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Development Status of the Manufacture of Telecommunications Equipment (including low-cost receivers for sound broadcasting and television)

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THE STATUS OF TELECOMMUNICATION EQUIPMENT IN IRAN 1/

by

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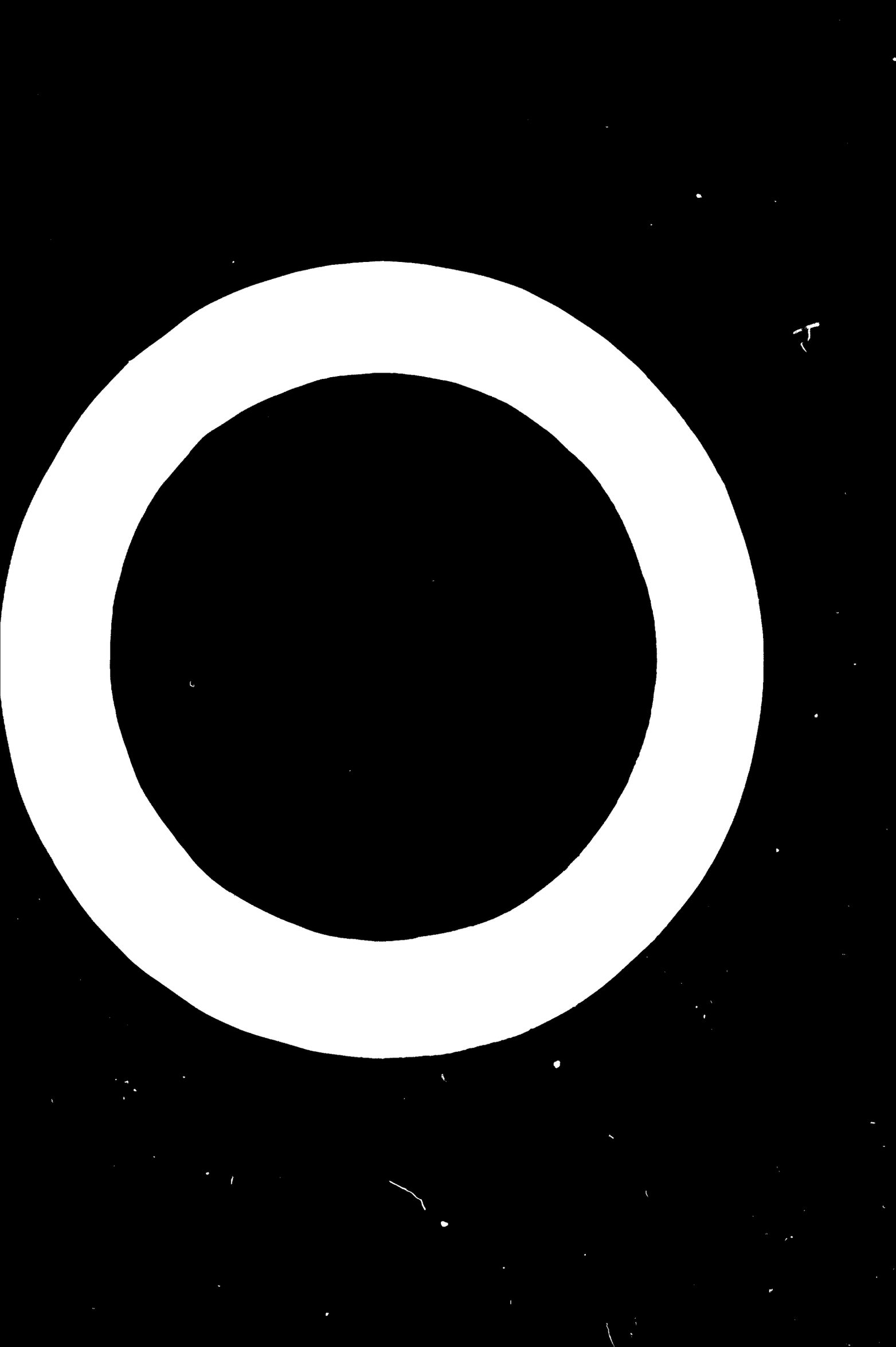

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I. INTRODUCTION

Iran covers an area of 628,000 square miles, with a population currently estimated at 24 million. It is estimated that there are some [illegible] million households in Iran, about 50 per cent of which are classified as farm households [illegible].

The direction and trend of the Iranian living economy offers attractive opportunities for investment in many industries. Rising national income and increasing urbanization of living provide a growing market for a wide variety of manufactured goods. At the same time, forward-looking government policies directed to economic and industrial development of the nation, create an environment favorable to private investor participation.

Electric Service is uniform throughout Iran and at the present time, electrical equipment is sold for 220 volt, 50 cycle, a-c operation. Production of electricity in 1963 exceeded [illegible] billion kilowatt hours according to "Report on the results of Annual Industrial Survey of Iran, 1963, General Departmental of Industrial and Mining Statistics, Ministry of Economy of Iran". In 1964 production reached 2,[illegible] million kwh, 64 per cent of which was used in homes and public work and [illegible] per cent in industry, according to Bank Markazi Report, March, 1965. Total installed capacity of electric power exceeded [illegible] million kilowatts, and plans are being prepared to increase the capacity substantially.

In Iran the business of communications comes under the supervision and direction of the Ministry of Post, Telegraph and Telephone(PTT). Private sector wishing to utilize a frequency band for business communication must obtain a permit and pay a regular fee depending on the number of channels used and distance between stations. Telephone Company of Iran (T.C.I) is an autonomous public corporation, but the government is the only shareholder of the Company.

II. Telephone and Exchange Equipment

1. Table 1 shows the number of telephone calls and the time involved for the years 1966-1968.

Table 1. Telephone Call Statistics

Year	International		Inland	
	No. of Minutes	No. of calls	No. of minutes	No. of calls
1966	98,520	15,[illegible]	[illegible]	[illegible]
1967	[illegible]	[illegible]	[illegible]	[illegible]
1967	113,400	[illegible]	[illegible]	[illegible]
1968	135,420	23,300	21,2[illegible]	6,700,5[illegible]

Table 2 shows the status of automatic telephone subscribers.

Table 3 lists the annual demand for telephone subscribers and telephone sets.

4. Tehran Exchange Center-Long Distance Dialling the number of present automatic telephone subscribers in Tehran totals over 150,000. The long distance dial system under construction will allow small increases in present subscribers as well as automatic interconnection between Iranian provinces and Tehran.

III. Carrier & Microwave Equipment

1. Carrier Network

208 locations in Iran are connected to Tehran by carrier. During 1968, 8 terminals of 12 channel each and 21 terminals of 3 channel each have further been installed. 40 new terminals are expected to be completed

Table 2. [illegible]

[illegible]

Table 3. Estimated Annual Demand

Year	Subscribers	Sets
1968	47,000	55,000
1969	52,000	62,000
1970	58,000	70,000
1971	64,000	77,000
1972	72,000	86,000
1973	77,000	95,000
1974	83,000	103,000
1975	90,000	117,000
1976	97,000	120,000
1977	104,000	140,000
1978	110,000	144,000

by the end of 1348. (march 1970).

2. Microwave (Radio) Network

The first microwave network to become operational in Iran was the CENTO Network. Although the basic purpose of the network is to provide international communications for CENTO Countries (the link is between Turkey, Iran, and Pakistan), it is also used for domestic communication. The network route in Iran starts at Ghatur, a border city in the North, through Tehran, to Mirjaneh, a southern border city. PTT plans its own microwave network, to be operational in a few years, which will connect most of northern and western cities and will supplement and extend the present CENTO Network.

Esfahan-Shiraz link using 6 GC band has been recently completed with a final capacity of 300 channel.

A nationwide 7-route network complementing present CENTO line is under construction by NEC (Total capacity 960 channels). The total distance covered will be 3800 km, the total number of relay stations will be 83, and the line will connect the following cities:

1. Tehran-Khoramshahr
2. " -Mashad
3. " -Babol
4. Hamadan-Kermanshah
5. Ghazvin-Pasht
6. Ahwaz-Shiraz
7. Mashad-Birjand

An outline of costs for above project is given in table 4.

National Iranian Oil Company (NIOC) has its own network under construction. It covers 1750 miles, has 68 relay stations, and a maximum capacity of 600 channels.

Table 4. NEC Network Cost Outline

Outline of Equipment

Unit:Dollar

		Quantity	Total Price
(a)	6 GC Radio System:		
	Transmitter-receiver	546	2,894,302
	Modulator-demodulator	90	495,966
	Diversity control	31	267,577
	Sound-vision separator	14	29,937
		681	3,687,782
(b)	6 GC Antenna system:		
	Parabolic antenna and reflector	211	467,754
	Waveguide feeder and branching filter		584,102
	Denydrator		38,700
(c)	Supervisory system:		
	Multiplex equipment	27	249,802
	Supervisory equipment	126	935,036
	Switchover control equipment	48	192,208
		201	1,377,046
(d)	Carrier system:		
	2W/4W terminating equipment	28	112,823
	Channel translating equip.	40	689,519
	Group translating equipment	15	175,117
	Supergroup translating equip.	21	252,881
	G/SG translating equipment	3	23,676
	Dropping terminal equipment	10	121,036
	Branching equipment	1	2,216

Table 4, Cont/....

Through group filter equip.	2	4,705
Through SG filter equipment	4	51,566
Through G/SG filter equip.	1	2,993
Channel carrier supply equip.	26	262,652
Group carrier supply equipment	25	153,242
SG carrier supply equipment	14	97,488
Group distribution frame	6	4,542
SG distribution frame	6	13,010
G/SG distribution frame	19	16,948
Program channel equipment	30	188,070
Carrier telegraph terminal equip.	66	606,540
Cricuit test board	32	100,352
	349	2,855,376

(e)	Power equipment, engine generator, battery, etc.	2,101,766
(f)	Cables, tail connection, etc.	1,081,419
(g)	Testing and measuring equip.	1,718,387
(h)	Spares	2,570,444
	GRAND TOTAL	16,482,776

A further PTT project (National Iranian Microwave Network) to be completed in 3-4 years will cover 9,300 Km and by forming a loop ties the entire country together, with sufficient redundant routes for peak-hour traffic or switching capability in case of failures.

Based on figures available for projects under way, annual demand for the next four years is given in table 5 below.

Table 5. Annual demand in million Rials ($ 1.00 = 75 Rials)

Description	1970	1971	1972	1973
Carrier Equipment	347	618	652	339
Microwave Equipment	469	1,073	1,099	742
Total	816	1,691	1,751	1,081

IV. PRODUCTION

1. Telephone Equipment

Iran has a plant for the manufacturing of telephone equipment with the following maximum capacities:

50,000 subscriber units;
45,000 telephone sets.

2. Microwave & Carrier Equipment

There has been extensive negotiations going on in the past year between the Government of Iran and several foreign manufacturers to make components and modules in Iran, No final decision, however, has been arrived at as yet.


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