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# ***JPRS Report***

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# **Science & Technology**

***Japan***

COMMUNICATIONS INDUSTRY  
PLANT AND EQUIPMENT INVESTMENT

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17 JULY 1990

**SCIENCE & TECHNOLOGY**  
**JAPAN**  
**COMMUNICATIONS INDUSTRY**  
**PLANT AND EQUIPMENT INVESTMENT**

906C3839 Tokyo TSUSHIN SANGYO SETSUBI TOSHI NADO JITTAI CHOSA HOKOKU in Japanese Dec 89 pp 1-30, appendices

[Report on the research conducted in Sep 89 and published in Dec 89 by the Telecommunications Policy Bureau, Ministry of Posts and Telecommunications]

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[Text] I. Research Procedures

1. Objective of Research

This research is the first to be conducted by the Telecommunications Policy Bureau of the Ministry of Posts and Telecommunications (MPT), as an approved statistical research project to determine the status of plant and equipment investments by the telecommunications industry overseen by the MPT.

2. Subjects and Method of Research

The research was conducted by means of questionnaires (forwarded by mail and completed by the carriers) sent to all telecommunications carriers (Type I and Type II carriers) and broadcast businesses (including CATV carriers but excluding noncommercial CATV carriers) overseen by the MPT.

3. Research Items

The main research items are as follows:

- (1) Investments in plant and equipment (actual for FY 1988, planned for FY 1989, planned for FY 1990).
- (2) Status of long-term capital investment and procurement (actual for FY 1988, planned for FY 1989, planned for FY 1990).
- (3) Management situation, etc.

#### 4. Research Date

1 September 1989.

#### 5. Number of Responding Companies

Telecommunications businesses	399
Type I carriers	52 (including NTT, KDD)
Special type II carriers	22
General type II carriers	325
Broadcast businesses	228
Commercial broadcast carriers	134 (not including NHK)
CATV carriers	94

### II. General

#### 1. Plant and Equipment Investment Plans for FY 1989

The total amount of plant and equipment investments (based on works to be done) planned for FY 1989 for the whole of the telecommunications business (not including NTT and KDD) and broadcast business (not including NHK) was ¥540.7 billion, showing a high growth of 19.5 percent from FY 1988.

(Reference: 15 percent growth according to research by MITI in September, 17 percent growth according to research by Economic Planning Agency in September)

The intention to invest is also high among carriers, with 30 percent of them planning additional investments.

(1) The total investment value of the telecommunications business was ¥388.2 billion, a growth of 22.3 percent from FY 1988.

a. With type I telecommunications carriers (not including NTT and KDD), the total value was ¥232.9 billion, a 21.3 percent growth. (NTT: ¥1.7 trillion, a decrease of 0.7 percent. KDD: ¥64.2 billion, a growth of 12.8 percent.)

b. With type II telecommunications carriers (special type II and general type II), the total value was ¥155.3 billion, a 24.0 percent growth.

(2) The total value of the broadcast business was ¥152.6 billion, a growth of 12.9 percent from FY 1988.

a. With broadcast carriers (not including NHK), the total value was ¥109.6 billion, a 6.3 percent growth. (NHK: Construction expenses ¥56.1 billion, a 27.5 percent growth.)

b. With CATV carriers, the total value was ¥43.0 billion, a large 34.4 percent growth.

(3) Approximately 30 percent of carriers were planning to increase their investments, while approximately 40 percent of CATV carriers were planning to.

## 2. Plant and Equipment Investment Plans Broken Down by Purpose in FY 1989

The main purposes of plant and equipment investments are the expansion of service provision capabilities and enhancement of broadcast programs.

### (1) Telecommunications businesses

As for the investments of telecommunications businesses, 74 percent were for the expansion of service provision capabilities. Investments to meet overseas demand showed a particular increase with special type II carriers (growth of 39.1 percent from FY 1988, 16.7 percent of total investments).

### (2) Broadcast businesses

Approximately half the investments by broadcast businesses were for the enhancement of broadcast programs. As for CATV businesses, approximately 80 percent were for the expansion of service areas.

## 3. Status of Long-Term Capital Procurement in FY 1989

The main sources of procurement were the carriers' own funds as well as borrowing. The weighing varies depending on individual type of business.

### (1) Telecommunications businesses

#### a. Type I carriers

Procurement based on own funds and borrowing increased while funding based on stocks decreased.

#### b. Special type II carriers

Own funds were used for investments in plant and equipment or for the repayment of debt.

#### c. General type II carriers

Procurement based on own funds and debts increased while funding based on corporate bonds decreased.

### (2) Broadcast businesses

#### a. Broadcast carriers

Procurement was mainly based on own funds, while funding based on stocks and borrowing also increased.

#### b. CATV carriers

Procurement was mainly based on borrowing (approximately 70 percent).

#### 4. Problems in Management

The greatest problem imposed on management is the burden of plant and equipment investments.

##### (1) Telecommunications businesses

The "excessive burden of plant and equipment investments" is a very great problem for management. A "lack of engineers" is also a major problem with type II carriers.

##### (2) Broadcast businesses

The greatest problems are the "excessive burden of plant and equipment investments" and "heavy burden of program production and purchase costs."

### III. Summary of Research Results

#### 1. Plant and Equipment Investment Plans for FY 1989

Plant and equipment investments planned for FY 1989 were higher for both telecommunications and broadcast businesses (overall growth of 19.5 percent from FY 1988).

##### (1) Plant and Equipment Investment Plans

a. A total of ¥540.7 billion was planned to be invested in plant and equipment in FY 1989 (on a works basis) by the communications industry as a whole (telecommunications and broadcast businesses) not including NTT and KDD. The telecommunications businesses invested 71.8 percent of the sum (43.1 percent by type I carriers, 28.7 percent by type II carriers), and broadcast businesses invested the remaining 28.2 percent (20.3 percent by broadcast carriers, 7.9 percent by CATV carriers).

b. The total plant and equipment investments (on a works basis) planned for FY 1989 by telecommunications businesses was ¥388.2 billion, a growth of 22.3 percent from FY 1988.

(a) The total investments of type I carriers not including NTT and KDD (including 50 new companies) in FY 1989 was ¥232.9 billion, a 21.3 percent growth from FY 1988.

The scale of their investments was only approximately 14 percent of NTT's planned investments for FY 1989 (¥1,700 billion), but the growth of their plant and equipment investments was higher than NTT and KDD (NTT: 0.7 percent decrease from FY 1988; KDD: 12.8 percent growth from FY 1988).

(b) The total investments of type II carriers (including 22 special type II carriers, 325 general type II carriers) in FY 1989 was ¥155.3 billion, a 24.0 percent growth from FY 1988.

c. The total plant and equipment investments (on a works basis) planned for FY 1989 by the broadcast business was ¥152.6 billion, a growth of 12.9 percent from FY 1988.

(a) The total investment of commercial broadcast carriers not including NHK (134 companies) in FY 1989 was ¥109.6 billion, 6.3 percent growth from FY 1988.

(b) The total investments of CATV carriers (94 commercial carriers) in FY 1989 was 43.0 billion, a large 34.4 percent growth from FY 1988.

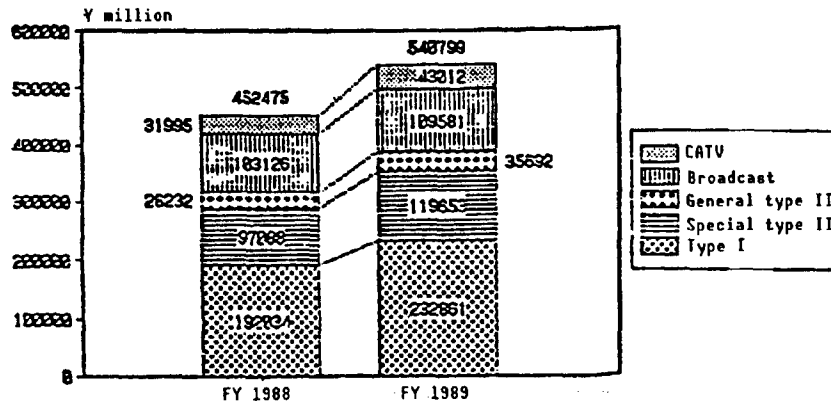


Figure 1.1 Amount of Plant and Equipment Investment (On a works basis)

Table 1.1 Amount of Plant and Equipment Investment (On a works basis) (¥ million, percent)

Category	Number of companies		FY 1988 (Actual)		FY 1989 (Planned)		FY 1990 (Reference)		Comparison with previous year 1989/1988
		Percent		Percent		Percent		Percent	
Telecommunications business	397	63.5	317,354	70.1	388,206	71.8	315,750	73.2	122.3
Type I carriers	50	8.0	192,034	42.5	232,861	43.1	259,870	60.2	121.3
Type II carriers	347	55.5	125,320	27.6	155,345	28.7	55,880	13.0	124.0
Special type II carriers	22	3.5	57,088	21.5	119,653	22.1	23,702	5.5	123.2
General type II carriers	325	52.0	28,232	6.1	35,892	6.6	32,178	7.5	126.4
Broadcast business	228	36.5	135,121	29.7	152,593	28.2	115,814	26.8	112.9
Broadcast carriers	134	21.5	103,126	22.8	109,581	20.3	77,325	17.9	106.3
CATV carriers	94	15.0	31,995	7.1	43,012	7.9	38,489	8.9	134.4
Total	625	100.0	452,475	100.0	540,799	100.0	431,564	100.0	119.5

[Table 1.1 continued]

(Reference)

(¥ million, percent)

	FY 1988 (actual)	FY 1989 (planned)	FY 1990 (reference)	Comparison with previous year
				1989/1988
NTT Corp.	1,712,820	1,700,000	undecided	99.3
KDD Co., Ltd.	56,893	64,200	undecided	112.8
NHK (budget, construction expenses)	44,000	56,100	undecided	127.5

**(2) Plant and Equipment Investments Planned by Telecommunications Businesses Broken Down by Purpose**

a. As for the breakdown of the purposes of plant and equipment investments by the telecommunications business, it is notable that the percentage and growth of investments "to meet the increase in demand," such as buildings, machinery and equipment which expand the ability to provided services, are high.

b. With type I carriers, investments "to meet the increase of demand" occupy 80 percent of their total investment, showing a growth of 32.3 percent from FY 1988. Investments for the introduction of machinery and equipment "to improve safety and reliability" also show a high growth though their percentage is small (growth of 294.1 percent from FY 1988).

c. With type II carriers, investments "to meet the increase of demand" made up approximately 70 percent of their total investment, showing a growth of 17.7 percent from FY 1988.

(a) With special type II carriers, investments "to meet the increase of overseas demand" show a high 39.1 percent growth from FY 1988, and their percentage is also high at 16.7 percent of the total. Investments "to improve safety and reliability" are also active. Investments in the existing NTT network "to deal with ISDN" also show a high growth through its percentage of the overall figure is not high (a growth of 787.3 percent from FY 1988).

(b) With general type II carriers, it is notable that growth is particularly high in "maintenance and servicing" and in investments "to rationalize and save labor" by means of the introduction of office automation equipment and computers.

Table 1.2 Plant and Equipment Investments by Telecommunications Business  
 Broken Down by Purpose  
 (Telecommunications Businesses) (Percent)

Item	Total telecommunications business (399 companies)		Type I carriers (52 companies)		Total type II carriers (347 companies)		Special type II carriers (22 companies)		General type II carriers (325 companies)	
	Percent FY 1989	1989/1988	Percent FY 1989	1989/1988	Percent FY 1989	1989/1988	Percent FY 1989	1989/1988	Percent FY 1989	1989/1988
To meet increase in demand	74.0	126.8	79.1	132.3	66.0	117.7	69.9	110.4	54.0	123.9
To meet Japanese demand	67.9	126.0	79.1	132.3	51.2	113.7	50.5	110.0	52.9	126.7
To meet increase in overseas demand	5.2	138.3	0.0	-	12.6	132.4	16.7	139.1	0.4	38.9
Distinction unknown	0.9	122.3	0.0	-	2.2	124.0	2.7	120.0	0.7	88.5
To deal with ISDN	2.3	201.0	1.9	109.7	3.0	929.7	3.6	887.3	0.8	1011.4
To deal with OSI	0.3	183.5	0.0	-	0.8	198.3	0.8	197.2	0.6	108.4
Maintenance and servicing	3.2	111.8	0.5	37.9	7.3	141.4	6.0	125.3	11.5	177.3
Updating (replacing superannuated equipment)	1.3	144.6	0.3	181.9	2.8	144.6	1.9	180.1	5.9	122.3
R&D	1.7	115.5	0.4	121.3	3.6	117.4	2.6	139.3	7.0	97.2
To rationalize and save labor	1.1	122.3	0.2	121.3	2.5	129.1	1.0	112.0	7.7	145.3
To improve safety and reliability	4.3	175.3	1.3	394.1	8.7	154.1	9.2	149.2	7.0	173.5
Other	11.8	87.5	16.3	87.5	5.3	92.5	5.2	94.2	5.5	86.9
Total	100.0		100.0		100.0		100.0		100.0	

(3) Plant and Equipment Investment Plans Broken Down by Item

a. As for the details of investments by type I carriers, investments in "line plant and equipment" (communication cables, conduit lines, etc.) and "transmission plant and equipment" (terminal repeater equipment, multiplexers, etc.) for the expansion of service provision capabilities made up approximately 50 percent of the total, reflecting the purposes of investments. They show high growth of 59.3 percent and 52.7 percent, respectively, from FY 1988. Particularly, among the category of investments into line plant and equipment, investments in communication cables and conduit lines which make up repeating systems show a very high growth of 142.5 percent from FY 1988.

b. As for the details of investments by broadcast carriers, investments in "studio plant and equipment" and "construction of buildings (station buildings, etc.)" for the enhancement of programs made up approximately half the total. Investments in "transmission lines and antennas" for the enhancement of transmission/reception plant and equipment show a particularly high growth (an increase of 73.1 percent from FY 1988).

On the other hand, with CATV carriers, investments into "transmission lines and antennas" for the expansion of service areas occupy approximately 80 percent and also show high growth (an increase of 40.7 percent from FY 1988). The growth of investments into "construction of buildings (station buildings, etc.)" and "studio equipment" was also high.

Table 1.3 Details of Plant and Equipment Investment of Type I Carriers Broken  
Down by Item  
(Type I carriers, 52 companies) (Percent)

Item	Type I carriers	
	Percentage in FY 1989	1989/1988
Transmission line plant and equipment	33.1	159.3
Repeating system plant and equipment	6.2	242.5
Terminal system plant and equipment	26.9	147.6
Communications satellite plant and equipment	4.5	103.0
Transmission plant and equipment	17.5	152.7
Switching plant and equipment	9.5	101.1
Computers	1.4	121.3
Terminal equipment plant and equipment	13.6	103.1
Power supply plant and equipment	4.8	142.0
Land, buildings, construction	7.4	64.1
Other	7.8	114.0
Total	100.0	

Table 1.4 Details of Plant and Equipment Investments by Broadcast Carriers  
 Broken Down by Item  
 (Broadcast carriers) (percent)

Item	Broadcast carriers (134 companies)		CATV carriers (94 companies)	
	Percent in FY 89	1989/1988	Percent in FY 89	1989/1988
Construction of buildings (station buildings, etc.)	17.7	136.3	3.1	189.4
Auxiliary plant and equip- ment, accessories, etc.	11.1	107.2	3.1	130.2
Studio equipment	33.0	119.3	11.8	146.9
Transmission lines, antennas	5.7	173.1	79.0	140.7
Laying of cables, etc.	0.0	-	1.5	50.4
R&D	0.2	106.3	0.3	80.7
Other	32.3	81.5	1.2	42.5
Total	100.0		100.0	

(4) Plant and Equipment Investment Plans Broken Down by Amount of Capital

a. In type I telecommunications business, approximately 60 percent of total investments were from carriers with capital of ¥10 billion or more. As for the growth of investments compared to FY 1988, however, it was highest, at 104.4 percent, for carriers with capital of between ¥1 billion and ¥10 billion.

In type II telecommunications business, approximately 70 percent of total investments were from carriers with capital of ¥10 billion or more, and this class of carrier also shows the highest level of growth, which is 57.6 percent from FY 1988.

Table 1.5 plant and equipment investments Broken Down by Capital  
(Telecommunications businesses) (On a works basis)

(Type I telecommunications business) (¥ million, percent)

Capital (¥ million)	Carriers (companies, %)	FY 1988	FY 1989	Comparison 1989/1988
Below 1,000	32 (64.0)	12,619 ( 6.6)	14,045 ( 6.0)	111.3
1,000-10,000	9 (18.0)	39,211 (20.4)	80,163 (34.4)	204.4
10,000 or more	9 (18.0)	140,204 (73.0)	138,653 (59.6)	98.9
Total	50 (100 )	192,034 (100 )	232,861 (100 )	121.3

(Type II telecommunications business) (¥ million, percent)

Capital (¥ million)	Carriers (companies, %)	FY 1988	FY 1989	Comparison 1989/1988
Below 50	123 (35.4)	2,572 ( 2.1)	1,894 ( 1.2)	73.6
50-100	44 (12.7)	1,850 ( 1.5)	2,363 ( 1.5)	127.7
100-1,000	119 (34.3)	12,994 (10.4)	15,974 (10.3)	122.9
1,000-10,000	38 (11.0)	42,199 (33.7)	31,558 (20.3)	74.8
10,000 or more	23 ( 6.6)	65,705 (52.3)	103,556 (66.7)	157.6
Total	347 (100 )	125,320 (100 )	155,345 (100 )	124.0

b. In the broadcast business, approximately 70 percent of total investments were from carriers with capital of ¥1 billion or more, and their investments show a high growth of 19.3 percent from FY 1988.

In the CATV business, approximately 80 percent of total investments were from carriers with capital of ¥100 million to ¥1 billion, and their investments show a high growth of 50.8 percent from FY 1988.

Table 1.6 Plant and Equipment Investments Broken Down by Capital  
(Broadcast business) (On a works basis)

(Broadcast business) (¥ million, percent)

Capital (¥ million)	Carriers (companies, %)	FY 1988	FY 1989	Comparison 1989/1988
Below 1,000	107 (79.8)	42,131 (40.9)	36,803 (33.6)	87.4
1,000 or more	27 (20.2)	60,995 (59.1)	72,772 (66.4)	119.3
Total	134 (100 )	103,126 (100 )	109,581 (100 )	106.3

(CATV business)

(¥ million, percent)

Capital (¥ million)	Carriers (companies, %)	FY 1988	FY 1989	Comparison 1989/1988
Below 50	23 (24.5)	1,222 ( 3.7)	1,279 ( 3.0)	104.7
50-100	9 ( 9.6)	4,266 (13.3)	4,953 (11.5)	116.1
100-1,000	55 (58.5)	22,288 (69.7)	33,603 (78.1)	150.8
1,000-10,000	6 ( 6.4)	4,209 (13.2)	3,124 ( 7.3)	74.2
10,000 or more	1 ( 1.0)	10 ( 0.1)	53 ( 0.1)	530.0
Total	94 (100 )	31,995 (100 )	43,012 (100 )	134.4

## 2. Status of Long-Term Capital Employment and Procurement in Plant and Equipment Investments for FY 1989

### (1) Telecommunication Businesses

#### a. Type I carriers

Procurement based on own funds and borrowing increased while that based on stocks decreased.

The plant and equipment investments planned for FY 1989 based on a payment basis was ¥240.3 billion, showing a growth of 31.9 percent from FY 1988.

As for the overall capital employment plan, the total amount was ¥226.6 billion, a growth of 19.2 percent from FY 1988. This was due to restrictions on investments and loans to affiliated companies.

As for the composition of capital procurement, the ratio of own funds was 19.3 percent, 144.4 percent more than FY 1988, and that of external funds was 80.7 percent. Funds borrowed make up 90.3 percent of external funds.

Among external funds, procurement based on stocks decreased largely (56.7 percent of FY 1988), and that based on borrowing increased (from 69 percent in FY 1988 to 72.9 percent in FY 1989).

Table 2.1 Situation of Long-Term Capital Employment and Procurement  
(Type I carriers, 50 companies) (Based on net increase)  
(¥ million, percent)

Item		Type I carriers				
		Achievement FY 1988		FY 1989 Plan		
		Amount	%	Amount	%	Compar- ison 1989/ 1988
Capital employ- ment	Plant and equipment investment funds	182,136	95.8	240,302	106.0	131.9
	Investments, loans to affiliated companies, etc.	3,934	2.1	▲ 701	▲ 0.3	-
	Transfer to short- term funds	4,008	2.1	▲12,990	▲ 5.7	-
Total		190,078	100	226,611	100	154.8
Capital pro- cure- ment	Stock	40,927	21.5	17,740	7.8	43.3
	Corporate bonds	0	0	0	0	-
	Debts	131,243	69.0	165,108	72.9	125.8
	Own funds	17,903	9.5	43,763	19.3	244.4
	Including depreciation of	31,034	16.3	42,424	18.7	136.7

(Note) NTT and KDD are not included in calculations.

**b. Special type II carriers**

Payment for plant and equipment investments decreased. Own funds were mainly used for investments in plant and equipment and the repayment of debts.

The amount of plant and equipment investments planned for FY 1989 based on payments was ¥44.2 billion, a decrease of 71.5 percent from FY 1988.

As for the overall capital employment plans, the total amount was reduced to ¥48.6 billion, which is a decrease of 70.2 percent from FY 1988.

As for the comparison of capital procurement, plant and equipment investments are provided mainly from own funds, and surplus funds are used to repay debts.

Table 2.2 Status of Long-Term Capital Employment and Procurement  
(Special type II carriers, 22 companies) (Based on net increase)  
(¥ million, percent)

Item		Special type II carriers				
		Achievement FY 1988		FY 1989 Plan		
		Amount	%	Amount	%	Compar- ison 1989/ 1988
Capital employ- ment	Plant and equipment investment funds	155,179	94.9	44,207	90.9	28.5
	Investments, loans to affiliated companies, etc.	▲ 812	▲0.4	183	0.4	-
	Transfer to short- term funds	9,058	5.5	4,253	8.7	47.0
Total		163,425	100	48,643	100	29.8
Capital pro- cure- ment	Stock	2,900	1.7	4,010	8.2	138.3
	Corporate bonds	▲ 350	▲0.2	▲ 300	▲ 0.6	-
	Debts	50,441	30.9	▲24,797	▲51.0	-
	Own funds	110,434	67.6	69,730	143.4	63.1
	Including depreciation of	74,109	45.3	24,239	44.8	32.7

c. General type II carriers

Procurement based on own funds and borrowing increased, while that based on stocks and corporate bonds decreased.

The amount of plant and equipment investments planned for FY 1989 based on payments was ¥56.7 billion, showing a growth of 27.7 percent from FY 1988.

As for the overall capital employment plan, the total amount was reduced to ¥114.4 billion, a decrease by 10.2 percent from FY 1988, due to the 40 percent decrease of shifting of long-term funds into short-term operation funds when compared to FY 1988.

Table 2.3 Status of Long-Term Capital Employment and Procurement  
(General type II carriers, 325 companies) (Based on net increase)  
(¥ million, percent)

Item		General type II carriers				
		Achievement FY 1988		FY 1989 Plan		
		Amount	%	Amount	%	Compar- ison 1989/ 1988
Capital employ- ment	Plant and equipment investment funds	44,384	34.8	56,700	49.6	127.7
	Investments, loans to affiliated companies, etc.	15,385	12.1	17,105	15.0	111.2
	Transfer to short-term funds	67,629	53.1	40,589	35.4	60.0
Total		127,398	100	114,394	100	89.8
Capital pro- cure- ment	Stock	16,214	12.7	8,049	7.0	49.6
	Corporate bonds	31,270	24.5	7,864	6.9	25.1
	Debts	31,178	24.5	42,847	37.5	137.4
	Own funds	48,736	38.3	55,634	48.6	114.2
	Including depreciation of	14,163	11.1	16,249	14.2	114.7

As for the composition of capital procurement, the ratio of own funds was 48.6 percent which is 14.2 percent more than FY 1988, and that of external funds was 51.4 percent. Funds borrowed made up 72.9 percent of the external funds.

Among the external funds, procurement based on stocks and corporate bonds greatly decreased (50.4 percent of FY 1988, a decrease of 74.9 percent), and that based on debts increased (from 24.5 percent in FY 1988 to 37.5 percent in FY 1989).

## **(2) Broadcast Businesses**

### **a. Broadcast carriers**

Procurement was mainly based on own funds, but that based on stocks and borrowing also increased.

The amount of plant and equipment investments planned for FY 1989 based on payments was ¥128.4 billion, showing a growth of 54.8 percent from FY 1988.

As for the overall capital employment plan, the total amount increased to ¥149.3 billion, a growth of 31.8 percent from FY 1988. This is due to the decrease of shifting of long-term procured funds into short-term operation funds (decrease of 40 percent from FY 1988) and to the restriction on the investments and loans intended for operation funds (a decrease of 19.8 percent from FY 1988).

As for the breakdown of capital procurement, the main source was own funds, which made up 72.8 percent of the total, while external funds made up the remaining 27.2 percent.

Among external funds, procurement based on corporate bonds greatly decreased (decrease by 96.1 percent from FY 1988), and that based on stocks and borrowing increased (Stocks: from 2.6 percent in FY 1988 to 16.7 percent in FY 1989. Borrowing: from 5.8 percent in FY 1988 to 10.4 percent in FY 1989).

Table 2.4 Situation of Long-Term Capital Employment and Procurement  
 (Broadcast carriers, 134 companies) (Based on net increase)  
 (¥1 million, percent)

Item		Broadcast carriers				
		Achievement FY 1988		FY 1989 Plan		
		Amount	%	Amount	%	Compar- ison 1989/ 1988
Capital employ- ment	Plant and equipment investment funds	89,923	73.2	128,382	86.0	154.8
	Investments, loans to affiliated companies, etc.	12,102	10.7	9,708	6.5	80.2
	Transfer to short-term funds	18,224	16.1	11,189	7.5	61.4
Total		113,249	100	149,279	100	131.8
Capital pro- cure- ment	Stock	2,909	2.6	24,895	16.7	885.8
	Corporate bonds	2,484	2.2	97	0.1	▲96.1
	Debts	6,601	5.8	15,552	10.4	235.6
	Own funds	101,255	89.4	108,735	72.8	107.4
	Including depreciation of	37,223	32.9	42,553	28.5	114.3

**B. CATV carriers**

Procurement was mainly based on borrowing (approximately 70 percent).

The plant and equipment investments planned for FY 1989 based on payments was ¥39.1 billion, a growth of 33 percent from FY 1988.

As for the overall capital employment plan, the total amount increased to ¥42.8 billion with a growth of 15.8 percent from FY 1988. This is due to the decrease of shifting of long-term procured funds into short-term operation funds by 40 percent from FY 1988.

As for the breakdown of capital procurement, own funds made up 27.5 percent and the external funds made up 72.5 percent. Among the external funds, procurement based on borrowing was the main source, making up 91.9 percent of the total.

Table 2.5 Situation of Long-Term Capital Employment and Procurement  
(CATV carriers, 94 companies) (Based on net increase)  
(¥ million, percent)

Item		CATV carriers				
		Achievement FY 1988		FY 1989 Plan		
		Amount	%	Amount	%	Compar- ison 1989/ 1988
Capital employ- ment	Plant and equipment investment funds	29,383	79.5	39,070	91.4	133.0
	Investments, loans to affiliated companies, etc.	3,360	9.1	3,558	8.3	105.9
	Transfer to short- term funds	4,194	11.4	137	0.3	3.3
Total		36,937	100	42,765	100	115.8
Capital pro- cure- ment	Stock	2,351	6.3	2,497	5.8	106.2
	Corporate bonds	0	0	0	0	—
	Debts	24,441	66.2	28,507	66.7	116.6
	Own funds	10,145	27.5	11,761	27.5	115.9
	Including depreciation of	4,664	12.6	6,017	14.1	129.0

### 3. Problems of Management

#### (1) Telecommunications Businesses

##### a. Type I carriers

The most important problem pointed out was the excessive burden of plant and equipment investments." Next to this were the "excessive burden of circuit charges" and "enhancement of service menu."

##### b. Special type II carriers

The most important problem pointed out was "excessive burden of plant and equipment investments." Next to this were "lack of engineers" and "enhancement of service menu."

##### c. General type II carriers

The most important problem pointed out was "lack of engineers." Next to this were "acquisition of new customers" and "enhancement of service menu."

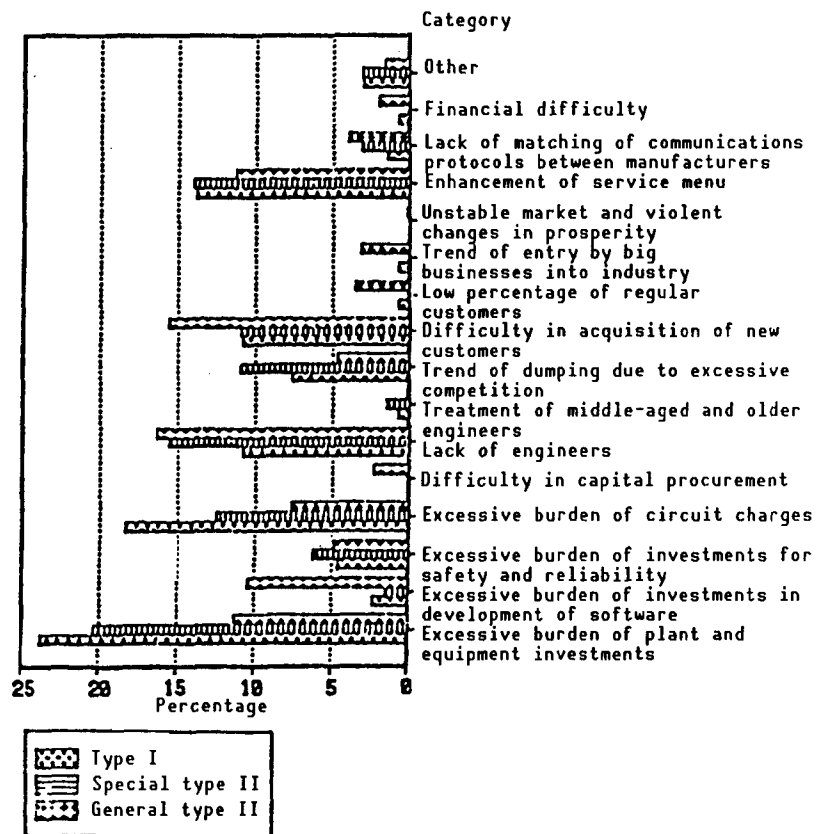


Figure 3.1 Problem of Management  
(Telecommunications business, 399 companies)

(2) Broadcast Businesses

a. Broadcast carriers

The most important problem pointed out was the "heavy burden of program production and purchase costs." Next to this were "excessive burden of plant and equipment investments," "difficulty in acquisition of new customers" and "difficult in acquisition of income from publicity and advertising."

b. CATV carriers

The most important problem pointed out was "excessive burden of plant and equipment investments." Next to this were "heavy burden of program production and purchase cost" and "difficulty in acquisition of new customers."

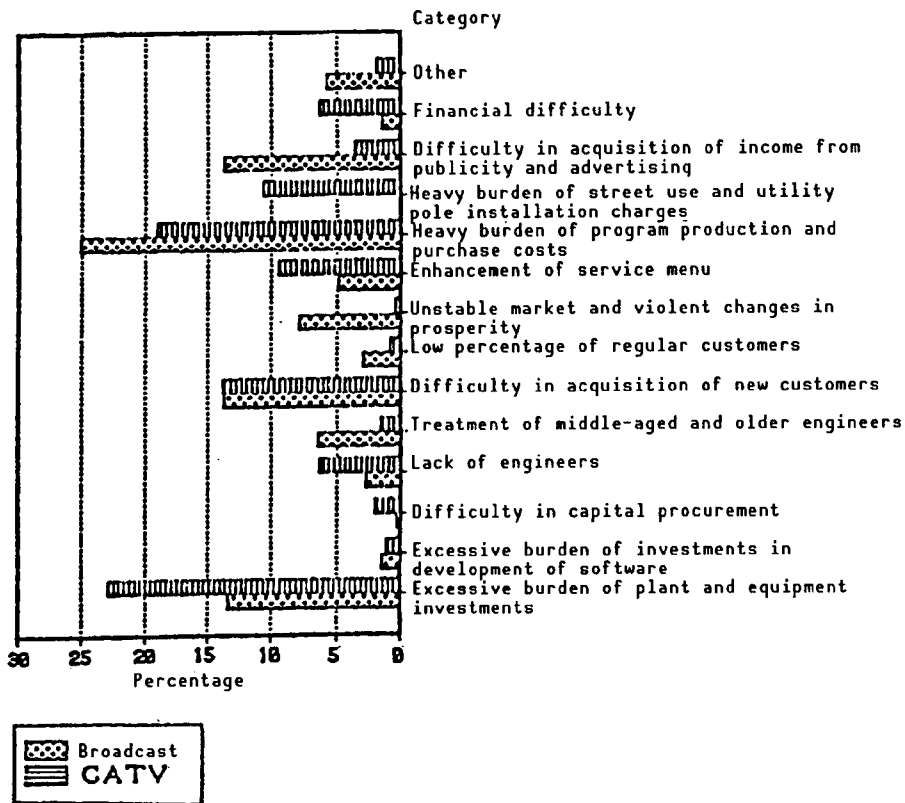


Figure 3.2 Problem of Management  
(Broadcast business, 228 companies)

(3) Problems of Companies With Different Scales of Capital

a. Telecommunications businesses

(a) Type I carriers

The smaller the capital of the carrier, the more severe the problems of "excessive burden of circuit charges" and "enhancement of service menu." On the other hand, the problem of "lack of engineers" is more of a burden on carriers with more capital.

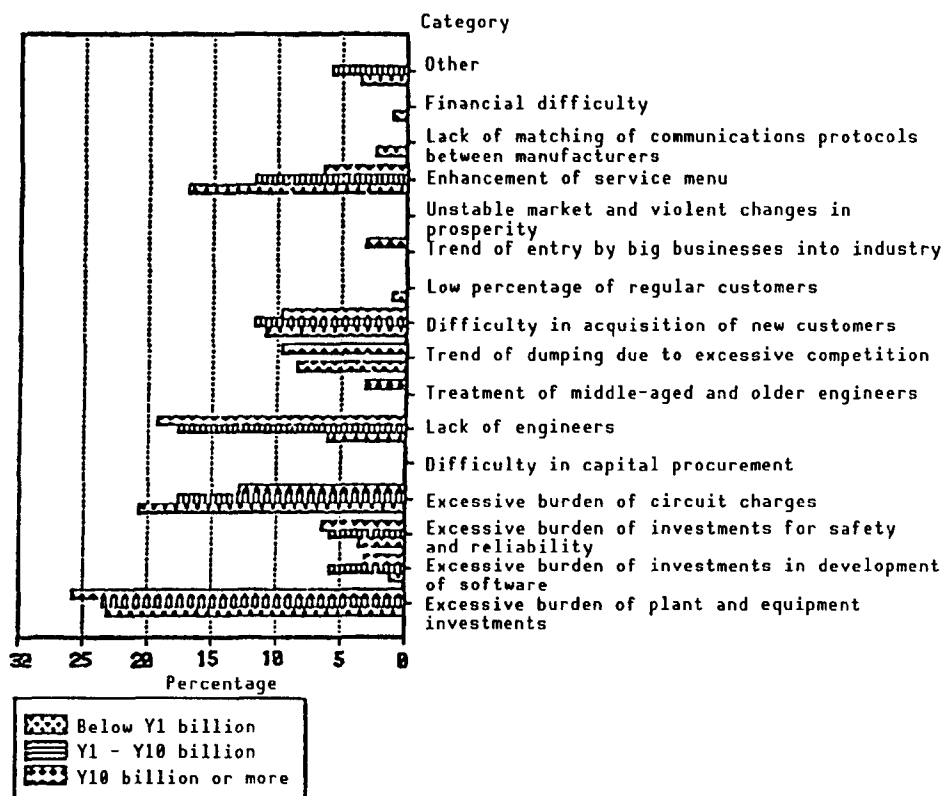


Figure 3.3 Problems in Management Broken Down by Capital  
(Type I telecommunications business, 52 companies)

(b) Special type II carriers

Medium and small carriers with capitals of less than ¥100 million are troubled by "excessive burden of plant and equipment investments" and "enhancement of service menu."

(c) General type II carriers

Regardless of the amount of capital, there are common problems of "lack of engineers," "acquisition of new customers" and "enhancement of service menu."

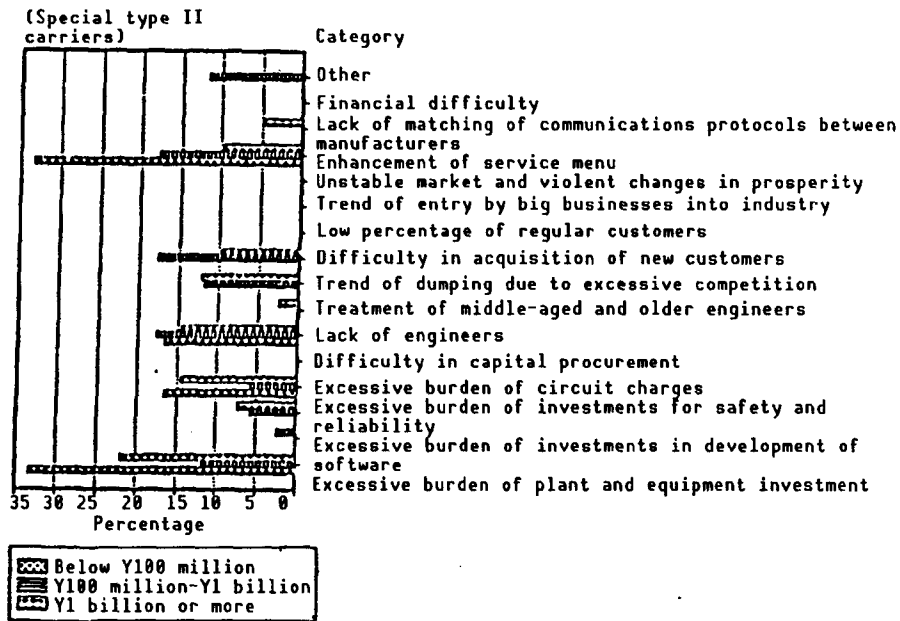
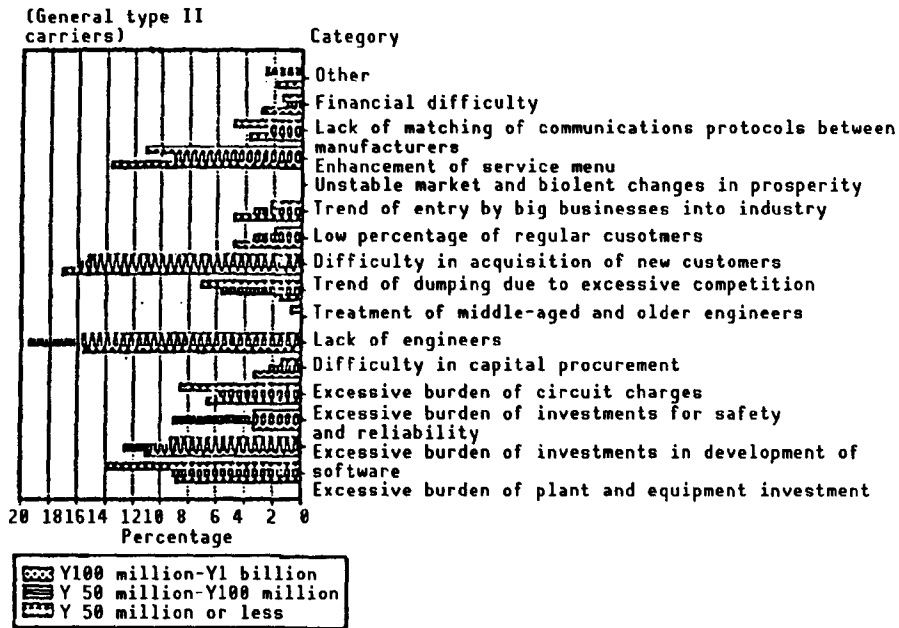


Figure 3.4 Problems of Management Broken Down by Capital  
 (Type II telecommunications business) (22 special type II carriers,  
 325 general type II carriers)

b. Broadcast businesses

(a) Broadcast carriers

Regardless of the amount of capital, the largest problem is the "heavy burden of program production and purchase costs." In addition, carriers with capital

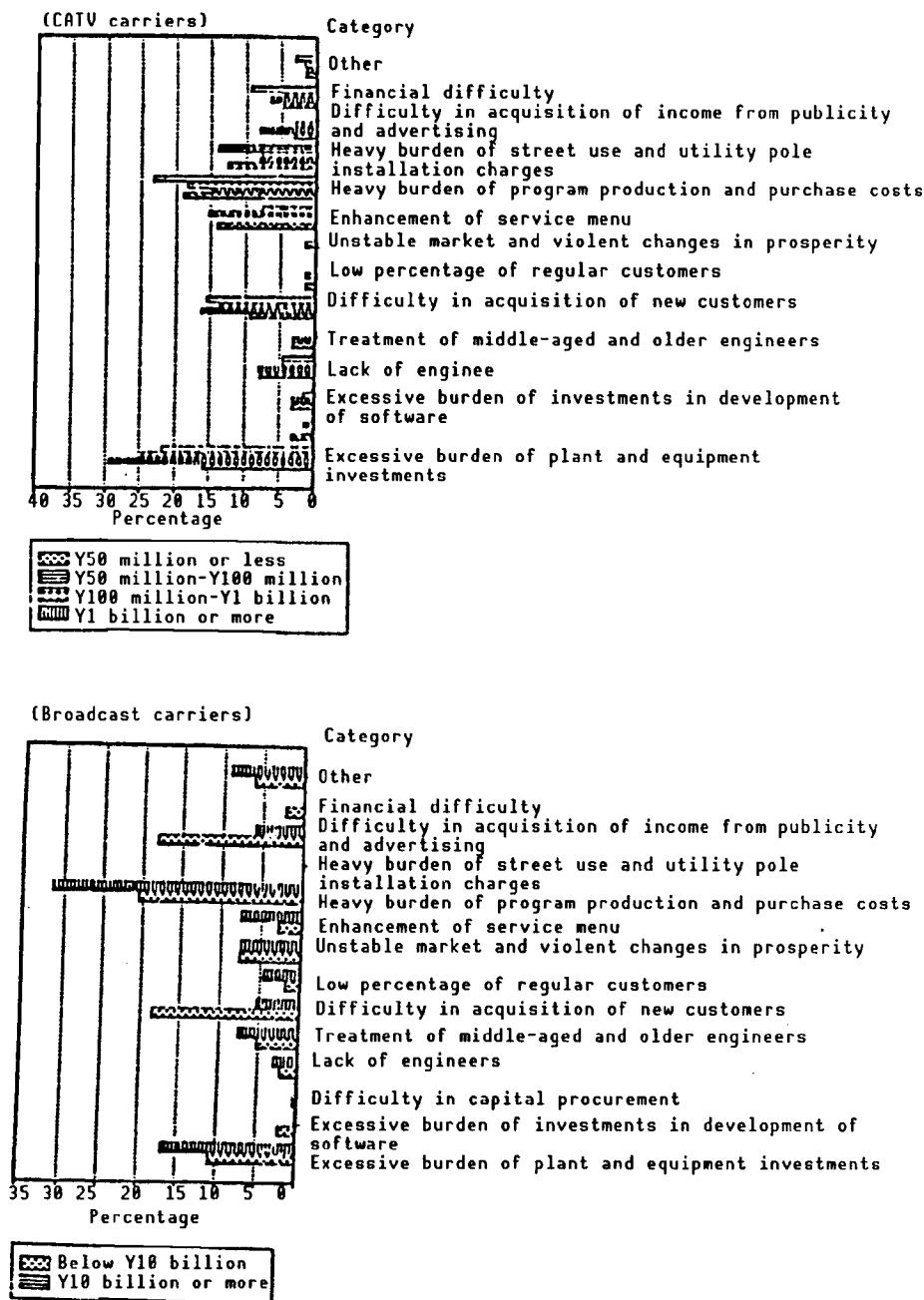


Figure 3.5 Problems in Management Broken Down by Capital (Broadcast businesses) (134 broadcast carriers, 94 CATV carriers)

of less than ¥1 billion have the problem of "difficulty in acquisition of new customers," and those with capital of ¥1 billion or more have the problem of "excessive burden of plant and equipment investments."

**(b) CATV carriers**

Regardless of the scale of capital, the major problems are the "excessive burden of plant and equipment investments," and "heavy burden of program production and purchase costs." Particularly, the largest problem with carriers with capitals of ¥1 billion or more is "heavy burden of program production and purchase costs."

**4. Business Balance**

In both the telecommunications and broadcast businesses, an increased number of companies can be assured of a profit in FY 1993.
--

**(1) Telecommunications businesses**

At present, almost all companies in the type I telecommunications business are suffering from problems of their balances (approximately 80 percent of them being in deficit). However, it is expected that approximately 40 percent of the companies will be profitable by FY 1993 (with companies in deficit reduced to approximately 50 percent).

The majority of companies in type II telecommunications business are also suffering from problems with their balances (approximately 60 percent of them being in deficit). It is also expected that approximately 20 percent of the companies will be profitable in FY 1993 (with companies in deficit reduced to approximately 50 percent).

**(2) Broadcast businesses**

In the broadcast business, only approximately 10 percent of companies are in deficit and the business is generally profitable. It is expected that the percentage of fairly profitable companies will further increase (from approximately 30 percent at present to approximately 50 percent).

In the CATV business, approximately 90 percent of the companies are suffering from problems with their balances (approximately 60 percent of them being in deficit). It is expected that the companies in deficit will decrease and those which are fairly profitable will increase (from approximately 10 percent to approximately 30 percent) in FY 1993.

Table 4.1 Balances and Businesses

(percent)

Item	(Expenses, income ratio, percent)	Type I business (52 companies)		Special type II business (22 companies)		General type II business (325 companies)		Broadcast business (134 companies)		CATV business (94 companies)	
		FY 88	FY 93	FY 88	FY 93	FY 88	FY 93	FY 88	FY 93	FY 88	FY 93
Companies with positive balance	Fairly profitable (90% or less)	1.8	39.4	4.0	20.0	7.7	24.7	33.9	48.9	8.8	26.3
	Balanced, but suffering (90 ~110)	20.7	13.2	36.0	28.0	33.3	27.5	54.4	42.8	34.0	26.5
Companies with negative balance	Minor deficit (110 ~150)	47.1	28.3	24.0	20.0	30.6	24.4	9.7	7.1	20.1	15.1
	Major deficit (More than 150)	30.1	18.8	36.0	32.0	28.2	23.2	1.6	0.8	36.6	31.6
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

5. Perspective of Environment for Plant and Equipment Investments

The environment for plant and equipment investments as of FY 1989 was, in general, favorable.

In general, the investment environment was satisfactory.

However, among type I telecommunications and broadcast businesses, more companies than before decreased their investments in the second half of FY 1989 [in the period from the fourth quarter of 1989 to the first quarter of 1990] (4.1 percent of type I carriers, 15.2 percent of broadcast carriers).

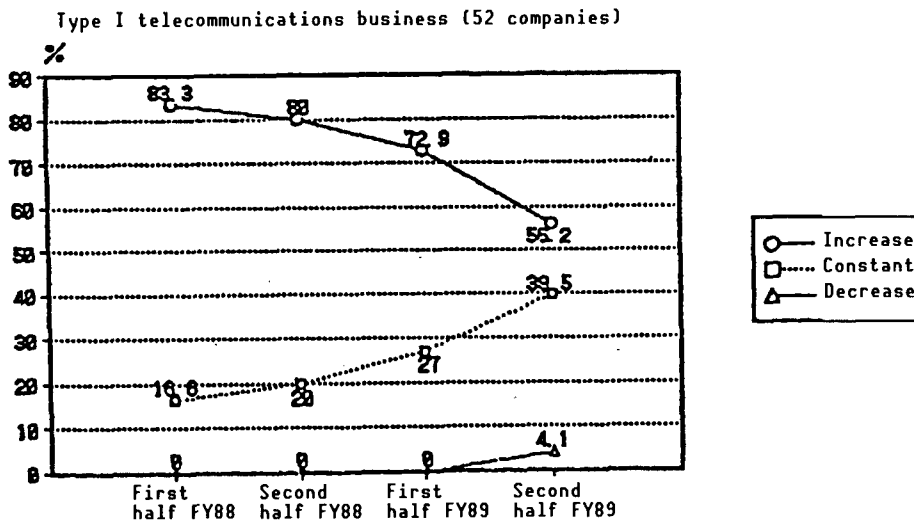
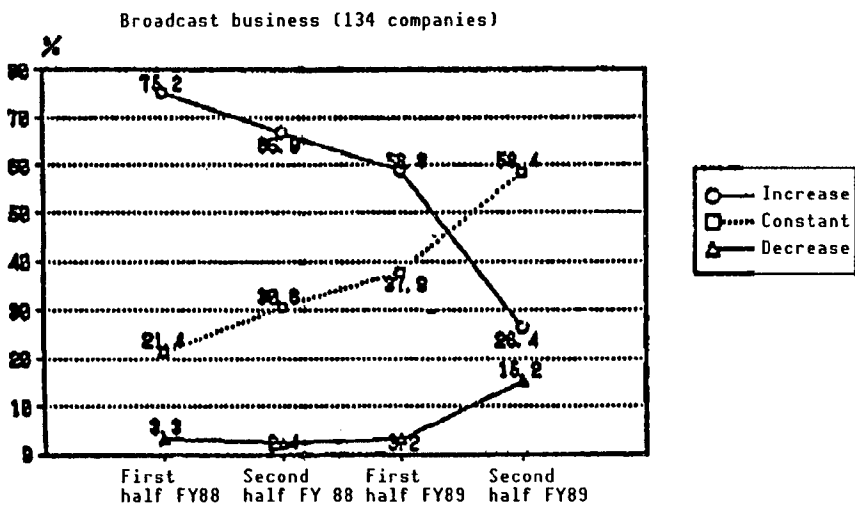
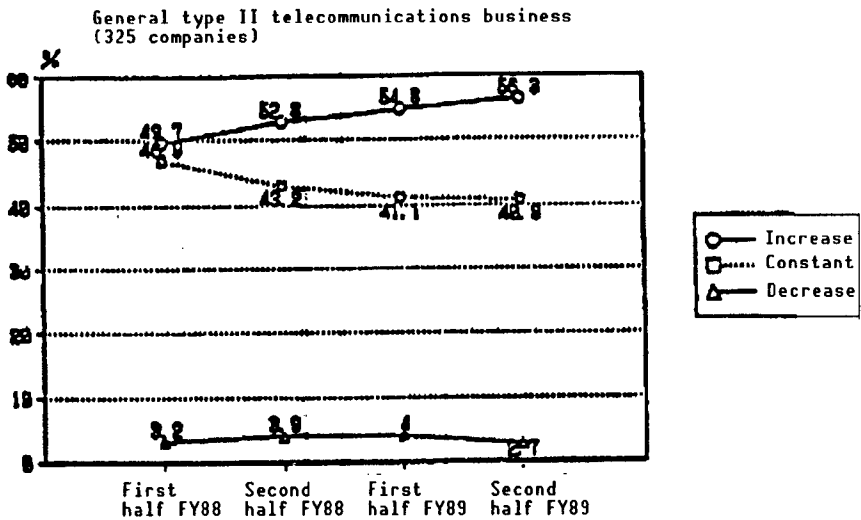
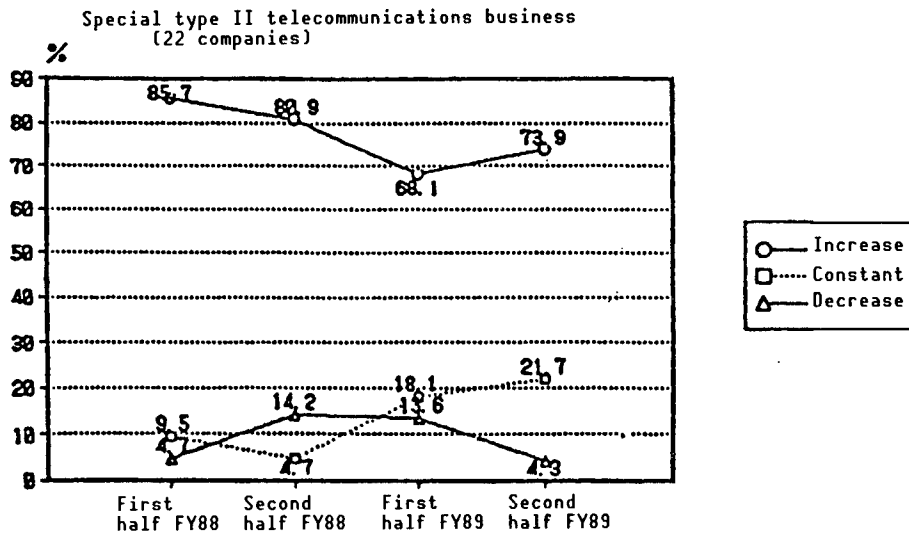
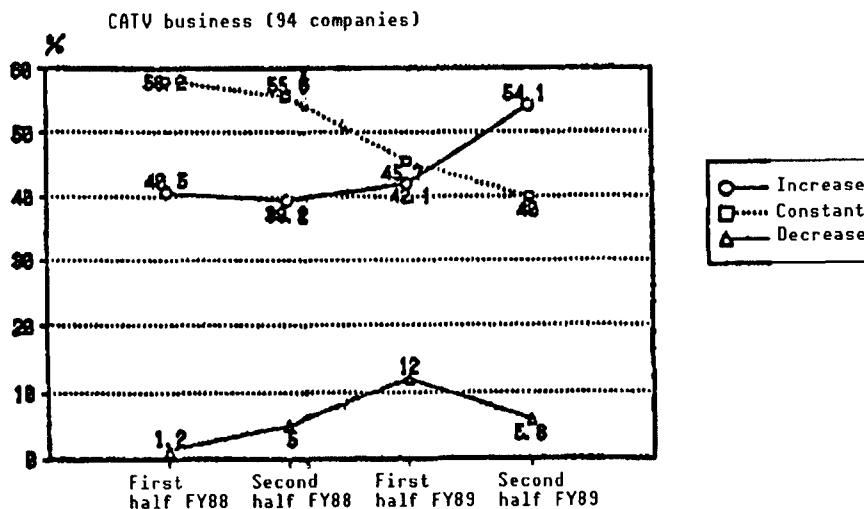


Figure 5.1 Perspective of Environment for Plant and Equipment Investments

[Figure 5.1 continued]



[Figure 5.1 continued]



## 6. Possibility of Change of Plant and Equipment Investments

It is thought that plant and equipment investments in FY 1989 progressed smoothly, and approximately 30 percent of companies admit the possibility of increasing their investments.

With both telecommunications and broadcast businesses, the possibility of changing the plant and equipment investments planned for FY 1989 is relatively small, and approximately 30 percent of the companies admit the possibility of further increasing their investments.

Particularly, approximately 40 percent of the companies in general type II telecommunications and CATV businesses examined additional investments.

## 7. Status of Employees

Carriers employing 500 or more persons made up only 3 percent of the replies to our questionnaires.

### (1) Telecommunications Businesses

a. As for the number of employees per carrier, the total number of employees of approximately half of all carriers is between 10 and 99 in type II telecommunications and special type II businesses. In the general type II telecommunications business, the total number of employees of approximately 60 percent of all carriers is less than 10.

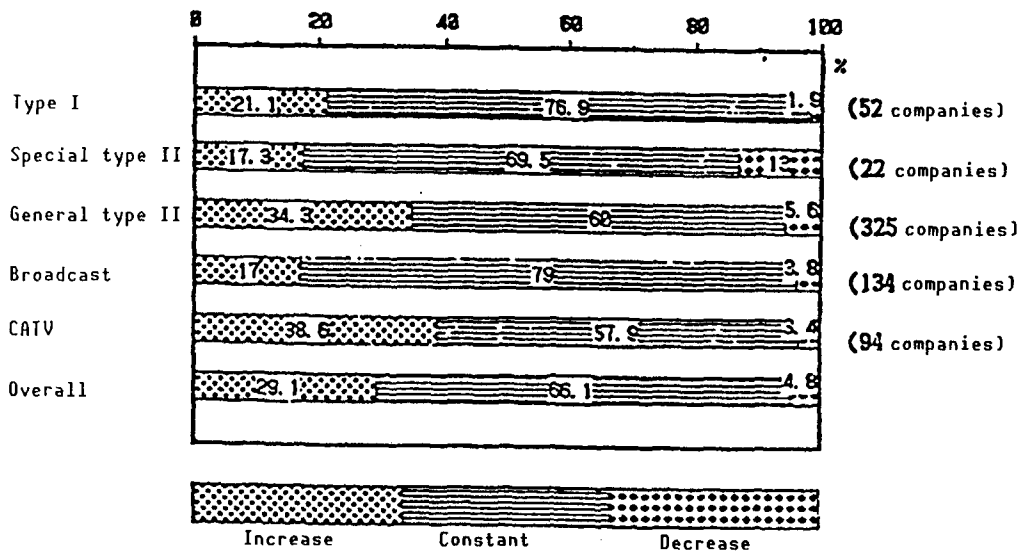


Figure 6.1 Possibility of Changes in Plant and Equipment Investments

Table 7.1 Situation of Employee per Carrier (Telecommunications businesses)  
(Companies, employees/company)

(Companies, employees/company)

Total employees	Type I carriers		
	Answers (percentage)	Additional personnel	Transferred staff
Below 10	14 (28.0)	1.7	2.5
10-99	27 (54.0)	10.4	6.1
100-499	7 (14.0)	59.1	55.7
500 or more	2 (4.0)	331.0	80.0
Total	50 (100.0)	26.6	14.9

Note: NTT and KDD are not included in calculations.

Total employees	Special type II carriers			General type II carriers		
	Answers (percentage)	Additional personnel	Transferred staff	Answers (percentage)	Additional personnel	Transferred staff
Below 10	1 (4.5)	0	0	151 (58.3)	0.4	1.4
10-99	11 (50.0)	8.2	10.8	81 (31.3)	2.7	6.1
100-499	6 (27.3)	24.7	78.8	23 (8.9)	19.9	17.0
500 or more	4 (18.2)	98.8	206.3	4 (1.5)	76.0	839.2
Total	22 (100.0)	28.7	64.4	259 (100.0)	4.0	17.1

Note: Additional personnel: Among the actual personnel, those who were hired newly in the period from 1 April 1988 to 31 March 1989.

b. As for the composition of employees in each carrier company, what is characteristic is that the percentage of additional personnel is important in the type I telecommunications business, and that the percentage of transferred staffs is important in type II telecommunications business.

**(2) Broadcast Businesses**

a. As for the number of employees per carrier, the total number of employees of approximately half of all carriers is between 100 and 499 in the broadcast business. In the CATV business, the total number of employees of all carriers is less than 100.

b. What is characteristic is that the numbers of additional personnel and transferred staff are smaller than in the telecommunications businesses.

Table 7.2 Status of Employee Per Carrier  
(Broadcast businesses)

(Companies, employees/company)

Total employees	Broadcast carriers			CATV carriers		
	Answers (%)	Additional personnel	Transferred staff	Answers (%)	Additional personnel	Transferred staff
Below 10	10 ( 7.6)	0.7	4.2	41 (49.4)	0.8	2.3
10-99	45 (34.1)	3.4	4.3	42 (50.6)	3.4	2.5
100-499	68 (51.5)	6.6	9.6	0 ( 0.0)	-	-
500 or more	9 ( 6.8)	30.9	57.9	0 ( 0.0)	-	-
Total	132 (100 )	6.7	10.6	83 (100 )	2.1	2.4

(Note) NTT and KDD are not included in calculations.

**8. Status of Plant and Equipment Investments by Telecommunications Carriers**

Type I carriers often purchase their plant and equipment, while type II carriers lease or rent them.

As for the possession of plant and equipment by telecommunications carriers, type I carriers possess more "multiplexers" and "terminal equipment," while type II carriers possess more "computers," "exchanges," and "line concentrators."

As for the forms of possession, both "purchase" and "leasing" are utilized with all types of plant and equipment. Also, type II carriers often use "rental."

With regard to "terminal equipment," type I carriers and special type II carriers almost always possess it through "purchase" while general type II carriers possess it mainly by "leasing."

Table 8.1 Status of Plant and Equipment Possessed at Each Carrier  
(Companies, units/company)

Category	Type I carriers					Special type II carriers					General type II carriers					
	An- swers	Total	Pur- chased	Leased	Rent- ed	An- swers	Total	Pur- chased	Leased	Rent- ed	An- swers	Total	Pur- chased	Leased	Rent- ed	
Computers	Large	4	4.5	1.5	1.0	2.0	17	11.4	4.4	3.8	3.2	86	6.7	2.0	2.1	2.6
	Medium	12	6.0	4.8	1.2	0.0	14	17.8	4.3	4.5	9.0	132	10.3	6.1	1.7	2.5
	Small	24	3.7	1.6	1.1	1.0	10	6.3	4.6	1.7	0.0	93	18.3	11.2	5.0	2.1
	Mini	21	16.6	4.9	10.7	1.0	6	37.2	7.2	30.0	0.0	99	24.7	11.2	10.0	3.5
Exchange	Trunk switch	16	6.1	6.1	0.0	0.0	16	13.8	6.7	7.1	0.0	35	23.0	12.0	5.5	5.5
	Local switch	14	8.2	8.2	0.0	0.0	10	32.2	16.5	15.7	0.0	46	14.9	4.3	7.0	3.6
Multiplexer	11	234.2	234.2	0.0	0.0	16	116.6	90.0	26.6	0.0	82	26.1	11.0	9.6	5.5	
Line concentrator	5	68.2	49.2	19.0	0.0	16	314.3	253.1	51.2	10.0	57	177.4	98.7	74.2	4.5	
Terminal equipment	21	22249.3	22177.0	71.0	1.3	15	4779.9	4593.5	181.1	5.3	185	892.2	269.3	532.7	90.2	

### 9. Provision of Services Per District

There is a trend to concentrate in larger cities.

As for the number of carriers providing services in each district, there is an overall trend to concentrate in districts containing larger cities, such as Tokyo, Kanto, Kinki, and Tokai. However, the disparity of services according to districts is not so noticeable.

Table 9.1 Number of Service Provider Carriers Per District

(Companies, percent)

District	Tokyo	Kanto	Shin- etsu	Tokai	Hoku- riku	Kinki	Chu- goku	Shi- koku	Kyu- shu	Toho- ku	Hokkai- do	Oki- nawa	Other, unknown	Total
Type I carriers	14 10.0	15 10.7	13 8.2	11 7.8	8 5.5	14 10.0	11 7.8	10 7.0	15 10.7	15 10.7	7 4.9	7 4.9	1 0.7	141 100
Special type II carriers	23 9.6	20 8.4	18 7.5	20 8.4	18 7.5	22 9.2	19 7.9	18 7.5	19 7.9	18 7.5	19 7.9	16 8.6	10 4.1	240 100
General type II carriers	147 12.2	124 10.3	89 7.3	119 9.9	85 7.0	124 10.3	86 7.1	83 6.8	103 8.6	95 7.9	85 7.8	46 3.8	11 0.9	1207 100
Broadcast carriers	20 12.5	24 14.9	7 4.3	16 10.0	9 5.5	18 11.2	11 6.9	5 3.1	23 14.3	20 12.5	4 2.4	4 2.4	0 0	161 100
CATV carriers	10 8.2	17 15.6	14 12.9	19 17.5	3 2.7	10 9.2	6 5.5	6 5.5	10 9.2	9 8.2	4 3.6	1 0.9	0 0	109 100

Note: Total numbers of companies are counted separately for each district.

IV. Data Tables

Table. Amount of Investments in Plant and Equipment Acquired

(Y million, percent)

Category	Number of companies	FY 1988 (Actual)		FY 1989 (Planned)		FY 1990 (Reference)	Comparison	
		First half	Second half	First half	Second half		1989/1988	Second half 89/88
Telecommunications businesses	397	317,354	189,840	383,206	219,007	315,750	122.3	131.9
Type I carriers	50	192,034	119,958	232,861	128,074	259,870	121.3	145.4
Type II carriers	347	125,320	69,882	155,345	91,803	55,880	124.0	100.2
Special type II carriers	22	97,088	56,020	119,653	70,835	23,702	123.2	118.9
General type II carriers	325	28,232	13,862	35,692	21,058	32,178	126.4	101.8
Broadcast businesses	228	135,121	84,181	152,593	95,436	115,814	112.9	112.2
Broadcast carriers	134	103,126	64,248	109,581	67,392	77,325	106.3	108.5
CATV carriers	94	31,995	19,933	43,012	28,044	38,489	134.4	124.1
Total	625	452,475	274,021	540,799	315,403	431,564	119.5	126.3

Note: • NTT and KDD are not included in calculations.

• The investments in plant and equipment planned for FY 1990 are just shown as reference because many companies could not respond to the questionnaire because their plans were not determined as of September 1989.

(Reference)

(Y million, percent)

Category	Number of companies	FY 1988 (Actual)		FY 1989 (Planned)		FY 1990 (Reference)	Comparison	
		First half	Second half	First half	Second half		1989/1988	Second half 89/88
NTT Corporation	1,712,820	1,012,651	700,169	1,700,000		Not determined	99.3	-
KDD Co., Ltd.	56,893	27,608	29,285	64,200	38,600	Not determined	112.8	92.7

Table. Composition of Investments Based on Purposes

(%)

Item	(Telecommunications businesses)															
	Total telecommunications carriers (399 companies)				Type I carriers (52 companies)			Total type II carriers (347 companies)			Special type II carriers (22 companies)			General type II carriers (325 companies)		
	FY 1988	FY 1989	FY 1990		FY 1988	FY 1989	FY 1990	FY 1988	FY 1989	FY 1990	FY 1988	FY 1989	FY 1990	FY 1988	FY 1989	FY 1990
To meet increase in demand	71.4	74.0	83.0		72.5	79.1	87.3	70.0	66.0	62.6	74.0	69.9	70.5	55.1	54.0	52.4
To meet Japanese demand	65.9	67.9	81.4		72.5	79.1	87.3	55.8	51.2	53.9	56.6	50.5	57.3	52.8	52.9	51.4
To meet overseas demand	4.6	5.2	1.5	0.0	0.0	0.0	0.0	11.9	12.6	8.2	14.0	16.7	19.2	1.3	0.4	0.1
Distinction unknown	0.9	0.9	0.1	0.0	0.0	0.0	0.0	2.3	2.2	0.5	2.6	2.7	0.0	1.0	0.7	0.9
To deal with ISDN	1.4	2.3	0.5	2.1	1.9	0.0	0.0	0.4	3.0	2.0	0.5	3.6	3.5	0.1	0.8	2.2
To deal with OSI	0.2	0.3	0.1	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.5	0.8	0.4	0.7	0.6	0.8
Maintenance and servicing	3.5	3.2	1.7	1.6	0.5	0.3	0.3	6.4	7.3	8.1	5.9	6.0	5.2	8.2	11.5	10.2
Updating (replacing superannuated equip.)	1.1	1.3	1.0	0.2	0.3	0.2	0.2	2.4	2.8	5.0	1.3	1.9	2.2	6.1	5.9	7.0
R&D	1.8	1.7	1.4	0.4	0.4	0.4	0.0	3.8	3.6	7.9	2.3	2.6	3.8	9.1	7.0	10.9
To rationalize and save labor	1.1	1.1	1.5	0.2	0.2	1.0	1.0	2.4	2.5	3.9	1.1	1.0	1.1	6.7	7.7	6.0
To improve safety and reliability	3.0	4.3	3.4	0.4	1.3	2.8	2.8	7.0	8.7	6.2	7.6	9.2	5.8	5.1	7.0	6.5
Other	16.5	11.8	7.4	22.6	16.3	8.4	8.4	7.1	5.3	2.9	6.8	5.2	1.5	8.0	5.5	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table. Details of Plant and Equipment Investment by Item

(Telecommunications businesses, 52 companies) (%)

Item	Type I carriers		
	FY 88	FY 89	FY 90
Transmission line plant and equipment	25.2	33.1	40.4
Repeating system plant & equipment	3.1	6.2	5.2
Terminal system plant & equipment	22.1	26.9	35.2
Communications satellite plant and equipment	5.3	4.5	0.1
Transmission plant and equipment	13.9	17.5	16.8
Switching plant and equipment	11.4	9.5	2.4
Computers	1.4	1.4	0.5
Terminal equipment plant and equipment	16.0	13.6	24.3
Power supply plant and equipment	4.1	4.8	2.2
Land, buildings, constructions	14.0	7.4	2.8
Other	8.3	7.8	10.0
Total	100.0	100.0	100.0

Table. Details of Plant and Equipment Investment by Item

(Broadcast businesses)

(%)

Item	Total broadcast business (228 companies)			Broadcast carriers (134 companies)			CATV carriers (94 companies)		
	FY 88	FY 89	FY 90	FY 88	FY 89	FY 90	FY 88	FY 89	FY 90
Construction of buildings, (station buildings, etc.)	11.1	13.6	9.9	13.8	17.7	20.4	2.2	3.1	2.2
Auxiliary plant and equipment, accessories, etc.	9.2	8.8	6.1	11.0	11.1	10.3	3.2	3.1	3.0
Studio equipment	25.0	27.1	21.0	29.4	33.0	38.6	10.8	11.8	8.1
Transmission lines and antennas	20.5	26.4	43.9	3.5	5.7	3.9	75.5	79.0	73.3
Laying of cables, etc.	0.9	0.4	5.9	0.0	0.0	0.0	4.0	1.5	10.2
R&D	0.3	0.2	0.1	0.2	0.2	0.3	0.5	0.3	0.0
Other	33.0	23.5	13.1	42.1	32.3	26.5	3.8	1.2	3.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table. Plant and Equipment Investment by District  
(Type I Telecommunications Business)

(Y million, %)

District	FY 88	FY 89	FY 90
Hokkaido	576 ( 0.3)	13,506 ( 5.8)	17,151 ( 6.6)
Tohoku	4,801 ( 2.5)	22,122 ( 9.5)	5,457 ( 2.1)
Kanto	41,288 (21.5)	49,598 (21.3)	44,178 (17.0)
Tokyo	53,385 (27.8)	35,395 (15.2)	57,432 (22.1)
Shin-etsu	2,112 ( 1.1)	15,602 ( 6.7)	13,773 ( 5.3)
Tokai	8,449 ( 4.4)	23,985 (10.3)	25,727 ( 9.9)
Hokuriku	384 ( 0.2)	2,329 ( 1.0)	17,151 ( 6.6)
Kinki	43,593 (22.7)	23,985 (10.3)	44,958 (17.3)
Chugoku	25,156 (13.1)	17,697 ( 7.6)	11,174 ( 4.3)
Shikoku	1,728 ( 0.9)	9,314 ( 4.0)	7,796 ( 3.0)
Kyushu	9,986 ( 5.2)	19,095 ( 8.2)	14,813 ( 5.7)
Okinawa	576 ( 0.3)	233 ( 0.1)	260 ( 0.1)
Total	192,034 (100 )	232,861 (100)	259,870 (100 )

Table. Situation of Long-Term Capital Procurement and Employment (Y million, %)

Item	Type I business				Special type II business				General type II business									
	Achievement FY 88		Plan FY 89		Achievement FY 88		Plan FY 89		Achievement FY 88		Plan FY 89							
	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent	Amount	Percent						
Long-term capital employment	Funds for plant and equipment investment	182,136	95.8	240,302	106.0	131.9	106.0	155,179	94.9	44,207	90.9	28.5	44,384	34.8	56,700	49.6	127.7	
	Investments and loans	3,934	2.1	▲ 701	▲ 0.3	-	▲ 0.4	▲ 812	▲ 0.4	183	0.4	-	15,385	12.1	17,105	15.0	111.2	
	To affiliated Japanese companies	1,445	0.8	41	0	2.8	▲ 0.5	▲ 888	▲ 0.5	53	0.1	-	7,396	5.8	8,390	7.3	113.4	
	Direct overseas investments	0	0	0	0	-	0	0	0	15	0	-	712	0.6	2,600	2.3	365.2	
	Other	2,489	1.3	▲ 742	▲ 0.3	-	76	0.1	115	0.3	115	0.3	151.3	7,277	5.7	6,115	5.4	84.0
	Transfer to short-term funds	4,008	2.1	▲ 12,990	▲ 5.7	-	9,058	5.5	4,253	8.7	4,253	8.7	47.0	07,629	53.1	40,589	35.4	60.0
	Total	190,078	100	228,611	100	154.8	100	163,425	100	48,643	100	29.8	127,398	100	114,394	100	89.8	
	Stock	40,927	21.5	17,740	7.8	43.3	2,900	1.7	4,010	8.2	138.3	16,214	12.7	8,049	7.0	49.6		
	Direct overseas investments and loans	1,050	0.6	1,212	0.5	115.4	36	0	190	0.4	527.8	0	0	0	0	0	0	
	Corporate bonds	0	0	0	0	-	▲ 350	▲ 0.2	▲ 300	▲ 0.2	▲ 300	▲ 0.6	-	31,270	24.5	7,864	6.9	25.1
Long-term fund procurement	Domestic straight bond	0	0	0	0	-	▲ 350	▲ 0.2	▲ 300	▲ 0.6	-	0	0	0	0	0	0	
	Domestic convertible bond	0	0	0	0	-	0	0	0	0	0	-	22,333	17.5	3,214	2.8	14.4	
	Domestic warrant bond	0	0	0	0	-	0	0	0	0	0	-	23	0	▲ 46	0	-	
	Foreign bond	0	0	0	0	-	0	0	0	0	0	-	8,014	7.0	4,696	4.1	52.7	
	Borrowing	131,243	69.0	165,108	72.9	125.8	50,441	30.9	▲ 24,797	▲ 51.0	-	-	31,178	24.5	42,047	37.5	137.4	
	Government financial institutions	52,707	27.7	59,055	26.1	112.0	624	0.4	660	1.4	105.8	688	0.5	1,132	1.0	169.2		
	Private financial institutions	77,390	40.7	101,843	44.9	131.6	49,631	30.4	▲ 20,780	▲ 55.1	-	29,974	23.5	41,871	36.6	139.7		
	Other	1,146	0.6	4,210	1.9	367.4	186	0.1	1,323	2.7	711.3	535	0.4	▲ 156	▲ 0.1	-		
	Foreign currency	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	
	Own funds	17,903	9.5	43,763	19.3	244.4	110,434	67.6	69,730	143.4	63.1	48,730	38.3	55,634	48.6	114.2		
Depreciation	31,034	16.3	42,424	18.7	136.7	74,109	45.3	24,239	44.8	32.7	14,183	11.1	16,249	14.2	114.7			

Note: NTT and KDD are not included in calculations.

Table. Status of Long-Term Capital Procurement and Employment

(Y million, %)

Item	Broadcast business					CATV business					
	Achievement FY 88		Plan FY 89			Achievement FY 88		Plan FY 89			
	Amount	Percent	Amount	Percent	Comparison with FY 88	Amount	Percent	Amount	Percent	Comparison with FY 88	
Long-term capital employment	Funds for plant and equipment investments	82,923	73.2	128,382	86.0	154.8	29,383	79.5	39,070	91.4	133.0
	Investments and loans	12,102	10.7	9,708	6.5	80.2	3,360	9.1	3,558	8.3	105.9
	To affiliated Japanese companies	3,784	3.3	▲ 621	▲ 0.5	-	1,122	3.0	390	0.9	34.8
	Direct overseas investments	0	0	2,019	1.4	0	94	0.3	▲ 50	▲ 0.1	-
	Other	8,338	7.4	8,310	5.6	99.7	2,144	5.8	3,218	7.5	150.1
	Transfer to short-term funds	18,224	16.1	11,189	7.5	61.4	4,194	11.4	137	0.3	3.3
<b>Total</b>	<b>113,249</b>	<b>100</b>	<b>149,279</b>	<b>100</b>	<b>131.8</b>	<b>36,937</b>	<b>100</b>	<b>42,765</b>	<b>100</b>	<b>115.8</b>	
Long-term fund procurement	Stock	2,909	2.6	24,895	16.7	855.8	2,351	6.3	2,497	5.8	106.2
	Direct overseas investments and loans	0	0	0	0	-	0	0	0	0	-
	Corporate bonds	2,484	2.2	97	0.1	▲ 96.1	0	0	0	0	-
	Domestic straight bond	890	0.8	97	0	▲ 89.1	0	0	0	0	-
	Domestic convertible bond	0	0	0	0	-	0	0	0	0	-
	Domestic warrant bond	0	0	0	0	-	0	0	0	0	-
	Foreign bond	1,594	1.4	0	0	0	0	0	0	0	-
	Borrowing	6,601	5.8	15,552	10.4	235.6	24,441	66.2	28,507	66.7	116.6
	Government financial institutions	1,290	1.1	2,037	1.3	157.9	9,777	26.5	12,835	30.2	132.3
	Private financial institutions	3,250	2.9	8,476	5.7	260.8	9,361	25.3	9,631	22.5	102.8
	Other	194	0.2	5,039	3.4	2597.4	4,644	12.6	5,741	13.4	123.6
Foreign currency	0	0	0	0	-	659	1.8	200	0.8	30.3	
Own funds	101,255	89.4	108,735	72.8	107.4	10,145	27.5	11,761	27.5	115.9	
Depreciation	37,223	32.9	42,553	28.5	114.3	4,664	12.6	0,017	14.1	129.0	

Table. Problems in Management (Broken down by capital)

(%)

Item	Type I carriers				Special type II carriers			General type II carriers					
	Below Y1 billion	Y1 - Y10 billion	Y10 billion or more	Below Y100 million	Y500 mil - Y1 billion	Y1 billion or more	Below Y50 million	Y50-100 million	Y500 mil - Y1 billion	Y1 billion or more	Y500 mil - Y1 billion	Y1 billion or more	
													23.1
Excessive burden of plant and equipment investments	23.8	23.1	23.5	25.8	20.3	33.3	11.7	21.9	11.3	8.0	9.1	13.8	13.1
Excessive burden of investments in software development	2.3	1.2	5.8	3.2	1.5	0.0	0.0	2.4	10.4	11.1	12.6	9.3	9.6
Excessive burden of investments for safety and reliability	4.6	3.6	5.8	6.4	6.2	0.0	5.8	7.3	4.8	3.3	9.1	3.3	8.7
Excessive burden of circuit fees	18.4	20.7	17.6	12.8	12.5	16.6	5.8	14.6	7.7	6.0	5.7	8.6	9.6
Difficulty in capital procurement	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	3.3	2.2	1.4	1.7
Lack of engineers	10.7	6.0	17.6	19.3	15.6	16.6	17.6	14.6	16.4	15.6	19.5	15.7	17.5
Treatment of middle-aged and older engineers	0.7	0.0	0.0	3.2	1.5	0.0	0.0	2.4	0.2	0.0	0.0	0.7	0.0
Trend of dumping due to excessive competition	7.6	8.5	0.0	9.6	10.9	0.0	11.7	12.1	4.7	1.8	5.7	7.1	5.2
Difficulty in acquisition of new customers	10.7	10.9	11.7	9.6	10.9	0.0	17.6	9.7	15.6	17.1	16.0	15.3	12.2
Low percentage of regular customers	0.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	3.5	4.8	3.4	1.8	4.3
Trend of entry by big businesses into industry	0.7	0.0	0.0	3.2	0.0	0.0	0.0	0.0	3.2	4.8	3.4	2.2	1.7
Unstable market and violent changes of prosperity and recession	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	1.7
Enhancement of service menu	13.8	17.0	11.7	6.4	14.0	33.3	17.6	9.7	11.3	13.7	9.1	11.2	7.8
Lack of matching of communications protocols between manufacturers	1.5	2.4	0.0	0.0	3.1	0.0	0.0	4.8	4.0	3.7	2.2	4.8	4.3
Financial difficulty	0.7	1.2	0.0	0.0	0.0	0.0	0.0	0.0	2.0	2.9	1.1	1.4	1.7
Others	3.0	3.6	5.8	0.0	3.1	0.0	11.7	0.0	1.6	1.8	0.0	2.6	0.0
Total	100	100.0	100.0	100.0	100	100.0	100.0	100.0	100	100.0	100.0	100.0	100.0

Table. Problems of Management (Broken down by capital)

(%)

Item	Broadcast carriers			CATV carriers				
	13.4	Below Y1	Y1 billion	22.9	Below Y50	Y50-100	Y100,000	Y1 bil
		billion	or more		million	million	1 billion	ion or more
Excessive burden of plant and equipment investments	13.4	10.9	16.9	22.9	15.9	29.5	24.6	21.9
Excessive burden of investments into software development	1.5	2.4	0.0	1.2	3.2	0.0	1.5	0.0
Difficulty in capital procurement	0.3	0.5	0.0	2.0	3.2	3.3	1.5	0.0
Lack of engineers	2.7	2.4	3.1	6.3	7.9	8.2	4.6	4.7
Treatment of middle-aged and older engineers	6.4	5.3	7.7	1.6	3.2	3.3	0.0	0.0
Difficulty in acquisition of new customers	13.7	18.6	5.4	13.8	9.5	16.4	13.8	15.6
Low percentage of regular customers	3.0	1.9	4.6	0.8	1.8	0.0	1.5	0.0
Unstable market and violent changes in prosperity, recession	7.9	7.8	7.7	0.4	0.0	0.0	1.5	0.0
Enhancement of service menu	4.9	2.9	7.7	9.5	14.3	0.0	15.4	7.8
Heavy burden of program production and purchase costs	25.2	20.6	31.5	19.0	19.0	14.8	18.5	23.4
Heavy burden of street occupation utility pole installation fees	0.0	0.0	0.0	10.7	12.7	8.2	7.7	14.1
Difficulty in acquisition of income from publicity, advertising	13.7	18.2	6.1	3.6	3.2	8.2	3.1	0.0
Financial difficulty	1.5	2.4	0.0	6.3	4.8	6.6	4.8	8.4
Other	5.8	6.3	9.3	2.0	1.5	1.5	1.7	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table. Perspective of Environment of Plant and Equipment Investments

(%)

Comparison with previous period	Type I telecommunications business			Special type II telecommunications bus.			General type II telecommunications bus.			Broadcast business			CATV business		
	In-crease	Con-stant	De-crease	In-crease	Con-stant	De-crease	In-crease	Con-stant	De-crease	In-crease	Con-stant	De-crease	In-crease	Con-stant	De-crease
First half FY 88	83.4	16.6	0.0	85.8	9.5	4.7	49.9	46.9	3.2	75.3	21.4	3.3	40.5	58.3	1.2
Second half FY 88	30.0	20.0	0.0	81.1	4.7	14.2	52.9	43.2	3.9	67.0	30.6	2.4	39.2	55.8	5.0
First half FY 89	73.0	27.0	0.0	68.3	18.1	13.6	54.9	41.1	4.0	58.9	37.9	3.2	42.1	45.9	12.0
Second half FY 89	56.3	39.6	4.1	74.0	21.7	4.3	56.5	40.8	2.7	26.4	58.4	15.2	54.2	40.0	5.8
Total	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100

Table. Probability of Change of Plant and Equipment Investments

	Type I	Special type II	General type II	Broadcast	CATV
Increase	21.1	17.3	34.3	17.0	38.6
Constant	77.0	69.7	60.1	79.2	58.0
Decrease	1.9	13.0	5.6	3.8	3.4
Total	100.0	100.0	100.0	100.0	100.0

Table. Status of Employees

Category	Total employees	Number of companies		Supplementary personnel			Transferred staff		
			Percent		Percent	Average		Percent	Average
Type I	Below 10	14	28.0	24	1.8	1.7	36	4.8	2.5
	10-99	27	54.0	271	20.4	10.4	159	21.3	6.1
	100-499	7	14.0	414	31.1	59.1	390	52.4	55.7
	500 or more	2	4.0	622	46.7	311	160	21.5	80.0
	Total	50	100.0	1331	100.0	26.6	745	100.0	14.9
Special type II	Below 10	1	4.5	0	0.0	0.0	0	0.0	0.0
	10-99	11	50.0	90	14.2	8.2	119	8.4	10.8
	100-499	6	27.3	148	23.4	24.7	473	33.4	78.8
	500 or more	4	18.2	395	62.4	98.8	825	58.2	206.3
	Total	22	100.0	633	100.0	28.7	1417	100.0	64.4
General type II	Below 10	151	58.3	63	6.1	0.4	212	4.8	1.4
	10-99	81	31.3	215	20.7	2.7	493	11.1	6.1
	100-499	23	8.9	458	44.0	19.9	390	8.8	17.0
	500 or more	4	1.5	304	29.2	76.0	3357	75.3	839.2
	Total	259	100.0	1040	100.0	4.0	4452	100.0	17.1
Broadcast	Below 10	10	7.6	7	0.8	0.7	42	3.0	4.2
	10-99	45	34.1	154	17.3	3.4	192	13.6	4.3
	100-499	68	51.5	451	50.7	6.6	652	46.4	9.6
	500 or more	9	6.8	278	31.2	30.9	521	37.0	57.9
	Total	132	100.0	890	100.0	6.7	1407	100.0	10.6
CATV	Below 10	41	49.4	34	19.1	0.8	97	48.3	2.3
	10-99	42	50.6	144	80.9	3.4	104	51.7	2.5
	100-499	0							
	500 or more	0							
	Total	8.3	100.0	178	100.0	2.1	201	100.0	2.4

Note: NIT and KDD are not included in calculations.

Table. Status of Plant and Equipment Possessed  
Overall Telecommunications Businesses(I)

Category	Purchased			Leased		
	Car-riers	Units	Average/ carrier	Car-riers	Units	Average/ carrier
Computers	103	997	9.6	202	1409	6.9
Large	19	50	2.6	56	135	2.4
Medium	38	216	5.6	86	168	1.9
Small	38	282	7.4	75	314	4.1
Mini	47	449	9.5	74	790	10.6
Exchange	48	613	12.7	36	431	11.9
Trunk switch	38	310	8.1	25	149	5.9
Local switch	39	296	7.5	28	233	8.3
Multiplexer	49	3,785	77.2	56	644	11.5
Line concentrator	35	4,957	141.6	36	2502	69.5
Terminal equipment	96	476,695	4965.5	113	57168	505.9

Overall Telecommunications Businesses (II)

Category	Rented			Total		
	Car-riers	Units	Average/ carrier	Car-riers	Units	Average/ carrier
Computers	68	224	3.2	130	1384	10.6
Large	32	86	2.6	87	287	3.2
Medium	34	94	2.7	122	462	3.7
Small	14	29	2.0	97	586	6.0
Mini	5	15	3.0	97	976	10.0
Exchange	4	28	7.0	71	1062	14.9
Trunk switch	4	22	5.5	55	475	8.6
Local switch	3	11	3.6	59	529	8.9
Multiplexer	4	22	5.5	101	4374	43.3
Line concentrator	7	32	4.5	70	7550	107.8
Terminal equipment	12	1003	83.5	159	409470	2575.2

Table. Status of Plant and Equipment Possessed  
Type I Telecommunications Businesses (I)

Category	Purchased			Leased		
	Carriers	Units	Average/ carrier	Carriers	Units	Average/ carrier
Computers	22	97	4.4	24	128	5.3
Large	2	3	1.5	1	1	1.0
Medium	5	24	4.8	7	9	1.2
Small	13	21	1.6	10	11	1.1
Mini	10	49	4.9	10	107	10.7
Exchange	18	239	13.2	2	3	1.5
Trunk switch	16	99	6.1	0	0	0.0
Local switch	14	115	8.2	0	0	0.0
Multiplexer	11	2577	234.2	0	0	0.0
Line concentrator	4	197	49.2	1	19	19.0
Terminal equipment	19	421363	22177.0	2	142	71.0

Type I Telecommunications Businesses (II)

Category	Rented			Total		
	Carriers	Units	Average/ carrier	Carriers	Units	Average/ carrier
Computers	3	4	1.3	12	57	4.7
Large	1	2	2.0	4	6	1.5
Medium	0	0	0.0	10	32	3.2
Small	1	1	1.0	16	28	1.7
Mini	1	1	1.0	13	148	11.3
Exchange	0	0	0.0	15	238	15.8
Trunk switch	0	0	0.0	13	95	7.3
Local switch	0	0	0.0	10	110	11.0
Multiplexer	0	0	0.0	10	2527	252.7
Line concentrator	0	0	0.0	3	213	71.0
Terminal equipment	0	0	0.0	15	297045	19803.0

Table. Status of Plant and Equipment Possessed  
Special Type II Telecommunications Businesses (I)

Category	Purchased			Leased		
	Carriers	Units	Average/ carrier	Carriers	Units	Average/ carrier
Computers	12	91	7.5	13	135	10.3
Large	5	22	4.4	8	31	3.8
Medium	6	26	4.3	7	32	4.5
Small	3	14	4.6	7	12	1.7
Mini	4	29	7.2	2	60	30.0
Exchange	13	158	12.1	9	111	12.3
Trunk switch	10	67	6.7	6	43	7.1
Local switch	6	99	16.5	4	63	15.7
Multiplexer	10	900	90.0	6	160	26.6
Line concentrator	11	2785	253.1	5	256	51.2
Terminal equipment	8	36748	4593.5	6	1087	181.1

Special Type II Telecommunications Businesses (II)

Category	Rented			Total		
	Carriers	Units	Average/ carrier	Carriers	Units	Average/ carrier
Computers	5	22	4.4	10	203	20.3
Large	4	13	3.2	11	66	6.0
Medium	1	9	9.0	10	67	6.7
Small	0	0	0.0	8	26	3.2
Mini	0	0	0.0	3	87	29.0
Exchange	0	0	0.0	16	266	16.6
Trunk switch	0	0	0.0	12	109	9.0
Local switch	0	0	0.0	9	162	18.0
Multiplexer	0	0	0.0	15	1060	70.6
Line concentrator	0	0	0.0	15	3039	202.6
Terminal equipment	1	10	10.0	10	37840	3784.0

Table. Status of Plant and Equipment Possessed  
General Type I Telecommunications Businesses (I)

Category	Purchased			Leased		
	Carriers	Units	Average/ carrier	Carriers	Units	Average/ carrier
Computers	69	809	11.7	165	1146	6.9
Large	12	25	2.0	47	103	2.1
Medium	27	166	6.1	72	127	1.7
Small	22	247	11.2	58	291	5.0
Mini	33	371	11.2	62	623	10.0
Exchange	17	216	12.7	25	317	12.6
Trunk switch	12	144	12.0	19	106	5.5
Local switch	19	82	4.3	24	170	7.0
Multiplexer	28	308	11.0	50	484	9.6
Line concentrator	20	1975	98.7	30	2227	74.2
Terminal equipment	69	18584	269.3	105	55939	532.7

General Type I Telecommunications Businesses (II)

Category	Rented			Total		
	Carriers	Units	Average/ carrier	Carriers	Units	Average/ carrier
Computers	60	198	3.3	108	1124	10.4
Large	27	71	2.6	72	215	2.9
Medium	33	85	2.5	102	363	3.5
Small	13	28	2.1	73	532	7.2
Mini	4	14	3.5	81	741	9.1
Exchange	4	28	7.0	40	558	13.9
Trunk switch	4	22	5.5	30	271	9.0
Local switch	3	11	3.6	40	257	6.4
Multiplexer	4	22	5.5	76	787	10.3
Line concentrator	7	32	4.5	52	4298	82.6
Terminal equipment	11	993	90.2	134	74585	556.6

Table. Number of Carriers Entering Business Each Year

Year business started	Type II tele-communications business	Special type II tele-communications business	General type II tele-communications business
Before 1985	3	4	39
First half 85	0	2	14
Second half 85	0	1	17
First half 86	0	2	26
Second half 86	6	1	20
First half 87	1	2	24
Second half 87	15	3	18
First half 88	5	1	27
Second half 88	4	3	16
First half 89	14	2	23

## V. Research Forms

- For telecommunications business carriers (Explanation form)
- For telecommunications business carriers (Research form)
- For broadcast business carriers (Explanation form)
- For broadcast business carriers (Research form)

**Survey on Status of Plant and Equipment  
Investments in Communications Industry  
--As of 1 September 1989--**

September 1989  
Ministry of International Trade and Industry

The following research is conducted in order to identify the trend of investments in plant and equipment, etc., related to the businesses overseen by the Ministry of Posts and Telecommunications (MPT) (telecommunications, broadcast, CATV broadcast) by their carriers. The results obtained will be used as material in the administration of communications by the MPT.

The object of this research covers all companies which are carriers of the businesses overseen by the MPT.

This research is carried out directly by the MPT, so the contents will be kept confidential.

We will appreciate your efforts if, in consideration of the objective of this research, you can kindly answer the questionnaire and forward your answers before 11 September 1989.

### Research Form Entry Method

(General)

1. Research timing  
As of 1 September 1989.
2. Number of research forms to be submitted  
One copy of the research form on "Research Into Status of Plant and Equipment Investments in Communications Industry."
3. Monetary unit  
Million yen (round off the fractions below this unit).
4. Distinction of years  
Fiscal year (from 1 April to 31 March of the next year).

5. Submission closing date  
11 September 1989 (Please observe this date to help arrange the research results as soon as possible).

6. Submission destination  
Telecommunications Industry Promotion Office,  
Telecommunications Policy Bureau,  
Ministry of Posts and Telecommunications  
(Please use the reply envelope enclosed.)  
Postal code: 100-90  
3-2, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo  
Telephone: 03(504)4788 (direct)

(Notes to be observed in entry of research form)

The item numbers below correspond to those used in the research form.

#### 1. Businesses

The "businesses" referred to by this research are defined as follows:

Category	Definition
Type 1 telecommunications business	Business which provides telecommunications services by installing telecommunications line plant and equipment.
Special type II telecommunications business	Among the type II telecommunications businesses providing telecommunications plant and equipment to undefined multiple number of people, the business which provides plant and equipment with larger scale than the standard scale defined in government ordinances, or the business which provides the users with the plant and equipment for communications with locations outside Japan.
General type II telecommunications business	Type II telecommunications business other than special type II telecommunications business.
Broadcast business	Business dealing with the transmission of radio communications for direct reception by the public.
CATV broadcast business	Cable broadcast business other than the cable radio broadcast business as specified in Article 2 of the Law regulating the operation of cable radio broadcast business.

### 3. Investments in plant and equipment acquired broken down by purpose

(1) For the investment purpose "to meet the increase in demand," enter the amounts and percentages of both types of plant and equipment investments "To meet Japanese demand" and "To meet increase in overseas demand." In case category distinction is difficult, please allot the investment amount of your company to these two categories based on the weighing of the present plan (of sales, etc.). Enter in the category of "Distinction unknown" only in unavoidable cases, for example, if the related plan is not established at present or with peripheral plant and equipment whose purpose cannot be distinguished clearly.

Investment purpose	Categorization reference
To meet increase in demand	Construction of buildings, addition of machinery and equipment, etc., to expand the service provision capabilities.
To deal with ISDN	Plant and equipment investments to replace existing networks with ISDN.
To deal with OSI	Plant and equipment investments to make existing systems compatible with OSI.
Maintenance and servicing	Partial repair works, etc., applied to buildings, machinery and equipment, etc., without replacing their main structures.
Updating (replacing superannuated equipment)	Reconstruction of buildings, etc., or replacement of machinery and equipment, due to superannuation or obsolescence.
R&D	Installation of equipment and introduction of machinery and equipment, etc., for research and development (basic research, applied research, development research) as main purposes.
To rationalize and save labor	Introductions of plant and equipment, etc., which do not cause extreme increase of service provision capability but contribute to cost reduction (investments for rationalization and labor saving in business departments as the main purposes, such as introduction of office automation, computers, etc.).
To improve safety and reliability	Addition of machinery and equipment for the safety and reliability improvements in normal plant and equipment.

(2) The investment purposes are to be categorized according to the reference shown below. Any purpose which cannot be categorized into one of the purposes

presented below is to be categorized in "Other." In this case, please provide a short description of the investment purpose(s) inside ( ).

**4. Investments in plant and equipment broken down by item**

The investment items are to be categorized according to the reference shown below. Any item which cannot be categorized into one of the items presented below is to be categorized in "Other." In this case, please provide a short description of the investment item(s) inside ( ).

Investment purpose	Categorization reference
Repeating system plant and equipment	Communication cables, conduit lines, and other supports making up the repeating system transmission line plant and equipment.
Terminal system plant and equipment	Communication cables, conduit lines, and other supports making up the terminal system transmission line plant and equipment (including mobile transceivers and mobile terminals associated with mobile telecommunications services).
Communications satellite plant and equipment	Communication satellites installed on stationary orbits.
Transmission plant and equipment	Terminal repeater equipment, multiplexer, line termination equipment, subscriber accommodation equipment, and other local plant and equipment (including base station plant and equipment related to mobile telecommunications services).
Switching plant and equipment	Switches and plant and equipment connected to them.
Computers	Computers for use in monitoring control, etc., related directly with the administration and maintenance of telecommunications equipment.
Terminal plant and equipment	Terminal plant and equipment installed by telecommunications business carriers.
Power supply plant and equipment	Normal and reserve power supply plant and equipment related directly to administration and maintenance of telecommunications plant and equipment.
Land, buildings, construction	All lands, buildings, and other structures.
Other	Items which cannot be categorized into the items above.

## 5. Plant and equipment investments per prefecture

When entering the "Prefecture No.," refer to the "Prefecture Number List" below.

No.	Prefecture	No.	Prefecture	No.	Prefecture
01	Hokkaido	17	Ishikawa-ken	33	Okayama-ken
02	Aomori-ken	18	Fukui-ken	34	Hiroshima-ken
03	Iwate-ken	19	Yamanashi-ken	35	Yamaguchi-ken
04	Miyagi-ken	20	Nagano-ken	36	Tokushima-ken
05	Akita-ken	21	Gifu-ken	37	Kagawa-ken
06	Yamagata-ken	22	Shizuoka-ken	38	Ehime-ken
07	Fukushima-ken	23	Aichi-ken	39	Kochi-ken
08	Ibaraki-ken	24	Mie-ken	40	Fukuoka-ken
09	Tochigi-ken	25	Shiga-ken	41	Saga-ken
10	Gunma-ken	26	Kyoto-fu	42	Nagasaki-ken
11	Saitama-ken	27	Osaka-fu	43	Kumamoto-ken
12	Chiba-ken	28	Hyogo-ken	44	Ooita-ken
13	Tokyo-to	29	Nara-ken	45	Miyazaki-ken
14	Kanagawa-ken	30	Wakayama-ken	46	Kagoshima-ken
15	Niigata-ken	31	Tottori-ken	47	Okinawa-ken
16	Toyama-ken	32	Shimane-ken		

## 6. Long-term capital procurement and employment condition

(1) For the content of each of the long-term capital procurement and employment condition (based on net increase/decrease), please refer to the following description.

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Capital procurement/ employment item	Description
Funds required for plant and equipment investments	Amount of funds required for plant and equipment investments based on those to be paid in cash.
Investments and loans	Net increase/decrease of long-term investments and loans (those included in fixed assets). (Amount of new investments and loans—recovered amount).
To affiliated companies in Japan	Among "Investments and loans," net increase/decrease of investments and loans for affiliated companies in Japan (regardless of plant and equipment funds or working funds).
Direct overseas investments	Among "Investments and loans," net increase/decrease of investments and loans to affiliated companies overseas (regardless of plant and equipment funds or working funds). (Note) Consider the direct overseas investments based on the amount reported to the Bank of Japan.
Other investments and loans	Among "Investments and loans," net increase/decrease of other investments and loans other than to affiliated companies (financial assets for use in investments, etc.).
Transfer to short-term funds	Among the capital procured for long term, the capital transferred to short-term capital (working funds, etc.). (Note) Inversely, if capital procured for short term is used as long-term capital, the amount becomes negative. In this case, put a "^" in the amount column. This item is for use in the adjustment of total amount of capital procurement.
Stock	Net income by stock issuance, including the premium.
Overseas investments and loans	Among "Stock," payment made from overseas investors.

[Table continued]

[Continuation of table]

Capital procurement/ employment item	Description
Corporate bonds	Net increase/decrease due to issuance of corporate bonds. (Newly issued amount—Redeemed amount).
Domestic straight bond Domestic convertible bond Domestic warrant bond	Net increase/decrease of corporate bonds offered in Japan. (Note) Be careful not to doubly calculate the stock increase after the right of conversion into stock or the warrant (except in case of cash payment) has been exercised.
Foreign bond	Net increase/decrease of bonds and Euroyen bonds which are offered in foreign countries and whose denominations are in foreign currencies.
Borrowing	Net increase/decrease of long-term borrowing from financial institutions. (Newly borrowed amount—Repaid amount).
Governmental financial institutions	Net increase/decrease of borrowing in yen from the Japan Development Bank, Hokkaido-Tohoku Development Corp., Small Business Finance Corp., Central Bank for Commercial and Industrial Cooperative, Environmental Pollution Control Service Corp., Japan Regional Development Corp., etc.
Private financial institutions	Net increase/decrease of borrowing in yen from long-term credit banks (Industrial Bank of Japan, Long-Term Credit Bank of Japan, Nippon Credit Bank), city banks, regional banks, trust banks, insurance companies, foreign banks, insurance companies, foreign banks in Japan, etc. (including mutual savings and loan banks, shinkin banks, Central Cooperative Bank for Agriculture and Forestry).
Other	Net increase/decrease of borrowing in yen from other financial institutions other than the governmental and private financial institutions mentioned above (from the parent company, finance companies, etc.).
Foreign currency borrowing	Net increase/decrease of impact loans via foreign banks in Japan, or borrowing from foreign financial institutions, foreign companies, etc.
Own funds	Total sum of internal reserve, depreciation, etc.

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(2) For investments and loans to affiliated companies (based on invested amounts), enter the amounts of new investments without excluding the capital recoveries in the same fiscal year.

### 7. Status of plant and equipment possessed

The computers are to be categorized as follows.

Category	Purchase price	Monthly rental fee
Large	¥250 million or more	¥5.556 million or more
Medium	¥40 million or more, below ¥250 million	¥889,000 or more, below ¥5.556 million
Small	¥10 million or more, below ¥40 million	¥223,000 or more, below ¥889,000
Mini	Below ¥10 million	Below ¥223,000

### 9. Service districts

For the distinction of the districts, refer to the district distinction list below.

<u>District</u>	<u>Prefectures</u>
Tokyo	Tokyo-to
Kanto	Kanagawa-ken, Saitama-ken, Chiba-ken, Ibaraki-ken, Tochigi-ken, Gunma-ken, Yamanashi-ken
Shin-etsu	Nagano-ken, Niigata-ken
Tokai	Aichi-ken, Mie-ken, Shizuoka-ken, Gifu-ken
Hokuriki	Ishikawa-ken, Fukui-ken, Toyama-ken
Kinki	Osaka-fu, Kyoto-fu, Hyogo-ken, Nara-ken, Shiga-ken, Wakayama-ken
Chugoku	Hiroshima-ken, Tottori-ken, Shimane-ken, Okayama-ken, Yamaguchi-ken
Shikoku	Ehime-ken, Tokushima-ken, Kagawa-ken, Kochi-ken
Kyushu	Kumamoto-ken, Nagasaki-ken, Fukuoka-ken, Saga-ken, Ooita-ken, Miyazaki-ken, Kagashima-ken
Tohoku	Miyagi-ken, Fukushima-ken, Iwate-ken, Aomori-ken, Yamagata-ken, Akita-ken
Hokkaido	Hokkaido
Okinawa	Okinawa-ken
Outside Japan	Areas outside Japan

Handling No.

HANDLE WITH CARE

\*The handling No. will be entered by the MPT.

Management and Coordination Agency: Approval No. 17026
Approval limit date: 31 October 1989
To be submitted to: Ministry of Posts and Telecommunications
To be submitted before: 11 September 1989
Copies to be submitted: 1 copy per company

Research Into Status of Plant and Equipment  
Investments in Communications Industry  
—Research Form for Telecommunications Businesses—

For the entry procedure, please refer to the attached "Research Form Entry Method."

Name of company	
Main office of headquarters address	
Department, office and name of person in charge of entry	Contact: Tele. ( ) _____

Paid up capital (Note 1)	¥ million
Number of employees (Note 2)	persons

(Note 1) If the "capital or organization fund, etc." of your company is below ¥1 million, please assume it as ¥1 million.

(Note 2) For the number of employees, please specify the number of working employees as of 1 September 1989 or of the nearest salary closing date. Do not include temporary workers or staff transmitted from outside the company.

- Before proceeding to the questionnaire, please answer the following question:

Does the amount of plant and equipment investments specified in this research form include the consumption tax? Encircle the number of the proper answer in the following:

1	Yes	2	No
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### 1. Business

Please encircle the number corresponding to the business carried out by your company.

1	Type I telecommunications business
2	Special type II telecommunications business
3	General type II telecommunications business
4	Broadcast business
5	CATV business

### 2. Investments in plant and equipment acquired

Please specify the achieved or planned investments in plant and equipment associated with the business specified above which have been or will be acquired by your company in each fiscal year (please specify the acquisition cost before depreciation of the tangible fixed assets, including construction in progress, in each fiscal term).

Category	Achievement FY 88	Estimated achievement FY 89	Plan FY 1990
Investments in plant and equip- ment acquired	¥ million	¥ million	¥ million
First half	¥ million	¥ million	¥ million
Second half	¥ million	¥ million	¥ million

- (Note 1) Specify only the investments in plant and equipment acquired in relation to the business field in question.
- (Note 2) Be careful not to doubly calculate the amount transferred from "Construction in progress" to the main account.

3. Investments in plant and equipment acquired broken down by purpose

In regard to your achieved or planned investments in plant and equipment which have been or will be acquired in each year, please specify the percentage in amount of money for each of the investment purposes as categorized below.

Category	Achievement FY 88	Estimated achievement FY 89	Plan FY 89
To meet increase in demand	%	%	%
To meet Japanese demand	%	%	%
To meet overseas demand	%	%	%
Distinction unknown	%	%	%
To deal with ISDN	%	%	%
To deal with OSI	%	%	%
Maintenance and servicing	%	%	%
Updating (replacing super-annuated equipment)	%	%	%
R&D	%	%	%
To rationalize and save labor	%	%	%
To improve safety and reliability	%	%	%
Other	%	%	%
Total	100 %	100 %	100 %

(Note) Use approximate values for the percentages. When calculating percentages, assume that the "investments in plant and equipment acquired" in Question 2 above is 100 percent.

Question 4 is to be answered by type I telecommunications carriers only.

4. Investments in plant and equipment acquired broken down by item

In regard to your achieved or planned investments in plant and equipment which have been or will be acquired in each year, please specify the percentage in amount of money for each of the investment items as categorized below.

Category	Achievement FY 88	Estimated achievement FY 89	Plan FY 89
Transmission line plant and equipment	%	%	%
Repeating system plant and equipment	%	%	%
Terminal system plant and equipment	%	%	%
Communications satellite plant and equipment	%	%	%
Transmission plant and equipment	%	%	%
Switching plant and equipment	%	%	%
Computers	%	%	%
Terminal equipment plant and equipment	%	%	%
Power supply plant and equipment	%	%	%
Land, buildings, construction	%	%	%
Other	%	%	%
Total	100 %	100 %	100 %

(Note) Use approximate values for the percentages. When calculating percentages, assume that the "investments in plant and equipment acquired" in Question 2 above is 100 percent.



6. Long-term capital procurement and employment condition

(1) Long-term capital procurement and employment condition (based on net increase)

In regard to the condition of long-term capital procurement and employment of the whole of your company, please specify the amount of money, based on net increase/decrease, in each year of each of the procurement or employment items shown below (refer to "Research Form Entry Method" for their definition).

Category		Achievement FY 88		Estimated achievement FY89		Planned FY 90	
Long-term capital employment	Plant & equipment funds required	Y mil		Y mil		Y mil	
	Investments, loans	Y mil		Y mil		Y mil	
	To affiliated companies in Japan	Y mil		Y mil		Y mil	
	Direct overseas investments	Y mil		Y mil		Y mil	
	Other	Y mil		Y mil		Y mil	
	Transfer to short-term funds	Y mil		Y mil		Y mil	
	Total	Y mil		Y mil		Y mil	
Long-term fund procurement	Stock	Y mil		Y mil		Y mil	
	Overseas investments and loans	Y mil		Y mil		Y mil	
	Corporate bonds	Y mil		Y mil		Y mil	
	Domestic straight bond	Y mil		Y mil		Y mil	
	Domestic convertible bond	Y mil		Y mil		Y mil	
	Domestic warrant bond	Y mil		Y mil		Y mil	
	Foreign bond	Y mil		Y mil		Y mil	
	Borrowing	Y mil		Y mil		Y mil	
	Governmental financial institutions	Y mil		Y mil		Y mil	
	Private financial institutions	Y mil		Y mil		Y mil	
	Other	Y mil		Y mil		Y mil	
	Foreign currency borrowing	Y mil		Y mil		Y mil	
	Own funds	Y mil		Y mil		Y mil	
Depreciation	Y mil		Y mil		Y mil		

(Note 1) The net increase/decrease of long-term capital employment is obtained by subtracting the recovered amount from the invested or or loaned amount, and that of long-term capital procurement is obtained by subtracting the redeemed amount from the issued or borrowed amount. Therefore, if the recovery of investments and loans or the redemption of corporate bonds or borrowing is excessive, the capital employment or procurement amount becomes negative, which should be marked by ^ at the beginning of the amount.

(Note 2) The total of "long-term capital employment" shall be equal to the total of "long-term capital procurement."

(Note 3) For the "Transfer to short-term funds," specify the amount of long-term funds transferred to short-term funds. Inversely, if a short-term fund is transferred to long-term fund, that amount becomes negative and should be marked with ^ at the beginning. This column can be used to arrange the figures so that the employed capital amount procured capital amount coincide with each other.

(2) Investments and loans to affiliated companies (based on invested and loaned amounts)

Please divide the investments and loans to affiliated companies into those for affiliated companies inside Japan and those for overseas affiliated companies (direct overseas investments), and specify the amount of investments and loans (before excluding the recovered capital) for each of the two categories. The calculations are to be based on the moments of payments. (For the planned amounts, please calculate them based on the organizational decisions.)

Category	Achievement FY 88	Estimated achievement FY 89	Plan FY 89
Investments and loans to affiliated companies in Japan	¥ million	¥ million	¥ million
Direct overseas investments	¥ million	¥ million	¥ million

(Notes) Direct overseas investments refer to the following actions:

1. Acquisition of security certificates in foreign currency issued by a foreign corporation, when this results in the possession by your company of 10 percent or more of the total stocks issued by that foreign corporation or of total amount invested for that foreign corporation.
2. In case your company already owns 10 percent or more of the total stocks issued by a foreign corporation, further acquisition of security certificates in foreign currency issued by that foreign corporation, or loan of money with a long term of a year or more to that foreign corporation.
3. In case your company has a permanent relationship with a foreign corporation in the form of lease of a director, supply of raw material for a long period or provision of important manufacturing technology, acquisition of security certificates issued by that foreign corporation or loan of money with a long term of a year or more to that foreign corporation.
4. Payment of funds necessary for introduction, enlargement, etc., of branches, etc. (including direct overseas businesses).

**7. Status of plant and equipment possessed**

Please specify the number of various plant and equipment that your company possesses for use in the business in question (as of the end of March 1989).

Category	Purchased	Leased	Rented	Total
Computers (Note 1)				
Large				
Medium				
Small				
Mini				
Exchange				
Trunk switch				
Local switch				
Multiplexer (Note 2)				
Line concentrator (Note 3)				
Terminal equipment (Note 4)				

(Note 1) For the categories of computers, please refer to "Research Form Entry Method."

(Note 2) Equipment for multiplexing and transmitting telecommunications lines between communication centers or between a communication center, not including the line concentrator.

(Note 3) Equipment installed in the concentration center for use in concentrating telecommunication lines.

(Note 4) Equipment which can send or receive information through communication channels.

**8. Month and year of start of business**

Encircle the number corresponding to the period in which your company started services.

	Service start (month/year)
1	Before FY 85 (~March 1985)
2	First half of FY 85 (April~September 1985)
3	Second half of FY 85 (October 1985~March 1986)
4	First half of FY 86 (April~September 1986)
5	Second half of FY 86 (October 1986~March 1987)
6	First half of FY 87 (April~September 1987)
7	Second half of FY 87 (October 1987~March 1988)
8	First half of FY 88 (April~September 1988)
9	Second half of FY 88 (October 1988~March 1989)
10	First half of FY 89 (April~September 1989)

**9. Number of employees in the related business departments**

Please specify the number of employees in the departments carrying out the business in question.

Category	Persons
Your own staff (Note 1, Note 2)	Persons
Additional personnel (Note 1)	Persons

Staff transferred from external (Note 3)	Persons
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(Note 1) For "Your own staff," specify the number of employees as of 31 March 1989. For "Additional personnel," specify the number of employees who were hired newly in the period from 1 April 1988 to 31 March 1989.

(Note 2) For "Your own staff," specify the number of working employees who receive monthly salary. Do not include temporary workers or staff transferred from outside your company.

(Note 3) For "Staff transferred from external," specify the number of staff as of 31 March 1989.

### 10. Service districts

Mark the districts where your company provides services.

District	Tokyo	Kanto	Shin-etsu	Tokai	Hokuriku	Kinki
Service provision (mark with o)						

Chugoku	Shikoku	Kyushu	Tohoku	Hokkaido	Okinawa	Outside Japan

(Note) For the division of districts, please refer to "Research Form Entry Method."

### 11. Problems of management

Among the management problems in the departments carrying out the business in question in your company, select the most important three and encircle the numbers which correspond to those problems.

Problems of management related to the departments of business in question	<ol style="list-style-type: none"> <li>1. Excessive burden of plant and equipment investments</li> <li>2. Excessive burden of investments into developments of software</li> <li>3. Excessive burden of investments for safety and reliability</li> <li>4. Excessive burden of circuit fees</li> <li>5. Difficulty in capital procurement</li> <li>6. Lack of engineers</li> <li>7. Treatment of middle-aged and older engineers</li> <li>8. Trend of dumping due to excessive competition</li> <li>9. Difficulty in acquisition of new customers</li> <li>10. Low percentage of regular customers</li> <li>11. Trend of entry by big businesses into industry</li> <li>12. Unstable market and violent changes of prosperity and recession</li> <li>13. Enhancement of service menu</li> <li>14. Lack of matching of communications protocols between manufacturers</li> <li>15. Financial difficulty</li> <li>16. Other (            )</li> </ol>
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12. Expenses/income ratio

In regard to the expenses/income ratios (Expenses/Income x 100 percent) of the departments related to the business in question in your company which were achieved in FY 1988 and are estimated for 1993, please mark the corresponding columns with o.

Expenses/income ratio of departments related to business in question	Achievement FY 88	Estimation FY 93
1. Fairly profitable (90% or less)		
2. Balanced, but suffering (90~110%)		
3. Minor deficit (110~150%)		
4. Major deficit (More than 150%)		
5. Total ( )		

13. Plant and equipment investment environment, etc.

(1) How did you or do you judge the business condition of each of the terms listed below compared to its previous term? Please enter the corresponding number in each column.

- 1) Up
- 2) Constant
- 3) Down

Category	Condition of business
First half FY 88	
Second half FY 88	
First half FY 89	
Second half FY 89	

(2) Do you have any plan to change the amount of plant and equipment investments planned for FY 1989 for the departments related to the business in question in your company? Please enter the corresponding number in the column below.

- 1. Large possibility of increase
- 2. Small possibility of change
- 3. Large possibility of decrease

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The object of this research covers all companies which are carriers of the businesses overseen by the MPT.

This research is carried out directly by the MPT, so the contents will be kept confidential.

We will appreciate your efforts if, in consideration of the objective of this research, you can kindly answer the questionnaire and forward your answers before 11 September 1989.

**Research Form Entry Method**

(General)

1. Research timing

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2. Number of research forms to be submitted

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3. Monetary unit

Million yen (round off the fractions below this unit).

4. Distinction of years

Fiscal year (from 1 April to 31 March of the next year).

5. Submission closing date

11 September 1989 (Please observe this date to help arrange the research results as soon as possible).

## 6. Submission destination

Telecommunications Industry Promotion Office,  
Telecommunications Policy Bureau,  
Ministry of Posts and Telecommunications  
(Please use the reply envelope enclosed.)  
Postal code: 100-90  
3-2, Kasumigaseki 1-chome, Chiyoda-ku, Tokyo  
Telephone: 03(504)4788 (direct)

(Notes to be observed in entry of research form)

The item numbers below correspond to those used in the research form.

### 1. Businesses

The "businesses" referred to by this research are defined as follows:

Category	Definition
Type 1 telecommunications business	Business which provides telecommunications services by installing telecommunications line plant and equipment.
Special type II telecommunications business	Among the type II telecommunications businesses providing telecommunications plant and equipment to undefined multiple number of people, the business which provides plant and equipment with larger scale than the standard scale defined in government ordinances, or the business which provides the users with the plant and equipment for communications with locations outside Japan.
General type II telecommunications business	Type II telecommunications business other than special type II telecommunications business.
Broadcast business	Business dealing with the transmission of radio communications for direct reception by the public.
CATV broadcast business	Cable broadcast business other than the cable radio broadcast business as specified in Article 2 of the Law regulating the operation of cable radio broadcast business.

### 2. Investments in plant and equipment acquired

Enter the achieved or planned investments in plant and equipment which have been or will be acquired by your company in each fiscal year (specify the

acquisition cost before depreciation of the tangible fixed assets, including construction in progress, in each fiscal term).

(Note 1) Enter only the investments in plant and equipment acquired in relation to the business field in question.

(Note 2) Be careful not to doubly calculate the amount transferred from "Construction in progress" to the main account.

### 3. Investments in plant and equipment acquired broken down by item

Any item which cannot be categorized into one of the items presented in the table is to be categorized in "Other." In this case, please provide a short description of the investment item(s) inside ( ).

#### (1) Long-term capital procurement and employment condition

For the content of each of the long-term capital procurement and employment condition (based on net increase/decrease), please refer to the following description.

Capital procurement/ employment item	Description
Funds required for plant and equipment investments	Amount of funds required for plant and equipment investments based on those to be paid in cash.
Investments and loans	Net increase/decrease of long-term investments and loans (those included in fixed assets). (Amount of new investments and loans-- recovered amount).
To affiliated companies in Japan	Among "Investments and loans," net increase/decrease of investments and loans for affiliated companies in Japan (regardless of plant and equipment funds or working funds).
Direct overseas investments	Among "Investments and loans," net increase/decrease of investments and loans to affiliated companies overseas (regardless of plant and equipment funds or working funds). (Note) Consider the direct overseas investments based on the amount reported to the Bank of Japan.
Other investments and loans	Among "Investments and loans," net increase/decrease of other investments and loans other than to affiliated companies (financial assets for use in investments, etc.).
Transfer to short-term funds	Among the capital procured for long term, the capital transferred to short-term capital (working funds, etc.). (Note) Inversely, if capital procured for short term is used as long-term capital, the amount becomes negative. In this case, put a "^" in the amount column. This item is for use in the adjustment of total amount of capital procurement.
Stock	Net income by stock issuance, including the premium.
Overseas investments and loans	Among "Stock," payment made from overseas investors.

[Table continued]

[Continuation of table]

Capital procurement/ employment item	Description
Corporate bonds	Net increase/decrease due to issuance of corporate bonds. (Newly issued amount—Redeemed amount).
Domestic straight bond Domestic convertible bond Domestic warrant bond	Net increase/decrease of corporate bonds offered in Japan. (Note) Be careful not to doubly calculate the stock increase after the right of conversion into stock or the warrant (except in case of cash payment) has been exercised.
Foreign bond	Net increase/decrease of bonds and Euroyen bonds which are offered in foreign countries and whose denominations are in foreign currencies.
Borrowing	Net increase/decrease of long-term borrowing from financial institutions. (Newly borrowed amount—Repaid amount).
Governmental financial institutions	Net increase/decrease of borrowing in yen from the Japan Development Bank, Hokkaido-Tohoku Development Corp., Small Business Finance Corp., Central Bank for Commercial and Industrial Cooperative, Environmental Pollution Control Service Corp., Japan Regional Development Corp., etc.
Private financial institutions	Net increase/decrease of borrowing in yen from long-term credit banks (Industrial Bank of Japan, Long-Term Credit Bank of Japan, Nippon Credit Bank), city banks, regional banks, trust banks, insurance companies, foreign banks, insurance companies, foreign banks in Japan, etc. (including mutual savings and loan banks, shinkin banks, Central Cooperative Bank for Agriculture and Forestry).
Other	Net increase/decrease of borrowing in yen from other financial institutions other than the governmental and private financial institutions mentioned above (from the parent company, finance companies, etc.).
Foreign currency borrowing	Net increase/decrease of impact loans via foreign banks in Japan, or borrowing from foreign financial institutions, foreign companies, etc.
Own funds	Total sum of internal reserve, depreciation, etc.

(2) For investments and loans to affiliated companies (based on invested amounts), enter the amounts of new investments without excluding the capital recoveries in the same fiscal year.

#### 7. Service districts

For the distinction of the districts, refer to the district distinction list below.

<u>District</u>	<u>Prefectures</u>
Tokyo	Tokyo-to
Kanto	Kanagawa-ken, Saitama-ken, Chiba-ken, Ibaraki-ken, Tochigi-ken, Gunma-ken, Yamanashi-ken
Shin-etsu	Nagano-ken, Niigata-ken
Tokai	Aichi-ken, Mie-ken, Shizuoka-ken, Gifu-ken
Hokuriki	Ishikawa-ken, Fukui-ken, Toyama-ken
Kinki	Osaka-fu, Kyoto-fu, Hyogo-ken, Nara-ken, Shiga-ken, Wakayama-ken
Chugoku	Hiroshima-ken, Tottori-ken, Shimane-ken, Okayama-ken, Yamaguchi-ken
Shikoku	Ehime-ken, Tokushima-ken, Kagawa-ken, Kochi-ken
Kyushu	Kumamoto-ken, Nagasaki-ken, Fukuoka-ken, Saga-ken, Oita-ken, Miyazaki-ken, Kagashima-ken
Tohoku	Miyagi-ken, Fukushima-ken, Iwate-ken, Aomori-ken, Yamagata-ken, Akita-ken
Hokkaido	Hokkaido
Okinawa	Okinawa-ken
Outside Japan	Areas outside Japan

Handling No.

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\*The handling No. will be entered by the MPT.

Management and Coordination Agency: Approval No. 17028
Approval limit date: 31 October 1989
To be submitted to: Ministry of Posts and Telecommunications
To be submitted before: 11 September 1989
Copies to be submitted: 1 copy per company

Research Into Status of Plant and Equipment  
Investments in Communications Industry  
—Research Form for Broadcast and CATV Businesses—

For the entry procedure, please refer to the attached "Research Form Entry Method."

Name of company	
Main office of headquarters address	
Department, office and name of person in charge of entry	Contact: Tele. ( ) _____

Paid up capital (Note 1)	¥ million
Number of employees (Note 2)	persons

(Note 1) If the "capital or organization fund, etc." of your company is below ¥1 million, please assume it as ¥1 million.

(Note 2) For the number of employees, please specify the number of working employees as of 1 September 1989 or of the nearest salary closing date. Do not include temporary workers or staff transmitted from outside the company.

- Before proceeding to the questionnaire, please answer the following question:

Does the amount of plant and equipment investments specified in this research form include the consumption tax? Encircle the number of the proper answer in the following:

1	Yes	2	No
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### 1. Business

Please encircle the number corresponding to the business carried out by your company.

1	Type I telecommunications business
2	Special type II telecommunications business
3	General type II telecommunications business
4	Broadcast business
5	CATV business

### 2. Investments in plant and equipment acquired

Please specify the achieved or planned investments in plant and equipment associated with the business specified above which have been or will be acquired by your company in each fiscal year (please specify the acquisition cost before depreciation of the tangible fixed assets, including construction in progress, in each fiscal term).

Category	Achievement FY 88	Estimated achievement FY 89	Plan FY 1990
Investments in plant and equip- ment acquired	¥ million	¥ million	¥ million
First half	¥ million	¥ million	¥ million
Second half	¥ million	¥ million	¥ million

(Note 1) Specify only the investments in plant and equipment acquired in relation to the business field in question.

(Note 2) Be careful not to doubly calculate the amount transferred from "Construction in progress" to the main account.

3. Investments in plant and equipment acquired broken down by item

In regard to your achieved or planned investments in plant and equipment which have been or will be acquired in each year, please specify the amount of money for each of the investment items as categorized below.

Category	Achievement FY 88	Estimated achievement FY 89	Planned FY 90
Construction of buildings (station buildings, etc.)	¥ million	¥ million	¥ million
Auxiliary plant and equipment, accessories, etc.	¥ million	¥ million	¥ million
Studio equipment	¥ million	¥ million	¥ million
Transmission lines and antennas	¥ million	¥ million	¥ million
Laying of cables, etc.	¥ million	¥ million	¥ million
R&D	¥ million	¥ million	¥ million
Other	¥ million	¥ million	¥ million
Total	¥ million	¥ million	¥ million

4. Long-term capital procurement and employment condition

(1) Long-term capital procurement and employment condition (based on net increase)

In regard to the condition of long-term capital procurement and employment of the whole of your company, please specify the amount of money, based on net increase/decrease, in each year of each of the procurement or employment items shown below (refer to "Research Form Entry Method" for their definition).

Category		Achievement FY 88	Estimated achievement FY89	Planned FY 90
Long-term capital employment	Plant & equipment funds required	Y mil	Y mil	Y mil
	Investments, loans	Y mil	Y mil	Y mil
	To affiliated com- panies in Japan	Y mil	Y mil	Y mil
	Direct overseas investments	Y mil	Y mil	Y mil
	Other	Y mil	Y mil	Y mil
	Transfer to short- term funds	Y mil	Y mil	Y mil
	Total	Y mil	Y mil	Y mil
Long-term fund procurement	Stock	Y mil	Y mil	Y mil
	Overseas invest- ments and loans	Y mil	Y mil	Y mil
	Corporate bonds	Y mil	Y mil	Y mil
	Domestic straight bond	Y mil	Y mil	Y mil
	Domestic con- vertible bond	Y mil	Y mil	Y mil
	Domestic warrant bond	Y mil	Y mil	Y mil
	Foreign bond	Y mil	Y mil	Y mil
	Borrowing	Y mil	Y mil	Y mil
	Governmental finan- cial institutions	Y mil	Y mil	Y mil
	Private financial institutions	Y mil	Y mil	Y mil
	Other	Y mil	Y mil	Y mil
	Foreign currency borrowing	Y mil	Y mil	Y mil
	Own funds	Y mil	Y mil	Y mil
Depreciation	Y mil	Y mil	Y mil	

(Note 1) The net increase/decrease of long-term capital employment is obtained by subtracting the recovered amount from the invested or loaned amount, and that of long-term capital procurement is obtained by subtracting the redeemed amount from the issued or borrowed amount. Therefore, if the recovery of investments and loans or the redemption of corporate bonds or borrowing is excessive, the capital employment or procurement amount becomes negative, which should be marked by ^ at the beginning of the amount.

(Note 2) The total of "long-term capital employment" shall be equal to the total of "long-term capital procurement."

(Note 3) For the "Transfer to short-term funds," specify the amount of long-term funds transferred to short-term funds. Inversely, if a short-term fund is transferred to long-term fund, that amount becomes negative and should be marked with ^ at the beginning. This column can be used to arrange the figures so that the employed capital amount procured capital amount coincide with each other.

(2) Investments and loans to affiliated companies (based on invested and loaned amounts)

Please divide the investments and loans to affiliated companies into those for affiliated companies inside Japan and those for overseas affiliated companies (direct overseas investments), and specify the amount of investments and loans (before excluding the recovered capital) for each of the two categories. The calculations are to be based on the moments of payments. (For the planned amounts, please calculate them based on the organizational decisions.)

Category	Achievement FY 88	Estimated achievement FY 89	Plan FY 89
Investments and loans to affiliated companies in Japan	¥ million	¥ million	¥ million
Direct overseas investments	¥ million	¥ million	¥ million

(Notes) Direct overseas investments refer to the following actions:

1. Acquisition of security certificates in foreign currency issued by a foreign corporation, when this results in the possession by your company of 10 percent or more of the total stocks issued by that foreign corporation or of total amount invested for that foreign corporation.
2. In case your company already owns 10 percent or more of the total stocks issued by a foreign corporation, further acquisition of security certificates in foreign currency issued by that foreign corporation, or loan of money with a long term of a year or more to that foreign corporation.
3. In case your company has a permanent relationship with a foreign corporation in the form of lease of a director, supply of raw material for a long period or provision of important manufacturing technology, acquisition of security certificates issued by that foreign corporation or loan of money with a long term of a year or more to that foreign corporation.
4. Payment of funds necessary for introduction, enlargement, etc., of branches, etc. (including direct overseas businesses).

**5. Month and year of start of business**

Encircle the number corresponding to the period in which your company started services.

	Service start (month/year)
1	Before FY 85 (~March 1985)
2	First half of FY 85 (April~September 1985)
3	Second half of FY 85 (October 1985~March 1986)
4	First half of FY 86 (April~September 1986)
5	Second half of FY 86 (October 1986~March 1987)
6	First half of FY 87 (April~September 1987)
7	Second half of FY 87 (October 1987~March 1988)
8	First half of FY 88 (April~September 1988)
9	Second half of FY 88 (October 1988~March 1989)
10	First half of FY 89 (April~September 1989)

**6. Number of employees in the related business departments**

Please specify the number of employees in the departments carrying out the business in question.

Category	Persons
Your own staff (Note 1, Note 2)	Persons
Additional personnel (Note 1)	Persons
Staff transferred from external (Note 3)	Persons

(Note 1) For "Your own staff," specify the number of employees as of 31 March 1989. For "Additional personnel," specify the number of employees who were hired newly in the period from 1 April 1988 to 31 March 1989.

(Note 2) For "Your own staff," specify the number of working employees who receive monthly salary. Do not include temporary workers or staff transferred from outside your company.

(Note 3) For "Staff transferred from external," specify the number of staff as of 31 March 1989.

**7. Service districts**

Mark the districts where your company provides services.

District	Tokyo	Kanto	Shin-etsu	Tokai	Hokuriku	Kinki
Service provision (mark with o)						

Chugoku	Shikoku	Kyushu	Tohoku	Hokkaido	Okinawa	Outside Japan

(Note) For the division of districts, please refer to "Research Form Entry Method."

**8. Problems of management**

Among the management problems in the departments carrying out the business in question in your company, select the most important three and encircle the numbers which correspond to those problems.

1	Excessive burden of plant and equipment investments
2	Excessive burden of investments into software developments
3	Difficulty in capital procurement
4	Lack of engineers
5	Treatment of middle-aged and older engineers
6	Difficulty in acquisition of new customers
7	Low percentage of regular customers
8	Unstable market and violent changes in prosperity and recession
9	Enhancement of service menu
10	Heavy burden of program production and purchase costs
11	Heavy burden of street occupation and utility pole installation fees
12	Difficulty in acquisition of income from publicity and advertising
13	Financial difficulty
14	Other ( )

**9. Expenses/income ratio**

In regard to the expenses/income ratios (Expenses/Income x 100 percent) of the departments related to the business in question in your company which were achieved in FY 1988 and are estimated for 1993, please mark the corresponding columns with o.

Expenses/income ratio of departments related to business in question	Achievement FY 88	Estimation FY 93
1. Fairly profitable (90% or less)		
2. Balanced, but suffering (90-110%)		
3. Minor deficit (110-150%)		
4. Major deficit (More than 150%)		
5. Total ( )		

**10. Facilities investment environment, etc.**

(1) How did you or do you judge the business condition of each of the terms listed below compared to its previous term? Please enter the corresponding number in each column.

- 1) Up
- 2) Constant
- 3) Down

Category	Condition of business
First half FY 88	
Second half FY 88	
First half FY 89	
Second half FY 89	

(2) Do you have any plan to change the amount of plant and equipment investments planned for FY 1989 for the departments related to the business in question in your company? Please enter the corresponding number in the column below.

- 1. Large possibility of increase
- 2. Small possibility of change
- 3. Large possibility of decrease

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- END -

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