to follow suit unless the National Front government takes care to reverse the signals that have been given out by the unsavoury controversy over the performance of C-DOT and that of the Telecom Secretary, Mr Sam Pitroda. The uncertainty over the fate of C-DOT, which has become an international symbol of India's effort at self-reliant technological development in this critical sector, has only fuelled hopes among multinationals of capturing the large Indian market. According to some estimates, the latter is said to be worth Rs 1500 crore. Although it is not that C-DOT had done away with all imports in this vital area, active government backing to it had ensured that the telecommunication sector was not open to

unrestricted entry of foreign multinationals. The fact that Alcatel, which already has an agreement with Indian Telephone Industries, is not interested in upgrading the existing tie-up but wants a fresh collaboration with a private firm also points to the nature of interest that the multinational has in India. Rather than technology transfer, it is interested in a set-up which will enable it to have a say in the management of the concern. Given its past failure to meet its contractual commitments, a further foot-hold in this sector would clearly thwart all indigenous research and development efforts, not only resulting in a motivational set-back but also in opening up the economy to exploitation in a crucial area of development. There is no doubt that C-DOT has not lived up to its time schedule but in an area where the best of nations took far more time in developing the large switching systems, the ambition of a three-year target needs to be discounted. Much of what happens in the near future will depend on the new Minister for Telecommunications who has a lesson to learn from the alacrity with which the French multinational has evinced interest in a new project. There is also need for great vigilance, for given the attractiveness of the Indian market, and the fairly sullied reputation of Indian decision makers' honesty and integrity, the lengths to which the multinationals are likely to go to secure a market in India should not be underestimated.

## Audit Scores Delays in Implementing Telecom Schemes

*55500077A Bombay THE TIMES OF INDIA in English 17 May 90 p 7*

[Article: "Huge Loss Due to Telecom Delays"]

[Text] New Delhi, May 16 (PTI): The comptroller and auditor general (CAG) of India has criticised the department of telecommunications for delays in commissioning of three microwave expansion schemes and three co-axial cable schemes which have resulted in cost overruns of over Rs 20 crores and loss of potential revenue of over Rs 11 crores.

In his report on the department of telecom, laid in Parliament yesterday, the CAG has also castigated it for its failure to meet even half the target for laying of underground cables and pointed out that no headway had been made in introducing the new technology of optical fibres.

The total sanctioned cost of the six projects of microwave expansion and co-axial cables analysed in the report was Rs 28.45 crores. The actual cost incurred till the latest information available was already Rs 49 crores despite the fact that two of the co-axial cable schemes had not been completed.

Besides, the potential revenue loss of Rs 11 crores due to non-fulfillment of the projects had also to be considered.

An alarming feature of these projects was that in all except one case the delays in supply of equipment or supply of sub-standard equipment had compelled imports to complete the projects, resulting in a huge outgo of foreign exchange.

The CAG has characterised these six projects as "symptomatic of defective planning, trady implementation, ineffective monitoring and lack of functional coordination between the various executing agencies."

Another worrying feature brought out by the report is the slow progress in rural areas, where 1895 telephone exchanges were opened till March 1989 against a seventh plan target of 4,954. The allocation of Rs 200 crores for rural communication was only 8.7 percent of the total outlay for the mini mission, which showed that the urban bias had persisted, the report added.

# EUROPEAN AFFAIRS

## EC Advanced Communications Report Noted

*90AN0289 Amsterdam COMPUTABLE in Dutch 4 Apr 90 p 1*

[Article by COMPUTABLE correspondent: "Appeal for the Speedy Introduction of a Broadband Network in the EC—Report on Advanced Communications"]

[Text] Brussels—The development of advanced broadband channels for very-high-speed data transmission (broadband ISDN) must be speeded up considerably, and the transition to a commercially operating integrated broadband communications network in Europe must take place as soon as possible.

This recommendation is made by a group of international consultants in a report entitled "Perspectives for Advanced Communications in Europe," a study ordered by the EC Commission. The latter is conscious that Europe's position in telecommunications is not nearly so good as was assumed to be the case a few years ago.

The report recommends the development of a highly functional long-distance carrier that can provide integrated voice, data, and video telecommunications services. In addition, research and development in Europe should lead to efficient technical definitions and the implementation of true pan-European standards.

The program for "Research in Advanced Communications for Europe" (RACE) must be followed up with a program which places more emphasis on product development, including pilot projects for application testing. The process of liberalization and harmonization of relevant regulations needs to be strengthened.

The greatest demand for broadband communications will come from abroad. International data exchange is the fastest growing sector of business communications. Current intra-European market demand can no longer be met. This is because typical users, including a growing number of smaller businesses, already have pan-European operations, while telecommunications services remain almost completely limited to their own countries with very little opportunity for cross-border expansion.

According to the report, a logical step would be to develop a real European broadband infrastructure, under the authority of a European long-distance operator, which could then form the basis for future developments in the field of broadband communications.

Such an operator should not be modeled after AT&T and become the dominant long-distance carrier in Europe, but should fill anticipated gaps between conventional (narrow-band) and intra-European broadband telecommunications services.

Such a semipublic company should have as shareholders the national PTT's together with other interested parties, such as large-scale users or equipment suppliers.

The implementation of this European network will also have another major advantage. It will be the precursor of the actual implementation of advanced telecommunications capacity and services. It will, however, be some time before the national PTT's will accept such a new pan-European company.

It will also be essential for the new company to have sufficient resources to meet customer needs and to be able to become an important player in the European and international telecommunications world.

Along with the establishment of a long-distance carrier, a European telecommunications research and development organization should be set up along the lines of the U.S. Bell Labs.

## ISDN Introduction in EC Countries Compared

*90AN0187 Paris TELEMATIQUE MAGAZINE in French Dec 89-Jan 90 pp 54-55*

[Article by Bernard Montelh: "Internationalization of Digital Networks"]

[Excerpts] There are as many ISDN's as there are countries, which makes for quite a din. Fortunately for prospective users, the international standards authorities are keeping a close watch. They promise standardization, at least on the European level, by 1992.

In the 1990's, all ISDN's will be compatible—at least, that is what they are saying at France Telecom, where the issue of international standardization is being met head on. Their haste is understandable: The significance of France's technological advances would diminish if Numeris were to remain within its own country.

For this network to be used outside, one sine qua non condition must be met: interconnection among the different ISDN's. However, before this can happen, the other countries will have to install digital networks! This is more easily said than done: The other countries are not "lucky" enough to have been considerably behind the times in the 1970's, which would have allowed them to become directly equipped with a digital infrastructure. With over 70 percent of its network digitized, France can advance more quickly without too great an investment on its part.

The exact opposite is true in the FRG, which has been compelled to invest some DM 40 billion to create from scratch, in an initial phase, a network of lines and digital switches parallel to its telephone network and to step up the pace of the network's modernization. Out of 6,300 telephone exchanges, only 180 were digitized at the end of 1988; in 1989, 150 analog exchanges were due to be replaced by digital exchanges that would be able to handle ISDN. The German ISDN system, inaugurated at the CeBIT Fair in Hanover on 8 March, is already

operational in that city as well as in Berlin, Duesseldorf, Frankfurt, Hamburg, Munich, Nuremberg, and Stuttgart, and should be serving the whole country by 1993. According to the Bundespost, 80,000 basic accesses and 7,000 primary accesses are to be installed by 1990 and will reach over 1.5 million in 1995.

A different problem faces Great Britain, where an integrated services digital network called IDN has been marketed by British Telecom since 1987. Unfortunately, it does not conform to any of the norms set by the International Telegraph and Telephone Consultative Committee (CCITT) and thus will not be able to be connected to the other networks. Therefore, the British have simultaneously started work on "real" ISDN, which should be ready by the end of this year. The other European countries have no intention of being left behind; the marketing of digital networks should appear all over Europe in the early 1990's.

In Italy, a pilot program involving over 2,000 users was launched in 1988; it will be finalized in 1991, assuming that the new Proteo UT switch, built by Italtel and Telettra—necessary for the installation of the required ISDN infrastructure—is not delayed. Spain, for its part, seems bent on burning its bridges within the framework of an extremely ambitious modernization plan for its network and a policy of deregulation. An ISDN development plan, soon to be presented in detail, plans rapid commercialization to reach 7,200 basic accesses and 4,400 primary accesses by 1992.

The commercial launch of ISDN in Switzerland, Belgium, and Sweden should appear in early 1991. The Netherlands has decided to be cautious. An initial experiment was launched in early 1989, but Telecom Nederland is waiting for an international code of standards to be finalized before proceeding fully. Moreover, its telephone network will only be completely digitized in 1995. [passage omitted]

All these countries must still be linked up beyond their borders. Why was this not thought of earlier? The truth is that it was considered. France Telecom points out that this is the first time that a standard was defined before the networks' installation. In fact, the CCITT has been working on ISDN standards since 1980: An initial recommendation was issued in a 1984 "Red Paper." Unfortunately, it was rapidly rejected as incomplete. Although the first two layers ("physical" and "data") of the universal Open Systems Interconnection (OSI) model have been well defined, the description of layer 3 (D-Channel protocol) was too general, as was the description of the service complements added to the common language for interexchange communication as defined in CCI Recommendation No. 7.

The initial services were thus developed on this imcomplete basis. They were all completed differently, until the publication, in 1988, of the CCITT "Blue Paper," which was intended to fill in the gaps by ensuring an ascending form of compatibility capable of accommodating services operating under the old standards. On the European level, an effort has been made to translate into concrete terms and to carry out the "Blue Paper" recommendations in a European telecommunications standard—NET 3—which will finally enable all the networks in the "Old World" to be interconnected in 1992. In addition, that same year the final touches should be put on a world standard, which seems to point to working interconnection before 1995.

**ISDN Tariffs Throughout the World**

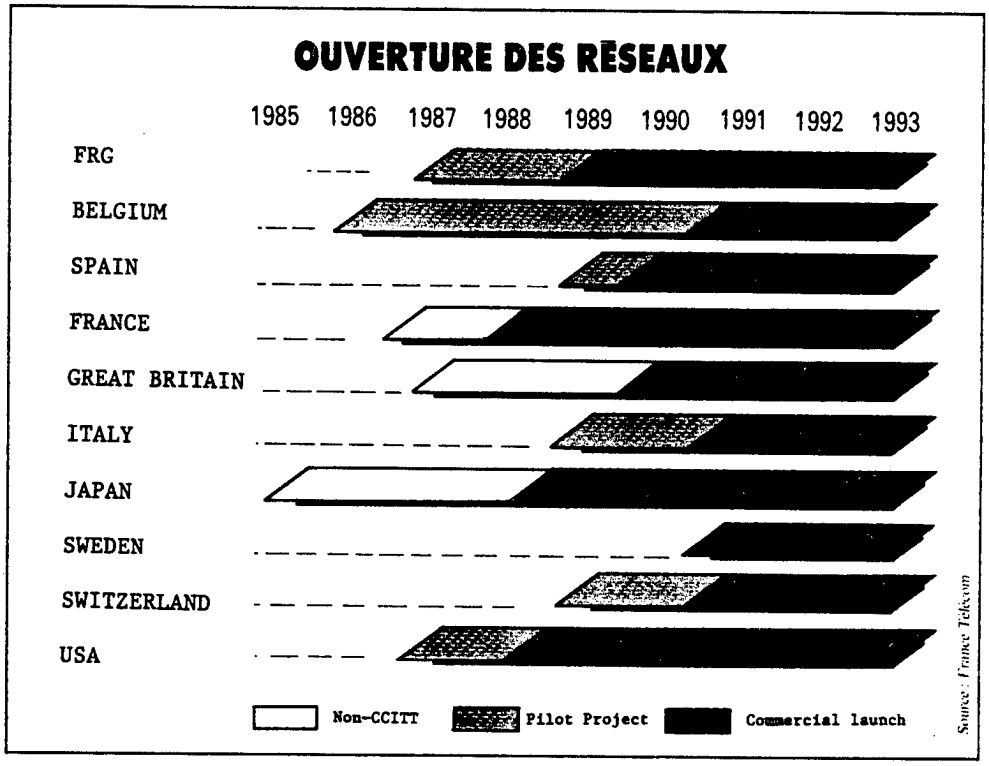
| Country | Basic Access (in Fr, excl. tax) | | Primary Access (in Fr, excl. tax) | |
|---|---|---|---|---|
| | Access Fee | Monthly Subscription | Access Fee | Monthly Subscription |
| Belgium | 2,000 | 400 | 70,000 | 4,700/5,700 |
| | | | following: 29,000 | |
| France | 675 | 300 | 4,200 | 104 per B Channel (32 if specialized has arrived) |
| FRG | 450 | 250 | 700 | 1,750 |
| Japan | 3,300 | 250 | | |
| Norway | 4,500 | 240 | | |
| USA (ATT) | | | 16,950 | 2,260 |
| USA (Illinois Bell) | 1,400 | 170 | | |

## EC Eliminates Price-Fixing on Leased Circuits

*90AN0297 Brussels TECH-EUROPE (EUROPEAN POLICY Section) in English Apr 90 pp 2-3*

[Article: "Commission Puts Stop To Price Fixing by National Telecoms Bodies"]

[Text] Europe's national PTTs (post and telecommunications authorities) have been forced by the European Commission to end massive surcharges imposed when leasing out telecommunications circuits to private operators. The agreement between the 26 members of the Conference of Postal and Telecommunications Administrations (CEPT) to fix the terms and price for access to circuits constituted a restrictive business practice, violating Article 85 of the Treaty of Rome. It is the first time the Commission has ruled against the organisation which includes the PTTs of all twelve EEC countries.




**Launch of ISDN Networks**

The March 6 decision "is a landmark case in the application of Community competition law to telecommunications", according to the Commission. It re-establishes competition between operators for the supply of international leased circuits, to the benefit of users and the suppliers of value-added services, the Commission said. Complaints had been lodged with the Commission that the CEPT practice was liable to increase telecommunications costs and restrict the growth of value-added services. Under a CEPT Recommendation of April 1989, national PTTs agreed to impose a 30-percent surcharge or an access charge where third-party traffic was carried on a leased international circuit or a circuit interconnected with the public telecoms network. Uniform pricing formulas for leasing were also imposed.

The Commission had opened its investigation at the time the recommendation came out. It told the CEPT that it was to be treated as a group of organisations, like any group in the private sector, and that price-fixing between its members was therefore in breach of the EEC Treaty.

## European E-Mail Association Described

*90AN0298 Luxembourg IES NEWS in English Apr 90 pp 7-8*

[Article: "The European Electronic Mail Association—A Progress Report"]

[Text] EEMA, the European Electronic Mail Association, was founded three years ago. Since then, the Secretariat has moved to the United Kingdom and many new activities have started, mirroring to a large extent the growing use of electronic mail in Europe and the progress in research and other networking so vigorously supported by the EC Commission.

EEMA represents actual and potential users of E-mail, as well as service providers, equipment manufacturers, software suppliers, public and private telecommunication operators, together with academic, professional and other special interest groups who are or will be involved in the implementation of integrated European E-mail and message handling services (MHS).

With the progressive liberalisation of telecommunications following the Commission's initiative in this area, more and more telecommunication services are becoming available in the Member States and other European countries, these being offered by both Public Telecommunication Operators and, where permitted, by third-party value-added service providers. Of these services, the most common are public and private E-mail facilities, although other services have recently become prominent. A typical example is the growth of Electronic Data Interchange (EDI) application-oriented services.

One of the major difficulties in the wider use of E-mail is that present-day services are generally incompatible to the extent that users of one service are unable to

exchange messages with users of other, rival services. Operator assistance is also frequently lacking. One result is that the old-fashioned services such as letter post and the telephone offering universal message delivery to every part of the globe continue to be very popular. The growing appeal of facsimile transmission using the telephone network is another feature which may retard the market penetration of E-mail, especially given the sharp drop in investment required in fax equipment where prices are within the reach of most potential E-mail users.

Recognising the need to further pan-European Interconnectivity of electronic message handling systems and services, the Commission has encouraged EEMA to take the lead in developing a Memorandum of Understanding (MoU) in this area. EEMA has set up a task force for this purpose with members drawn from the Netherlands, the United Kingdom, France, and Italy, representing both industrial users and public and private operators.

A three-stage approach is being made in the development of this MoU. The first stage is to establish demand: Service providers have to be certain that there is a sufficient demand for an interconnected electronic messaging network. This will require positive response from the players concerned, i.e., potential users and vendors of messaging products and services. To further this stage, a Declaration of Support for the pan-European Interconnection of Electronic Message Handling Systems and Services is being developed by the task force. The Declaration states that interconnection would be based on X.400. (Other European activities in network interconnection spearheaded by RARE [Associated Networks for European Research] and the Commission, especially COSINE [Corporation for Open Systems Interconnection Neworking in Europe] and the IXI Backbone Service, as well as Y-Net, are designed for research usage and interchange of research data, etc. Messaging represents only one aspect of the services to be provided, even though it is an important one. The facilities to be provided are, however, intended solely for research purposes and not for industrial or commercial ones, so that interconnectivity for services catering for these applications has to be achieved separately.) The Declaration of Support will be open for signature by all market participants. Service providers should contribute to the development of the MoU; vendors develop and market products; and users interconnect their private services to the pan-European system. The Declaration of Support includes suggested principles to be incorporated in an MoU. Stage one will be completed on obtaining signatures for this Declaration.

Stage two will be the actual development and signing of the MoU, and will follow as quickly as feasible after the first stage. Signatories of the MoU will be committed to stage three, the specification for the interconnected system and its implementation.

In this context, EEMA has also prepared comments on the Working Document on the Application of Open Network Provision (ONP) to Public Data Networks (PDNs) developed and published by the Analysis and Forecasting Group (GAP) of the Senior Officials Group (Telecommunications) (SOGT). The EEMA comments were presented at a meeting convened by the Commission in October 1989. The proposals to standardise and harmonise the network characteristics and services to be provided on Public Packet Switched Data Networks (PSPDNs) is welcomed by EEMA, but at the same time recalling the earlier plans of many years ago for EURONET and its absorption into the emerging PSPDNs which was not realised because network operators at that time did not perceive commercial advantages in upgrading their networks to international standards, EEMA stresses the need for some pressure to be brought on service providers to implement the GAP proposals. EEMA members use PSPDNs in several ways ranging from utilisation of Permanent Virtual Circuits and X.25 facilities via X.28 or X.32 dial-up, leased lines and X.400 procedures. Specific points made by EEMA include the need to indicate costs of any mark-up made by value-added service providers using PSPDNs for transport purposes where automatic reverse charging applies; concern that dial-up X.28 access does not include as an ONP offering the 300 bit/sec rate, which is still widely used by many E-mail users; and the essential need to allow E-mail users to access their mailboxes from all locations, not only nationally but internationally at the earliest possible moment. Other comments relate to simplification of commands and error messages, charging levels and local dial-up access using both X.28 and X.32, this last being particularly important in less developed countries where geographical coverage could encourage the use of PSPDNs for electronic messaging services. EEMA are not alone in pressing for early introduction of automatic reversed charging on an international basis.

In reviewing activities by EEMA, mention must also be made of the Joint EEMA—US Electronic Mail Association Conference, the first common venture, held in Miami 28 February-1 March 1990. EEMA also publish a newsletter, "EEMA Briefing."

## EC Proposals on Cordless Phones, Wavebands

*90AN0314 Brussels EUROPE in English 11 May 90 p 14*

[Report: "Cordless Telephone in EC: European Commission Asks Council To Ensure Single Wavebands and Favour Coordinated Introduction Into EEC"]

[Text] Brussels, 10 May (EU)—The European Commission has submitted a Recommendation to the EC Council concerning the coordinated introduction of digital, cordless telephones into the EC and a Directive aimed at reserving wavebands for the telephone. For the Commission, this double proposal is "vitally" important in the development of the internal market of telecommunications services within the EC. The potential

market for these telephones, the DECT—Digital European Cordless Telephones—is enormous and offers considerable possibilities to equipment manufacturers, network operatives, and end users; only the introduction in due course and the coordinated setting up of DECT norms entirely harmonised throughout the EC will enable this potential to be fully exploited and concretised.

The aim of the Recommendation "for coordinated introduction of European digital cordless telecommunications within the EC" is to orientate and accelerate the efforts of Member States, telecom administrations and industry in order to define a common solution which would avoid proliferation of national remedies which, in turn, would fragment the market, and, consequently, cause a rise in production costs and incompatibility between systems. At the present time, in the EC there are three norms which are compatible between them: the CEPT 1 norm in most Member States, the "41-26" norm in France, and the UK CT1 norm in the United Kingdom (only Member State where the cordless telephone market is really developed).

The Recommendation, which is the result of in-depth discussions with experts from telecom administrations, the European Institute for Telecom Norms (ETSI) and ETSI Industry, underlines the fact that the choice of transmission system and the network's infrastructure should be fixed by October 1991 and that the service should initiate from the end of 1992. Firm political commitment is essential, in the Commission's opinion, for the credibility of the system.

Investment will mainly be met by those running the service who, with the end users and the manufacturers, will reap commercial advantages from it. The Commission, however, envisages EC financial aid in order to establish a vast Community infrastructure; in particular, a special programme could give less favoured regions better access to advanced mobile communications.

According to the Recommendations, the DECT should operate in the wavebands 1880-1900 MHZ, which will be reserved for it within the EC. It should offer the following services to the users, in conditions of interoperability:

a) A residential service (for private persons) interconnected with the ISDN/RTPC (integrated services digital network) for which the number of units sold, after six years of service and at the lower price of ECU 200/unit) could reach from 8 to 10 million units/year;

b) A service of cordless telecom for companies combining the characteristics of a PABX (cabled telephone connected directly or indirectly) with the mobility of cordless telecom for vocal and non-vocal applications. At the present time, it has been calculated that only 30 percent of telephone calls reach the person called, who, in 70 percent of the cases, is not near the phone at the time of the call. One can calculate that cordless telephone sales in offices will rapidly reach between 1.2 and 1.8 million units per year;

c) A telepoint service which gives the receiver access to the public network via a basic public or private station (established in stations, petrol stations, etc.). General public and company telepoint services should, at long term, respectively represent a market between 0.2 to 0.5 million units per year and three million units per year;

d) A service supplying radio means of extending public and private networks to the premises of subscribers. The idea of a local radio network would enable both the setting up of work posts and terminals and mobility. This market is at an early stage, but in time this service will make it possible, for example, to easily reestablish the work posts, terminals and personal computers, and will make it possible to have a whole series of office automation devices for communication via radio modems.

The Recommendation is founded on Article 235 of the EEC Treaty.

The aim of the directive is for the Member States to reserve the 1880-1900 MHz waveband for this type of telecommunication before 1 January 1992. The Commission has chosen the form of the directive because it links the Member States. The Commission thus hopes to ensure availability of sufficient frequencies to set up the system as soon as possible.

The directive was based on Article 100A of the EEC Treaty.

Several European industrialists (Philips, Ericsson, Ascom, Alcatel, Hegenuk) have already signed a protocol agreement which underlines their intention to carry out DECT as from 1992 and ESPA—European Association for the Constructors of Portable Communications Systems—has confirmed availability of equipment at this same date.

## CANADA

### BC Cellular to Double Capital Investment

*55200052 Vancouver THE SUN in English 4 Jun 90 p D4*

[Article by David Smith]

[Text] The cellular telephone business in B.C. is a victim of its own success, a telecommunications consultant says while pointing to poor service as a result of too-rapid growth.

"The success has been more than they can cope with and everyone is suffering for it," said Ellen Koskinen-Dodgson of Telecommunications Management Consultants Inc. in Vancouver.

She made her comments Friday shortly after B.C. Cellular announced a doubling of its capital investment to

$200 million to add more cell sites, expand its coverage and upgrade its cellular telephone switching system in B.C.

"They are in desperate need of that money," said Koskinen-Dodgson.

A subscriber to B.C. Cellular's telephone service who travels a great deal, she said in recent months she has experienced cut-off conversations, static, all-circuits busy signals and—in some parts of Vancouver—"cross-talk" or interference from other callers.

"It's quite frustrating," she said. "We're embarrassed to call clients on the phone now."

Mick Mullagh, vice-president and general manager for B.C. Cellular, agreed that the explosive growth of cellulars in the province has caused some service problems.

Since B.C. Cellular began in 1986, the customer base has doubled each year, he said. Mullagh estimates a total 65,000 cellular users now in B.C. using either their service or Cantel, the only competitor.

It's part of the reason we're spending $200 million. Of that amount, fully 75 percent will be spent in the Lower Mainland and southern Vancouver Island.

"We have people here working day and night, turning grey, putting in cell sites," he said. Of 32 new cell sites planned for 1990, 18 will be in the Lower Mainland.

"We had problems in February, March and April, but in May we've seen a definite improvement," Mullagh said after scanning trouble reports and service survey results.

Growth of the B.C. Cellular network also has been hampered by an 18- month or two-year lead time required for municipal permit approval and finding trained staff, he said.

The $200-million, five-year capital investment will be split between expanding the network's capacity using a new high capacity cellular switch called SuperNode and Networks, a network management system developed by MPR Teltech in Burnaby and extending the service beyond southwestern B.C. and the Okanagan through two different corridors to the Alberta border.

On top of that investment, B.C. Cellular unveiled plans last week for its new $32-million headquarters at Canada Way and Willingdon in Burnaby.

B.C. Cellular announced in May 1988, it would spend $100 million over five years to expand its system to meet a growing demand.

Fred Palidor, a Palidor Radio Communications Consultants Ltd. in North Vancouver, noted that to "accomplish a $100-million expansion may involve another $100 million to revise the existing infrastructure to do it."

## BC Mobile to Spend $1 Million to Perfect Cordless Network

*55200053 Vancouver THE SUN in English 6 Jun 90 p D9*

[Article by David Smith]

[Text] A new B.C. Tel subsidiary has started up in Burnaby that will oversee a province-wide radio-paging network and conduct field trials for a cordless telephone system.

B.C. Mobile Ltd. president Fares Salloum said Tuesday his company will spend more than $1 million in the next 18 months perfecting a cordless telephone network—sometimes called the next generation alternative to cellular phones.

That funding is in addition to the $20 million in capital spending required to service an initial customer base for cordless phones in B.C. estimated at 60,000.

B.C. Mobile will also be managing Pagecall Services, which has 18,000 subscribers. It was formerly handled by B.C. Tel's Portable Communications Division in competition with National Pagette.

Salloum said he thinks the paging service is a natural fit with the cordless phones—a smaller, cheaper version of cellular telephones with pocket-sized handsets that cost about one-quarter the price of cellulars.

"We see paging as a complimentary service to the wireless, as well as cellulars," Salloum said.

In mid-May, the federal department of communication said eight companies had applied for authorization to conduct field trials for public cordless phone systems.

The two B.C. companies were B.C. Mobile and Glenayre Electronics Ltd.

## Bell Cellular to Offer Users Snoop-Proof Scramblers

*55200054 Toronto THE GLOBE AND MAIL in English 7 Jun 90 p B4*

[Article by Lawrence Surtees]

[Text] Bell Cellular has developed a new scrambling service that will allow its cellular radio-telephone subscribers to encrypt all their voice and data communications.

The optional service, dubbed Privacy Plus, will be available in mid-July and will sell for $89.95 a month.

"We believe its a niche product that is in demand for law enforcement, government and defence users," Paul Nathanielsz, manager of product development at Bell Cellular, said in an interview.

Bell Cellular is a subsidiary of Montreal-based BCE Mobile Communications Inc. It has 141,000 subscribers

in Ontario and Quebec and provides service in competition with Rogers Cantel Inc. of Toronto.

Mr Nathanielsz said Bell Cellular recently tested the new encryption service in a six-month trial with a "senior Canadian security service."

Although cellular radio-telephone communications are relatively secure—because the frequency is constantly changing as the user moves from cell to cell—as with any radio communications, it can be intercepted with scanner devices.

Bell's new system is the first in North America to install encryption equipment in its cellular network for use by subscribers.

The system uses a powerful computer program that randomly breaks up the frequency band used for cellular communications into smaller bands and then jumbles up a message by randomly assigning parts of a call to those bands.

The message is then descrambled either at the Bell Cellular switch if it is destined for a non-encrypted user or by another subscriber's equipment if destined for a user who also has the encryption service.

"The most secure form of communication is from one encrypted phone to another," Mr Nathanielsz said.

Users of the service must install an encryption device in their car that is affixed to the dash and plugs into the phone.

The device contains the programs for scrambling and descrambling messages. It is made by Cycomm Corp., a unit of Sonatel Telecommunications Corp. of Vancouver.

Although Bell Cellular is targeting the defence and national security market, the scrambling unit has not yet been certified that it meets the rigid Tempest standards set by the U.S. National Security Agency. Only equipment that meets the Tempest standards set by the top secret communications spy agency can be used by NATO governments to communicate classified military and intelligence information.

Cellular radio operators will be able to offer subscribers greater security when new digital cellular equipment is installed in their networks. It makes it harder to intercept messages because information is transmitted in computerized data bits instead of in analog voice signals.

## FEDERAL REPUBLIC OF GERMANY

### Conference Fails to Define World HDTV Standards

*90WT0098 Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German 29 May 90 p 8*

["Still No Agreement on an HDTV World Standards: Proposed European TV Standards Accepted as Alternative: Digital Transmission Will be Necessary"]

[Text] K.T. Frankfurt, 28 May. Whoever expected the General Meeting of the Comite' Consultatif des Radiocommunications [Consultative Committee on Radiocommunications] (CCIR), meeting in Duesseldorf, to make a final decision on unified world standards for high-definition television (HDTV) was disappointed. The meeting broke up without agreement. The CCIR, a United Nations' organization, holds its general meeting every four years, where it essentially confirms the work results of its many subgroups. This meeting however had to do with the activities of Study Group 11 (Broadcasting/Television), which is under the capable direction of Professor M. I. Krivocheev from Moscow, and which for years has concerned itself, among other things, with future HDTV standards.

There are economic and political reasons that force these activities so much into the public arena. Included too is the standoff between Japan and Europe which can be traced to the rather abrupt efforts made by the Japanese four years ago at the last CCIR general meeting to have their own HDTV standards made binding for the entire world. Europe countered with its Eureka 95 organization, that served well in the following four years and developed its own standards, whose best known features are the 1250 lines and 50 frames per second (see also Blick durch die Wirtschaft, 14 December 1989). The European proposal differs from the Japanese considerably. Japan proposes 1125 lines and 60 frames. The only common feature is the mutually accepted image size of 16 by 9.

In early spring, the impression grew stronger that the Duesseldorf CCIR meeting would—at the very most—only be able to recommend HDTV studio or transmission standards, which would give the program producers some security in their work. No one dared believe that the transmitting norm, which is so decisive for the design of the receiving sets, would be established. Industrial pressures are too great for that, and the United States is still only in the process of establishing its own standards. Moreover, shortly before the Duesseldorf conference the CCIR received the European request to delay the decision on studio standards even further. This about corresponded to Study Group 11's state of knowledge in any case.

Of the 35 basic data (parameters) these standards entail, only 23 were resolved. Essentially nothing was accomplished in Duesseldorf.(tab) Representatives of France,

Canada, and even Japan lauded the good prospects now open to HDTV, especially in applications other than TV, namely for computer displays, in medicine, and in the printing industry.

The European participants appeared satisfied that time had been won, and that their HDTV standards had been accepted as an international alternative along with the Japanese. The Eureka 95 directorate admittedly disapproves of the prospect that the studio standards will remain undecided for another four years until the next CCIR general meeting. More frequent consultations are sought and the European standards are guilelessly offered as the only ones possible.

New tasks lie ahead. The HDTV standards offered to date rely on analog transmission. But the transition to digital has to come—and with it a bundle of problems. One is the norming of coding methods to accommodate broad-band HDTV signals in the satellite and cable transmission channels. In 1992 an international administrative conference will work on the determination of satellite frequencies for all purposes, including also broad-band channels for the direct reception of HDTV programs.

Close cooperation with organizations like the International Electrotechnical Commission (IEC), the International Organization for Standardization (ISO), and other bodies that are also involved in the HDTV transmission in the future ISDN [integrated services digital network] is absolutely essential. A conference set for Tokyo in October could be of considerable help in the final establishment of HDTV studio standards and the probable three transmitting norms for Europe, Japan, and the United States. The CCIR can theoretically only make recommendations; however, they are almost always observed.

## Telephone, Television Links with GDR Outlined

*90WT0096 Frankfurt/Main FRANKFURTER ZEITUNG/BLICK DURCH DIE WIRTSCHAFT in German 15 May 90 p 8*

[Article by Professor Karl Tetzner: "New Telephone Connections in the GDR Will Cost Nearly One-Half Milliard [Billion] DM by 1991"]

[Text] The theme "Telecommunications in the GDR and the FRG" at the last trade conference of Munich Kreis attracted more than a full house. Probably every participant had had problems with the inadequate number of telephone links between the FRG and the GDR since the turn of events in the GDR, and FRG Minister for Post and Telecommunications Dr. Christian Schwarz-Schilling got down to business right away. He focused on the "Postal Union" with nine working groups that was concluded between the two countries on 7 April and guaranteed that the lump sum paid to the GDR by the Federal Postal Administration each year, which has been increased from 100 to 300 million DM, will finally be fully available to the Deutche Post (DP) as investment funds. To date, the 200 million DM flowed in untraceable channels of the GDR state budget.

The first step is to add 200 lines between the two countries by mid-year, yielding 595 lines from the GDR to West Germany, and 830 in the opposite direction. The glass fiber cable that became operational 2 years ago between Uelzen and West Berlin will shortly offer an additional 30,000 telephone call channels, with guaranteed forwarding to East Berlin. The actual bottleneck is the old and overburdened telephone system within the GDR, which gives rise to disastrous waiting times for new connections.

Dietrich Buchheim from the Deutsche Post (GDR) calculates the present amount at 1.8 million main subscribers, of which 1.2 million are private residences. In 1989, this equated to a statistical telephone density of 15.72 per 100 homes, which puts the GDR at 14th place in Europe and in good company with Poles and Hungarians. There are considerable differences within the GDR: East Berlin is a front-runner with 43.5 connections per 100 homes, and Dresden brings up the rear. Buchheim calculated the number of unfilled telephone connection orders at 1.2 million.

In addition, telephone connections are of considerable importance for the large number of budding small businesses. A functioning telefax business is currently out of the question, for it requires a perfect telephone net. The same goes for data transmission. According to Dr. Koehler (DP), there are 5,000 data connections in the GDR today and 13,000 orders for one; on an international scale, this is 40th place.

As of 1991, however, everything is supposed to improve; 50,000 connections are planned for the year 2000. By 1991, DP intends to invest some 500 million DM in this area. In the short term, relief will be provided by the digital directional radio links Rostock-Berlin-Erfurt, already under construction and wired with 140 Megabit systems, and a planned overlay net.

The West German C mobile radio net is being installed along the major road connections, with Berlin at the center, as well as in the cities of East Berlin, Magdeburg, Schwerin, Halle, Leipzig, Erfurt, Gera, Chemnitz, Dresden, and Dessau. Bringing the GDR to the same level of telecommunications as the FRG in around 5 years might require 30 milliard [billion] DM. Dr. Bernhard Zurhorst of the DBP Postbank, Bonn, considered this all as financially feasible if strict business principles are adhered to—the buildup of the West German telecommunications service after the war proved this.

After all, in 1970 the FRG, too, had only 7.6 million main telephone subscribers, which at that time, taking into account the different populations, corresponded exactly to the 1.8 million in the GDR today. It will be important to adhere to the "magic triangle," whose three points are investment, financing, and rates/prices and whose center is professional management. There should be adequate credit as soon as its servicing is guaranteed,

which should be easy with a solid rate policy in, for example, telephone service, as shown by the West German example.

Werner Voigtlender of DP described its present situation. Previously DP had to funnel between 700 and 900 million DM a year to the GDR Government, and the rates were extremely depressed. Now the DP has been transformed into a "separate fund" analogous to the Federal Postal Administration in the FRG; the previous burdens were removed. This creates a good initial balance sheet and an even better starting position. Planning capacity is now required, which causes a major bottleneck: There are only around 500 planning engineers with inadequate technical equipment available, when 2,000 engineers with the most advanced tools are required. East Berlin looks toward Bonn, but the Federal Postal Administration is itself suffering from a major lack of engineers. However, where possible the reorganization in the East German combines is releasing some qualified personnel.

The lecturers at the conference were unanimous in calling for the removal of the Cocom conditions. It would be nonsensical not to install the most modern telecommunications systems in the GDR as is customary in the West, particularly when in some fields the GDR has a unique opportunity to begin with truly brand-new equipment. The same cannot be said about the FRG, for example, where some rather old telecommunications equipment must be kept in operation because of its long service life.

Albrecht Ziemer of the television station Zweite Deutches Fernsehen (ZDF) in Mainz and Guenter Schulze of the East Berlin Post and Telecommunications Ministry handled the technical television problems for both countries. It has become known, meanwhile, that 54 percent of all households in the GDR can receive good quality West German television signals, and another 30 percent receive a poorer picture at a higher cost. the remainder, mostly in the Dresden Bezirk, is cut off.

The best way to provide all of the GDR with perfect reception of western programs would be to transmit them via satellite. This sounds odd, at first, but one must be aware that in the GDR almost half the subscribers depend on approximately 40,000 community antenna arrays of extremely different sizes, which could easily be equipped with satellite receiver systems. These community antenna arrays were until now handled by housing construction organizations and private agencies. From now on the DP wants to take over. It is planning 2.5 million additional connections to these central systems and has earmarked 1.5 milliard [billion] DM for this. As a priority, Dresden Bezirk is to receive several television rebroadcasting stations to receive western programs.

Naturally, Ziemer dampened expectations: If the GDR were officially to receive the Zweite Program (Second Program), the ZDF alone would have to spend 57 million DM more than before for the sending rights. Conversely, if the two GDR television programs could be received in the FRG, equally high expenditures would be required. Moreover, as there would be no terrestrial frequencies for these two programs, here, too, satellite transmission would be the only answer. A beginning has been made, as is known. In the community program 3SAT (via the satellites Kopernicus and Astra), brief contributions from Deutche Fernseh-Funk (East German Radio and Television) exist alongside those from West Germany, Switzerland, and Austria.

## FRANCE

### Progress of Cable TV Surveyed

*90WT0093A Paris LE MONDE in French 2 Jun 90 p 16*

[Article by Michel Colonna d'Istria: "Cable, From Plan to Market: Debates on Rates, Channels, and Standards"; first paragraph is LE MONDE introduction]

[Text] Lyon—Cable TV is coming out of the Plan, entering the market step by step; and the commercial challenge, linked to the channels, is relegating political and technical quarrels to the background, as was apparent in the 3 days of debates at the Mediaville Congress.

The change in direction initiated a few months ago by France Telecom and implemented through its entry into the capital of cable operators has contributed greatly to calming the quarrels about cable. Because this rapprochement signs the "second death warrant" for the Cable Plan. Buried for the first time in 1986 by PTT Minister Gerard Longuet when he restricted public investment and authorized construction of private networks, this Cable Plan drawn up in 1982 nevertheless continued to afford France a curious privilege: That of being the only developed country where network owners and operators were separate, or even, antagonistic, and spent more time bickering than seeking subscribers. That has ended now—at least in principle. Because now owners and management must put the benefits of their new solidarity to the test in the real world. With the Plan pushed aside, the market remains to be conquered.

Clearly, cable is beginning to emerge from obscurity. More than 2.2 million households are now capable of receiving more than the six conventional TV channels; and 347,000 were in fact receiving them in May, having actually subscribed. That is twice as many as last year, enough to give rise to talk of a "take-off" and a "ground swell" at Mediaville. However, the examples abroad—6.8 million subscribers for 14.2 million households connected to cable in Germany—are there to temper optimism.

Real success would require further acceleration of the subscription pace. But, strategies for achieving this diverge. For example, is it necessary to reduce prices?

Local elected officials consistently support this through their association of cabled cities (AVICA). They can congratulate themselves for the increased numbers of low-price subscriptions (at Fr 20 to 50) for minimum service in apartment buildings. The Caisse de Depots is also offering a subscription for less than Fr 100. But the other two large operators, Generale and Lyonnaise des Eaux, prefer to rely on increasing offerings rather than lowering prices to attract customers.

"Offerings" is another word for channels. Everyone recognizes these as the "driving force" behind cable. And the feeling is beginning to take hold that they will be the stakes in the coming battle, especially the thematic and profitable channels made possible by new technical systems.

**Conflicts About Channels**

Is it necessary to increase the number of such channels to enrich the selection for viewers and to respond to all their expectations, as all the operators are doing now? "It is better to focus the maximum means upon the minimum number of channels," responds Andre Rousselet, who is not above giving the cable operators a few lessons in marketing from the platform of his 3 million subscribers. Rather than sit back and watch the dispersion of channel budgets—and the emergence of competition between the channels under his control—the head of Canal Plus would prefer to enlist everyone in a crusade, the one he is planning to launch to promote D2 MAC Paquet, the new TV standard, of which cable and satellite will be the complementary vectors, and which will be the precursor of tomorrow's high-definition television (HDTV).

PTT Minister Paul Quiles appeared to be receptived to this new "marriage" proposal. Referring to HDTV stakes, he believes that bringing everyone together, broadcasters, equipment manufacturers or lessors, cable operators, and the managements "should provide the clear and precise information and advice without which the consumer runs the risk of remaining in a state of anticipation." In addition to the general public, Mr Quiles also wants to convert companies to the credo of European HDTV: This will be the role of a new France Telecom subsidiary, VTCOM SA, which will combine TV-related departments.

In sum, Mr Quiles is insisting on the coherence of the French system: French cable networks will soon be provided with 30 channels, including at least four under D2 MAC standards beginning in 1991. And, with next July's launch of the TDF2 satellite, the minister is pleased to announce: "France will be the first country capable of actually broadcasting large-screen TV images in the new 16:9 format."

### Digital Phone Lines Contract With USSR

*90WT0105A Paris LIBERATION in French 20 Jun 90 p 13*

[Text] The French group Alcatel has just landed a $1 billion contract to supply the Soviet Union with 250,000 digital telephone lines. The contract was signed in Moscow yesterday by the group's Belgian subsidiary, Alcatel Bell, which has been in contact with the USSR for several years. In addition to its direct delivery of those lines over the next two years, Alcatel Bell is going to establish two mixed-capital companies that will soon begin production in the USSR of lines and telephone exchanges based on French "Digital System 12" technology.

The first of those joint ventures will be located in Leningrad. Owned 60 percent by the Soviet Krasnaya Zarya company and 40 percent by Alcatel Bell, it should be producing some 1.5 million lines per year after five years.

A second mixed-capital company will then be set up to produce chips that will be used in System 12's switching equipment. However, this part of the agreement will have to be submitted to COCOM [Coordinating Committee on Export Controls], the Western organization in charge of supervising the sale of Western technology to Eastern countries.

Alcatel Bell calculates that its direct deliveries to the Soviet Union and the expected dividends from the two mixed-capital companies should total $2.8 billion over 20 years. It now remains to solve the difficult problem of putting together the financing. According to Alcatel Bell, that problem should be solved "within the next few months." Part of the contract will be financed in the normal way by government lines of credit opened for the USSR by Belgium.

## ITALY

### Expansion of Mobile Phone Network Under Way

*90WT0094A Rome L'ESPRESSO in Italian 27 May 90 pp 163-164*

[Article by Stefano Livadiotti: "The Telephone Is Laughing"—first paragraph is L'ESPRESSO introduction]

[Text] Telecommunications—The new portable telephones are selling like hotcakes. The market is very attractive and S.I.P. [Italian State-owned Telephone Company] will have to contend with competitors like FIAT and Olivetti.

The real problem for S.I.P. is keeping up with the demand. The new cordless, portable cellular telephones, in fact, are literally selling like hotcakes. In one month alone, the company headed by managing director Paolo Benzoni, sold 11,000 of them. Entertainers, businessmen, managers and politicians have lined up in

order to make sure they obtain the sophisticated telephones, produced by American Motorola and Finnish Nokia, that are just slightly larger than a normal pack of cigarettes. President of the Republic Francesco Cossiga and Prime Minister Giulio Andreotti were among the first to try them out, along with a host of ministers, including Paolo Cirino Pomicino and Gianno De Michelis. But the list is growing quickly.

The public phone company has thus begun to reap the benefits (the "personal" phones cost between 2.8 and 4 million lire) of the bet it wagered with the introduction of the new cellular network at 900 megahertz, which joins the 450 megahertz system which is practically saturated. The web of new radio-base stations, which allows mobile telephones to connect to the regular network (the one that goes to all houses) is already active in 12 cities where the World Cup will be played, and it will be extended to the entire country before the end of 1990. An investment of about 2,000 billion will be necessary in order to complete it. But according to calculations by S.I.P. technicians, the return on investment is guaranteed. Introduced by ITALTEL and TELETTRA using Ericcson's technology (the world leader in the sector), the new market will in fact open the way for a mass use of mobile telephones, shortening the waiting time and drastically lowering the cost for users.

The "traveling" telephones that at the end of 1989 totaled 66,000, should grow to about 185,000 by the end of this year, then rise to 335,000 in 1991 and exceed half a million in 1992. Actually, according to reliable estimates, by the end of the century Italians who leave home with the personal telephone in their "briefcase," or who have a car phone, will number approximately 1.5 million. A comparison with other major European countries confirms that these are not unrealistic estimates. Already at the end of last year, subscribers to mobile phone service numbered over 700,000 in Great Britain and almost 300,000 in Sweden.

Italy, therefore, is simply beginning to make up for lost time accumulated over the past few years. A lucrative business is opening up for those who manufacture the phones. Considering that the average price is 2.5 million lire, the turnover for the next 10 years could reach a total of 3,700 billion.

So far the mobile telephone market, although not subjected to legal restrictions, has been monopolized by S.I.P. The network at 450 megahertz, in fact, having different standards from those in other countries, cut off the principle world producers who have no interest in deliberately making equipment for the restricted Italian circuit (according to the experts to have a margin of sufficient profits it is necessary to sell at least 500,000 telephones per year). There were few companies to divvy up the pie, such as ITALTEL, TELETTRA and OTE (whose production was acquired in bulk by S.I.P., which resold it to subscribers).

But now, with the new network that adopts the same standards used in the U.S., Great Britain and Japan, the competition is bound to become fierce. Quick to jump on the bandwagon were all the mobile telephone giants, beginning with the three world leaders, American Motorola, Finnish Nokia (both suppliers of S.I.P.) and Japanese NEC. While the Dutch Phillips and the Japanese trio of Mitsubishi, Kenwood and Panasonic wait for approval from the Ministry of Posts, Olivetti, which just recently launched a complete series of telephones produced by British Teknofon, has taken up the challenge.

Terminals are not the only thing in the plans of the Ivrea group. More profits are to be found in the actual running of the network than in the sale of telephones. The figures speak clearly. Every user pays, between fees and charges, an average bill of 1.4 million lire per year. Estimates of some experts, unconfirmed by S.I.P., indicate about a 25 percent net profit for the manager. So far, Italian law has ensured the management monopoly for the telephone company which belongs to IRI [Institute for the Reconstruction of Industry]. But things are about to change. Italy is about to start down the road already opened in 1985 by Great Britain, and then followed by France and Germany, which provides for the presence, next to the public manager, of one or more private companies, authorized by the government to set up their own networks and to enlist subscribers.

For some time, the EC Commission has also been pushing in this direction. One of its directives was expected during the month of June, but for now it's been delayed. The date of April 1991 was written in the draft measure as the deadline for implementation. So, maneuvering has begun. On the one hand, Olivetti has started a polo match with Televerket, the Swedish counterpart to S.I.P., and with American Bell Atlantic. On the other hand, FIAT has contracted an alliance with FININVEST of Silvio Berlusconi and with Recall, which in Great Britain is the second manager next to British Telerom.

But, with the two candidates poised at the starting gate, the community initiative is now on hold. The commission, in fact, has decided to take its time. [This is] in part because not everyone agrees on the fact that the directive, which deals with the liberalization of services, would also apply to mobile phones. In addition, there's the imminent decision by the Court of the Hague on a precedent directive of the Commission concerning car phone equipment. According to the countries that appealed, including Italy, the measure would fall under the jurisdiction of the Council of Ministers. And the spokesman for the Community says that the judges will probably decide to override the Commission, which therefore is being very careful not to again intervene on the matter before knowing the decision.

Oscar Mammi could be the one to break the impasse. The Republican minister of posts, in fact, is convinced that Italy must play ahead of the game with respect to Community decisions by authorizing the entry into the sector of private groups as soon as possible.

According to the plan that Mammi's experts have in mind, the government should limit itself to fixing minimum tariffs and leave to S.I.P. and its competitors the task of confronting the market, each one offering its own service.

But there are more problems to be addressed. In the first place, it will be necessary to establish how much the private companies will have to pay to S.I.P. in order to be able to connect up to the basic network, which the phone company of the IRI group will continue to monopolize. But it will especially be necessary to evaluate how many groups should be placed side by side with S.I.P. Officials at the ministry have already had an idea. In Italy, they maintain, there is room for no more than two private networks. Just the number that are already waiting.

## NORWAY

### Privatization Plans for TBK Raise Policy Questions

*90WT0097A Oslo AFTENPOSTEN in Norwegian 6 Jun 90 p 2*

[Article by Kjell Holler, general manager of the Telecommunications Agency: "Strong Telecommunications Network Needed"]

[Text] The government's plans to privatize TBK, which is now owned by the Telecommunications Agency, raise several questions about telecommunications policy in the future.

The Norwegian telecommunications sector has been liberalized substantially during the 1980's. This has cleared the way for competition in a number of fields, and the Storting has established a clear division of roles between the Telecommunications Agency, TBK, and the National Telecommunications Administration.

#### Stabilization

After many problems in the initial phase, TBK's situation has been stabilized and the prospects for the future seem much brighter than they have been. TBK has been strengthened by an arduous reorganization.

At the same time the establishment of TBK has contributed to a big reduction in the price of telecommunications and automated equipment and services in Norway, a development that "saved" the Norwegian private sector an estimated 300 million kroner in telecommunications investments last year. The firm's market share has been a stable 50-60 percent of a previously monopolized field since the second half of 1988.

#### Norwegian-Owned

There are two things I would like to mention when the question of privatization is brought up. One is that today TBK is the only big Norwegian-owned actor in the telecommunications and automated equipment market. In a branch that is increasingly characterized by purchases from large foreign ownership concentrations, it must be a matter of national interest to have a Norwegian-dominated actor. We will be assured of this if the Telecommunications Agency maintains a decisive influence over TBK.

#### Stock Companies

The other point involves the use of the stock company form in telecommunications policy. The Storting report on the so-called value- enhancing services says that the Telecommunications Agency must set up stock companies in some areas if it wants to become involved.

Thus the Telecommunications Agency must organize its presentation of a number of telecommunications services to the private business sector through the establishment of stock companies. Do we now run the risk that they too will be privatized if they start to do well? How will the uncertainty created in this way affect the Telecommunications Agency's involvement and the possibilities for the long-term planning and development of advanced telecommunications services for the private sector? Does this mean we will have an ownership strategy characterized by arbitrary decisions instead of a unified overall telecommunications policy where the use of stock companies is viewed as an appropriate device for the Telecommunications Agency?

#### Turbulent

The years leading up to the end of the century will be very turbulent in the field of telecommunications. There will be a stream of new services and telecommunications products. The Norwegian business sector has a right to be offered the best assortment. The distinction between network services and terminal equipment will no longer be as clear as it has been. The Telecommunications Agency's monopoly of the telecommunications network is being undermined by technological developments and is on the point of disappearing.

I therefore think the Norwegian business sector will be well-served by an effective cooperation between the Telecommunications Agency and TBK with respect to the ability to offer total telecommunications solutions. A dissolution of the proprietary relationship might well produce the opposite effect.

#### Sweden

In this context it may also be of interest to look across the mountains and note that through its investment company, Teleinvest AB, the Swedish Telecommunications Administration has set up a large number of highly specialized stock companies that are wholly or partly state-owned.

These companies are set up on a strictly businesslike basis. In this way a flexible group of companies has been built up that can supply the Swedish business sector with

the necessary services when the need arises. This has undoubtedly been a vital resource, especially for Swedish exports, and I would like to stress it as a model for us to copy here.

**Rapid Development**

It is no secret that the Telecommunications Agency wants to serve the Norwegian business sector with a similar group of companies. In the next few years the telecommunications market in general and the market for value-enhancing services in particular will undergo rapid development. In this period it will necessarily be in the interest of Norwegian firms for the Telecommunications Agency to have the opportunity to present an assortment of services and products that is as complete as possible through a variety of means, including cooperation with TBK and the establishment of stock companies in different areas.

**Hydro Model**

If the Storting decides to sell some of the Telecommunications Agency's stock in TBK, I think this should be based on the Norsk Hydro model so that the Telecommunications Agency owns at least 51 percent of the stock. This would go part of the way toward dealing with the concerns I have mentioned above.

## Mobile Phone Market Expansion Seen Disappointing

*90WT0089A Oslo AFTENPOSTEN in Norwegian 31 May 90 p 21*

[Article by Espen Brynsrud: "Mobile Telephones Are Out"—first paragraph is AFTENPOSTEN introduction]

[Text] Price wars, poor sales, and low profits characterize the mobile telephone market. The business hit a wall last year, after two record years. Sales fell by 44 percent.

Sales of mobile telephones peaked at 45,000 new subscribers in 1988, according to ELEKTRONIKKBRANSJEN magazine. Sales have plummeted since that time. The bad times are expected to continue for the next few years in expectation of the new joint European digital system, GSM, which will be implemented in 1992-93.

**Price Slashing**

"The downturn would have happened earlier if a price war hadn't kept sales up. Motorola was the first to slash its prices, followed by the other major suppliers.

"This led to a significant reduction in the profitability of the business," says Erik Andersen in ELEKTRONIKKBRANSJEN. He believes that the number of suppliers in the Norwegian market will diminish in the future. Mobira, Ericsson, Philips, Motorola, and TBK are the biggest suppliers, and together they account for roughly 70 percent of the market. Each company accounts for 10-20 percent. Many of the smaller suppliers are in trouble, not least because of increased demands for service. The authorities have also established standards for the quality of these products.

"As is the case with respect to most new products which are introduced, prices fall after a while. The previous high price level will not return," according to Sven Eliassen, director of the Alliance of Mobile Telephone and Radio Communications Suppliers (LMR).

"That's why we aren't afraid of the manufacturers from the Far East.

"Our production methods are equally efficient in Europe and the United States.

"In addition, we have the longest tradition of mobile telephones here in Scandinavia," he says.

**European Record**

After a multi-year boom in mobile telephone sales, at the start of July of last year we had 39.9 subscribers per 1,000 inhabitants. This is the greatest density in Europe, almost twice as high as Denmark's. The real upturn in sales of so-called NMT equipment first began during the boom period of the mid-eighties. This enormous upswing exceeded all expectations, and the telecommunications system had major problems in dealing with the huge mobile network traffic. At one point, a ban was placed on the issuance of NMT 450 licenses in Oslo and Akershus.

Nordic Mobile Telephone System (NMT) has two brands on the market: NMT 450, which was the original version which covered the entire country, and the newer NMT 900, which covers the major cities and state highways. It was expected that sales of the older system would decrease, and they did indeed experience a 60-percent reduction in 1989. However, the fact that the fall in sales of the new system would be so drastic came as a surprise. Not even the small, light mobile telephones of the NMT 900 system managed to keep sales of NMT equipment up.

Chief Engineer Kare Gustad of the Telecommunications Directorate also sees positive aspects in the mobile telephone market.

"Even after the significant downturn last year, the growth in new subscribers was still over 20,000. We continue to have faith in the NMT 900 system, especially as the pressure on prices continues," he said.

# SWEDEN

## Ericsson Switching Systems to FRG, Taiwan

*90WT0095A Stockholm DAGENS NYHETER in Swedish 12 May 90 p 18*

[Article by Thomas Lerner: "Ericsson Landed Two Large Orders"—first paragraph is DAGENS NYHETER introduction]

[Text] It was announced last Friday that Ericsson will be developing the second mobile telephone network in West

Germany. At the same time, the Swedish tele-giant also received a large order from Taiwan.

So Ericsson's successes continue. The same week that the company showed record profits for the first three months of the year, two additional important orders were landed.

Mannesmann Mobilfunk reported last Friday that the West German consortium is ordering the initial equipment for its digital mobile telephone network from Ericsson and Siemens. The order totals DM350 million or 1.3 billion Swedish kronor.

Ericsson and Siemens do not want to disclose any details about how the order is divided between the two companies. Still it is felt that the affair is very important for the Swedish tele-giant.

"It is a breakthrough in a market that has been closed to us for over a hundred years. Now we are accepted in West Germany, and this has great significance even in other areas," comments Lars Ramqvist, who is head of Ericsson.

**Growing Market**

The agreement with Mannesmann means that Ericsson and Siemens will deliver receiving and transmitting equipment to the second of two mobile telephone networks in West Germany.

It is estimated that the German market for mobile telephones will grow explosively in the years to come.

Today, Ericsson controls 40 percent of the world market in mobile telephone systems. Development within this area is rapid. During the 1990's, for instance, a common mobile telephone network will be developed in Europe. So far 18 countries have signed an agreement about developing their own national systems within this common network.

By virtue of the order from West Germany, Ericsson has contracts for delivery of system solutions and equipment to nine of these countries.

When rumors were rife that Ericsson was in the picture as far as the order from Mannesmann was concerned, the quoted price of its shares rose dramatically, especially after speculation that it would be a question of a transaction totaling eight billion kronor.

**Taiwan Order**

"The part of the agreement that is now settled runs through 1992. When it is extended, it probably will be a question of the sums mentioned in the mass media," says Hakan Jansson, managing director of Ericsson's mobile telephone division, and the one responsible for the contacts with Mannesmann.

The Taiwan order means that Ericsson extends the mobile telephone network from 40,000 to 100,000 subscribers for the price of 420 million kronor.

Note: Last Friday, the price for an Ericsson B-share increased by 27 kronor to 1,080 kronor.

## TURKEY

### South Africa Trade Agreement With Turkey To Be Extended

*34000799a Johannesburg BUSINESS DAY in English 12 Jun 90 p 3*

[Article by Edyth Bulbring]

[Text] SA will extend its preferential trade arrangement with Turkey from 1 August. But the agreement was due to be changed from next February, Trade and Industries Department Foreign Trade Relations director Hennie Geldenhuys said last night.

The existing arrangement with Turkey allows local importers to apply for permits to import specified goods at a ceiling duty of 3 percent and a rebate of the full surcharge.

The changes to the arrangement would be negotiated with the Turkish government this year, Geldenhuys said.

This follows a mission to SA from the Istanbul Chamber of Commerce (ICC) in December last year.

ICC president Yalim Erez said at the time Turkey wanted to increase exports to SA to improve its unequal trade balance with the country.

The mission presented a list of additional commodities it hoped to have included in the arrangement to Trade and Industries director general Stef Naude.

Geldenhuys said the ICC recommendations regarding existing quotas and goods had been referred to the Board of Trade and Industry which had suggested counter proposals which would be discussed with the Turkish government.

Changes to the existing arrangement would probably include the addition of new products not previously accommodated on the quota list, and the removal of some quota items, Geldenhuys said.

SA imports Turkish goods to the total value of R85m a year, Geldenhuys said.

A notice in Friday's Government Gazette invited a new round of applications for rebate permits which would be valid for six months from 1 August.