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International Telephone Subscriber Dialling in Switzerland

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Summary. *Swiss PTT's aim in introducing International Subscriber Dialling is to improve the quality of service to customers and at the same time effectively meet staff recruitment difficulties. All telephone exchanges are gradually being equipped with this facility, so that by the end of this decade customers will be able to dial 95% of their international calls direct. Expectations have been confirmed by first experience gained in the Basle and Chur regions.*

History and Development

As early as 1955, special codes enabling subscribers to dial calls across the frontier were introduced at Basle. This service met with wide approval and was therefore extended to the Geneva, Lugano and St. Gall frontier regions. Actual International Subscriber Dialling was opened 9 years later, on the occasion of the Swiss National Exhibition held at Lausanne in 1964. However, before this facility could be extended to the country as a whole, the following technical provisions had to be made:

- Implementation of period pulse metering in the national telephone service;
- Erection of 9 international automatic exchanges;
- Installation of special pulse generators for call metering in the 52 main group centres;
- Adaptation of register storage capacity in all exchanges to hold the additional digits of international subscribers' numbers.

By the end of 1972, 523 (54%) of a total of 970 exchanges were equipped for ISD, and 1.7 (75.5%) of the 2.17 million subscribers had access to this facility. The percentages show that large centres were given priority in the introduction of the new service. *Figure 1* illustrates the development of ISD availability and use.

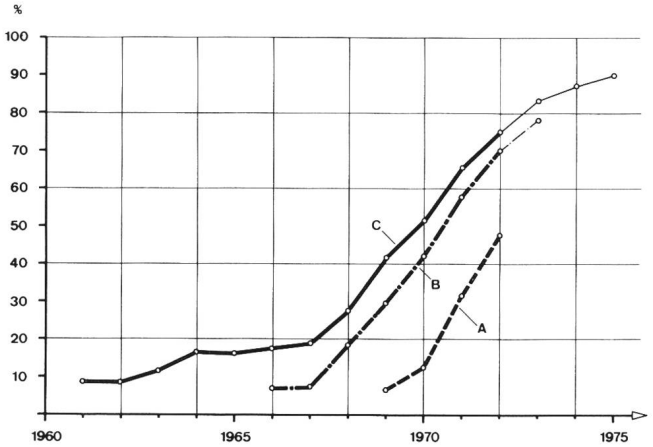

Fig. 1 ISD development in Switzerland

A Percentage of local exchanges with ISD (54%, end of 1972)
B Percentage of telephone customers with ISD (75.5%, end of 1972)
C Percentage of ISD in relation to total international call minutes

Table I. International Subscriber Dialling in % of total international calls in the 52 Swiss telephone regions in November/December 1972

Telephone region	ISD in %	Telephone region	ISD in %
01 Zurich	81.9	054 Frauenfeld	15.5
021 Lausanne	82.9	055 Rapperswil	69.5
022 Geneva	82.6	056 Baden	84.7
024 Yverdon	—	057 Wohlen	—
025 Aigle	—	058 Glarus	—
026 Martigny	76.6	061 Basle	89.4
027 Sion	76.0	062 Olten	80.0
028 Brig	80.7	063 Langenthal	—
029 Bulle	—	064 Aarau	83.7
030 Zweisimmen	88.7	065 Solothurn	—
031 Berne	86.3	066 Delémont	58.5
032 Biel	78.0	071 St. Gall	80.6
033 Thun	77.2	072 Weinfelden	28.4
034 Burgdorf	58.3	073 Wil	77.5
035 Langnau	—	074 Wattwil	79.9
036 Interlaken	73.9	075 Liechtenstein (Principality of)	91.0
037 Fribourg	80.1		
038 Neuchâtel	74.4	081 Chur	71.7
039 La Chaux-de-Fonds	58.7	082 St. Moritz	87.7
041 Lucerne	86.8	083 Davos	94.6
042 Zug	88.1	084 Schuls	90.6
043 Schwyz	—	085 Sargans	91.6
044 Altdorf	—	086 Ilanz	—
045 Sursee	—	091 Lugano	88.5
052 Winterthur	83.2	092 Bellinzona	63.2
053 Schaffhausen	91.0	093 Locarno	88.9
		094 Faido	24.3

On an average ISD calls at present amount to 80% of total international calls from Switzerland. *Table I* gives the situation in the 52 regions, which of course are not yet all fully equipped.

Towards the end of this decade ISD will be available at all Swiss exchanges, and it is estimated that about 95% of the international calls will then be dialled direct by the customers. If the possibility of opening ISD with additional countries is taken into consideration, the proportion may even be given as 98%.

By the end of 1972, ISD from Switzerland was available to the following countries:

Andorra	Monaco
Austria	Netherlands
Belgium	Norway
Canada	Portugal
Czechoslovakia	San Marino
Denmark	Spain
France	Sweden
German Democratic Republic	United Kingdom
German Federal Republic	Vatican State
Greece	
Hungary	Israel
Italy	Japan
Luxembourg	USA

Effects on the Telephone Service

As expected, ISD has led to a reduction in the number of calls requiring special handling, such as collect calls and, above all, personal calls (see *figure 2*). The demand for both these categories will continue to decline, so that they can eventually be discontinued.

ISD was aimed at improving the international telephone service without further increases in the number of operators. As illustrated in *figure 3,* this has been achieved. Instead of the 4700 operators that would be necessary to handle the present volume of traffic manually, only 1400 are now employed. In view of the tense labour market and the resulting staff recruitment difficulties, this is indeed a welcome relief.

The telephone customer making use of ISD sometimes faces the same difficulties as the operator, when he has to dial a call 3 or 4 times before being successful. Unfortunately the international service is still hampered by congestion. A number of bottlenecks are found in our own plant, and it will take some time to remove them. In spite of this temporary inconvenience, ISD offers the customer an important advantage by enabling him to choose the hour of his call more freely.

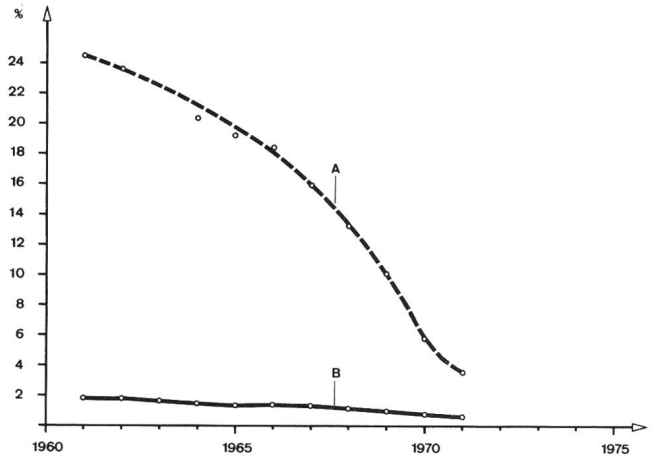

Fig. 2
Effect of ISD on personal (preavis) and collect calls

A Percentage of personal calls in relation to total international calls
B Percentage of collect calls in relation to total international calls

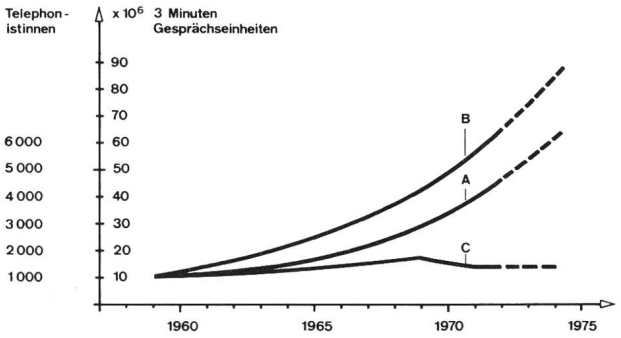

Fig. 3
Effect of ISD on operator strength

a Operators
b 3-minute calls
A Number of switchboard operators required for an entirely manual international service
B International outgoing 3-minute calls
C Actual operator strength

The introduction of ISD has met all our expectations by leading to genuine rationalization and a better service to the customer. Manual calls will now remain more or less constant in number, but require more skill on the part of the operator. For this reason the interesting occupation of telephonist at an international manual exchange will by no means become extinct in the future.

Initial Experience in the Basle Network Group

This group at present comprises about 180,000 main connections, 75% of which are concentrated in the Basle local network. The development of the region's international calls is therefore determined almost exclusively by customers in the city and its suburbs.

At Basle the demand for ISD was expected to be particularly heavy because of local industry's international relations and the city's ideal situation at the frontier to France and Germany, Switzerland's main trading partners.

Figure 4 illustrates how the group's international calls have, since 1968, shifted from manual to ISD. Here it must be considered that both the proportion of ISD calls and the total number of international calls have substantially increased. Moreover, the graph does not include the so-called frontier service. While, for instance, ISD calls rose to 88.3% in September/October 1972, a daily average of 700 incoming calls from France were handled manually over the same period.

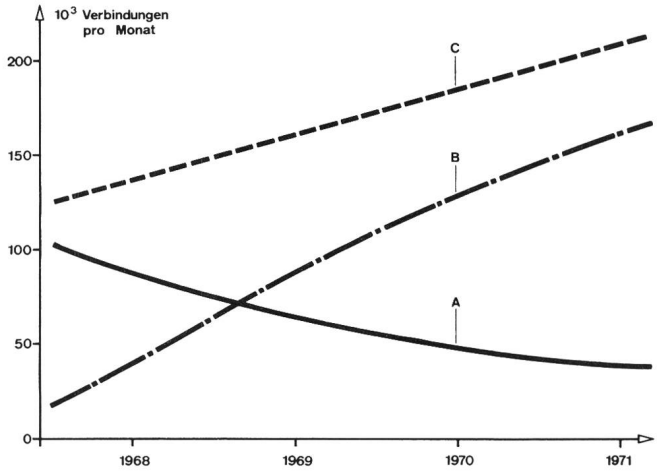

Fig. 4
Development of international calls in the Basle network group (frontier calls excluded)

a Calls per month (in thousands)
A Manual calls
B ISD calls
C Total international calls

For this reason, staff economies at the switchboard and the charging office have not kept pace with automation. All the same, it has been possible to reduce the number of operators at the international manual exchange from 115 (nominal strength 135) in 1968 to the present 85, which is also the nominal strength. At the charging office a staff of only 5, as against 10 in 1968, is now employed.

Finally, it is interesting to note that the introduction of self-dialling to the USA (10 November 1970), Canada (1 July 1971) and Japan (1 October 1971) has scarcely led to an increase in ISD calls. This shows that on the intercontinental service the operator, who is both experienced and fluent in foreign languages, still renders valuable assistance which cannot be provided by an automatic system.

ISD in the Davos Network Group

The considerable fluctuations in the number of international calls *(figure 5)* are typical not only of Davos, but of most other health and holiday resorts as well. In these areas ISD has helped to solve the serious staffing problems that faced the manual exchanges in previous years.

At Davos ISD caught on very well indeed, the proportion of 94.1% in July/August 1972 exceeding that of all other network groups.

During the seasonal months of January and February 1972, 366,000 international call minutes were recorded in this area, which then comprised about 6,500 main connections. Per subscriber and month, chargeable minutes amounted to 28.2, as against the Swiss average of 7.8 in the same period. Between seasons, this figure is of course much lower, usually around 6.4.

The following list of Davos hotel bookings shows that international call minutes fluctuate in proportion to the number of foreign tourists staying in the area.

Month	Total night bookings	by foreign guests
August 1971	97,993	56,567
October 1971	20,573	4,442
November 1971	5,829	1,971
December 1971	99,331	68,140
January 1972	144,214	98,822
March 1972	175,722	142,122
April 1972	46,620	33,289

Most of these tourists come from countries with which ISD service has already been opened. This explains the high percentage of self-dialled calls mentioned above.

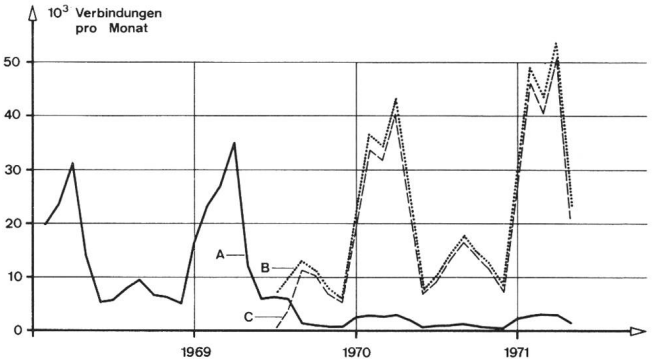

Fig. 5
Development of international calls in the Davos network group

a Calls per month (in thousands)
A Manual calls
B Total international calls
C ISD calls