

6-4 Number of Repairs

		Source: Telephone statistical reports Maintenance reports										
		1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
Main Telephone Station												
BMA Total		269,534	287,090	312,062	339,510	361,924	433,517	548,080	614,707	686,151	792,203	900,941
Province Total		96,360	102,148	113,617	123,721	157,567	192,981	250,832	286,915	319,721	365,811	423,581
Number of Repairs		1988 to 1990: Presumed from		(Number of Repairs / 1,000 Main Telephone Station (average per Month))								
BMA Total												
Telephone set		35,265	50,671	66,232	83,202	80,877	84,652	99,196	110,013	101,626	106,885	
Drop wire & Inside line		86,092	89,266	111,989	108,080	119,496	127,993	115,773	143,576	138,621	126,604	
Subcarrier							3,862	4,538				
Change of the vacant pair line		9,357	9,472	9,298	7,151	3,311						
Underground Cable		48,693	50,846	60,867	60,346	65,811	65,205	56,328	52,520	52,358	52,078	
Switching Equip.		667	724	1,330	1,320	2,174	4,415	4,167	16,782	18,188	22,955	
Other cause of damage		4,920	6,872	7,363	7,835	8,048	7,117	6,322				
Test of good condition		53,314	48,276	61,304	61,101	102,220	59,585	58,073	57,803	44,147	45,302	
Total		238,248	256,127	318,383	329,035	381,937	352,829	344,397	380,693	354,939	353,824	
PROVINCE Total												
Telephone set		10,182	12,188	14,740	16,460	20,449	33,942	36,532	47,571	46,142	82,316	
Drop wire & Inside line		46,913	46,478	50,787	61,453	62,322	55,265	51,724	68,295	70,626	51,860	
Subcarrier												
Change of the vacant pair line		2,964	3,728	4,138	6,931	7,156						
Underground Cable		4,600	5,016	4,221	4,343	6,718	20,747	20,470	28,622	31,731	34,982	
Switching Equip.		1,313	911	1,058	2,540	5,914	13,752	16,851	52,607	60,186	54,312	
Other cause of damage		2,199	3,328	3,205	4,811	8,133	13,983	11,943				
Test of good condition		1,030	611	1,348	1,812	2,921	4,827	6,313	26,557	33,205	41,394	
Total		69,231	72,340	79,596	98,447	113,777	142,516	143,833	223,653	241,890	264,865	
Number of Repairs / 1,000 Main Telephone Station (average per Month)												
BMA Total												
Telephone set		9.32	10.50	13.99	16.94	19.66	17.19	14.15	14.05	14.16	11.51	10.57
Drop wire & Inside line		26.55	25.67	24.66	28.65	25.54	25.40	21.18	16.40	18.48	15.70	12.52
Subcarrier						0.00	0.71	0.64	0.64	0.00		
Change of the vacant pair line		2.90	2.80	2.62	2.38	1.70						
Underground Cable		15.06	14.50	14.03	15.57	14.27	14.04	10.83	7.99	6.76	5.93	5.15
Switching Equip.			0.20	0.20	0.34	0.31	0.46	0.73	0.59	2.16	2.06	2.27
Other cause of damage		1.05	1.47	1.90	1.88	1.85	1.72	1.18	0.90			
Test of good condition		17.99	15.94	14.93	17.11	16.02	24.80	10.14	8.24	7.44	5.00	4.48
Total			71.08	72.33	82.87	79.35	84.32	58.85	48.81	49.00	40.20	34.99
PROVINCE Total												
Telephone set		7.19	8.59	9.40	10.35	8.80	9.72	12.73	11.30	13.13	11.27	17.46
Drop wire & Inside line		38.92	39.55	35.83	35.66	32.84	29.69	20.81	15.97	18.85	17.25	11.00
Subcarrier												
Change of the vacant pair line		2.46	2.50	2.88	2.91	3.48	3.40					
Underground Cable		2.50	3.87	3.89	2.96	2.54	3.18	7.82	6.33	7.90	7.75	7.42
Switching Equip.			1.11	0.70	0.74	1.36	2.80	5.13	5.19	14.52	14.70	11.52
Other cause of damage		1.90	1.85	2.58	2.25	2.57	3.81	5.27	3.69			
Test of good condition		0.97	0.87	0.53	1.02	1.02	1.47	1.79	1.96	7.33	8.11	8.78
Total			58.34	55.81	55.89	52.61	54.07	53.55	44.44	61.73	59.08	56.18
% fault / line connected (average per Month)												
Area 1						9.00				4.73	4.36	4.41
Area 2						9.00				5.44	4.95	4.59
Area 3						12.00				8.75	7.06	4.93
Area 4						9.00				6.14	6.56	5.41
BMA Total						9.37	9.49	7.04	4.68	6.01	5.59	4.81
PROVINCE 6						4.00	5.00	7.00	7.00	6.64	5.98	5.25
PROVINCE 9							5.00	6.00	5.00	7.34	8.75	8.26
PROVINCE Total						5.85	5.43	5.50	4.51	6.34	6.08	5.69
% fault cleared within 1 day (average per Month)												
BMA Total			61.79	57.94	60.78	63.23	70.01	75.84	88.05	84.29	84.97	90.08
PROV.			84.45	85.54	86.48	87.40	90.36	87.63	92.29	85.52	83.78	75.70
% fault cleared over than 7 days (average per Month)												
BMA Total			2.59	4.13	3.79	4.09	2.20	1.43	0.29	0.58	0.65	0.44
PROV.			1.94	2.12	1.86	1.61	0.86	1.66	0.81	1.13	1.45	3.42

6-5 List of Cables in BMA at Dec. 1989 (1/7)

Source : Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28, 1990, JICA)															
Ex. No.	Exchange Name	LTJ		LTJ&ASP		ASP		ASP(PHF)		AP		AP-FSP			
		No.	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	
1	Phloen Chit	1			0.40	1800	0.40	1800					0.40	2400	
		2			0.40	600	0.40	1800					0.40	3000	
		3			0.40	1500	0.40	1800					0.40	3000	
		4			0.40	900	0.40	1200					0.40	3000	
		5			0.40	1200	0.40	700					0.40	3000	
		6			0.40	200	0.40	1500					0.40	2400	
		7			0.40	100	0.40	3000					0.40	1800	
		8			0.40	300	0.40	2400							
		9			0.40	3000	0.40	2400							
		10					0.40	3000							
		11					0.40	3000							
		12					0.40	3000							
		13					0.40	200							
		14					0.40	2400							
		15					0.40	200							
		16					0.40	3000							
2	Samran Rai	1					0.40	1200	0.32	3600			0.40	3000	
		2					0.40	2700	0.32	4000			0.40	3000	
		3					0.40	3000	0.32	4000			0.40	2400	
		4					0.40	2100	0.32	3200			0.40	3000	
		5					0.32	3200	0.32	4000			0.40	1800	
		6					0.50	600	0.32	4000			0.40	600	
		7							0.32	3600					
		8							0.32	3600					
		9							0.32	3600					
3	Krung Kasem	1					0.40	2100	0.32	3600			0.40	3000	
		2					0.40	3000	0.32	3200					
		3					0.40	1800							
		4					0.40	1800							
		5					0.40	1800							
		6					0.40	1800							
		7					0.40	1800							
		8					0.40	1800							
		9					0.40	900							
		10					0.40	1500							
		11					0.40	3000							
		12					0.40	1500							
4	Surawong	1					0.40	1800					0.40	3000	
		2					0.32	3600					0.40	3000	
		3					0.40	3000					0.40	3000	
		4					0.40	3000					0.40	3000	
		5					0.40	3000					0.40	3000	
		6					0.40	3000					0.40	3000	
		7					0.40	3000					0.40	3000	
		8					0.40	3000							
		9					0.32	3600							
		10					0.40	3000							
		11					0.40	3000							
		12					0.32	3600							
		13					0.40	2400							
		14					0.32	3600							
5	Sam Sen	1					0.40	3000	0.32	3600			0.40	1800	
		2							0.32	3600			0.40	3000	
		3							0.32	3600					
6	Asok-Din Dang	1					0.40	3000	0.32	3600			0.40	3000	
		2					0.40	3000					0.40	3000	
		3					0.40	3000					0.40	1800	
		4					0.40	3000					0.40	3000	
		5					0.40	3000					0.40	3000	
		6											0.40	3000	
		7											0.40	3000	
		8											0.40	3000	
7	Sukhumvit	1					0.40	2400	0.32	3600			0.40	2100	
		2					0.40	3000	0.32	4000			0.40	2100	

6-5 List of Cables in BMA at Dec. 1989 (2/7)

Source : Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28, 1990, JICA)													
Ex. No.	Exchange Name	LTJ		LTJ&ASP		ASP		ASP(PEF)		AP		AP-FSP	
		No.	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ
		3										0.40	1500
		4										0.40	2100
		5										0.40	2100
		6										0.40	2400
8	Pathum Wan	1				0.40	1800	0.32	3600			0.40	3000
		2				0.40	2400	0.32	3600			0.40	1800
		3						0.32	3600				
		4						0.32	3600				
		5						0.32	3600				
		6						0.32	3600				
		7						0.32	3600				
		8						0.32	3600				
9	Chaiyaphruk	1				0.40	2100			0.40	1100	0.40	1500
		2				0.40	2100			0.40	900	0.50	2100
		3				0.40	2100					0.40	2100
		4				0.40	2100					0.40	2700
		5				0.40	1800						
		6				0.40	2400						
		7				0.40	2400						
		8				0.40	2700						
		9				0.40	3000						
		10				0.40	3000						
		11				0.40	3000						
10	Bang Na	1				0.40	2400					0.40	2700
		2				0.40	1200					0.40	2700
		3				0.40	2700					0.40	3000
		4				0.40	2700					0.40	2700
		5				0.40	2100					0.40	3000
		6				0.40	2100					0.40	2700
		7				0.40	3000					0.40	2100
		8										0.50	1800
		9										0.50	1800
		10										0.40	3000
		11										0.50	1800
11	Samut Prakan	1				0.40	2700					0.40	2700
		2				0.40	1500					0.40	2700
		3				0.40	2400					0.40	2700
		4										0.40	1500
12	Khlong Chan	1				0.40	3000					0.40	3000
		2				0.50	2400					0.40	2700
		3				0.40	3000					0.40	2700
		4				0.50	2400					0.40	2700
		5				0.40	2700					0.40	2700
		6				0.50	1200					0.40	3000
		7				0.40	2700					0.40	3000
		8										0.40	2400
		9										0.40	3000
		10										0.40	3000
		11										0.40	1800
		12										0.40	2400
		13										0.40	1800
13	Thungmahamek	1				0.40	1800					0.40	2400
		2				0.40	1800						
		3				0.40	1200						
		4				0.40	1200						
		5				0.40	2100						
		6				0.40	1800						
		7				0.40	1800						
		8				0.40	3000						
		9				0.40	1800						
		10				0.40	3000						
14	Sathu Pradit	1				0.40	1200			0.40	900	0.40	2700
		2				0.40	2100					0.40	3000

6-5 List of Cables in BMA at Dec. 1989 (3/7)

Source : Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28, 1990, JICA)													
Ex. No.	Exchange Name	LTJ		LTJ&ASP		ASP		ASP(PEF)		AP		AP-FSF	
		No.	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair
		3										0.40	3000
15	Thanon Tok	1				0.40	3000					0.40	2400
		2				0.40	2100					0.40	2400
		3										0.40	1800
		4										0.40	2400
		5										0.40	2400
		6										0.40	2100
		7										0.40	2100
16	Pu Chao Saming	1				0.40	1800					0.40	2400
		2				0.32	3200					0.50	1800
		3				0.40	3000						
		4				0.32	3600						
17	Bang Chan	1										0.40	3000
		2										0.40	2700
		3										0.40	900
		4										0.40	2400
		5										0.40	2400
		6										0.40	2700
		7										0.50	1800
		8										0.40	2700
18	Phra Khanong	1				0.40	3000					0.40	1800
		2				0.40	2400					0.40	3000
		3				0.40	3000					0.40	2700
		4				0.40	1800					0.40	2400
		5										0.40	2400
		6										0.40	3000
		7										0.40	2400
		8										0.40	3000
		9										0.40	3000
		10										0.40	3000
19	Hua Mak	1				0.40	3000					0.40	3000
		2				0.40	1800					0.40	3000
		3				0.40	3000					0.40	3000
		4				0.40	3000					0.40	2400
		5										0.40	2400
		6										0.50	1800
		7										0.40	2400
		8										0.40	3000
		9										0.40	3000
		10										0.50	1800
		11										0.65	1200
20	Trok Chan	1				0.32	3600					0.40	1800
		2				0.40	2400					0.40	3000
		3				0.40	1800					0.40	2400
		4				0.40	3000					0.40	2400
		5				0.32	3600					0.40	2400
		6				0.40	3000					0.40	2400
		7										0.40	2400
		8										0.40	2400
		9										0.40	2400
21	Lat Krabang	1										0.50	1800
		2										0.40	2400
22	Bang Phli	1										0.40	1800
		2										0.40	2700
		3										0.40	2400
		4										0.65	600
23	Bang Phli - Bang	1								0.40	900		
		2								0.50	50		
24	Pravet	1								0.40	900		
		2								0.40	900		

6-5 List of Cables in BMA at Dec. 1989 (4/7)

Source ; Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28, 1990, IICA)													
Exchange Name		LTJ		LTJ&ASP		ASP		ASP(PEF)		AP		AP-FSF	
Ex. No.	No.	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair
25	Khlong Toei	1										0.40	3000
		2										0.40	3000
		3										0.40	3000
		4										0.40	3000
		5										0.40	2400
26	Nong Chok	1								0.40	400		
		2								0.40	400		
27	Bang Pu	1								0.50	900		
		2								0.50	600		
28	Onnut	1										0.40	2400
		2										0.40	1800
		3										0.40	2400
		4										0.40	2400
		5										0.50	1800
		6										0.50	1800
		7										0.50	1800
		8										0.40	2700
		9										0.40	2400
		10										0.40	2400
		11										0.40	2400
29	Phruk Sechat	1										0.40	2400
		2										0.40	2400
30	Learn Thong	1										?	2400
		2										0.40	1200
		3										0.40	1200
31	Bang Bo	1								0.40	50		
		2								0.40	25		
32	Thon Buri	1	0.50	600			0.40	2400				0.40	3000
		2	0.50	300			0.40	2400				0.40	2400
		3	0.50	200			0.40	3000					
		4					0.40	1800					
		5					0.40	1200					
		6					0.40	3000					
		7					0.32	4000					
		8					0.32	4000					
		9					0.40	3000					
33	Bang Khae	1					0.40	3000				0.40	2700
	Bang Khae	2					0.40	2100				0.40	2700
	Bang Khae	3					0.40	2400				0.40	3000
	Bang Khae	4					0.40	2100					
34	Dao Khanong	1					0.40	3000				0.40	1800
		2					0.40	2400				0.40	3000
		3					0.40	600					
		4					0.40	1800					
		5					0.40	2400					
		6					0.40	3000					
		7					0.40	2400					
35	Phra Pradaeng	1					0.40	2400				0.40	2400
		2										0.40	2400
		3										0.40	1500
		4										0.40	2700
36	Nong Khaem	1										0.40	2400
		2										0.40	2400
		3										0.40	600
37	Bang Phlat	1					0.40	3000				0.40	3000
		2					0.65	1100				0.50	1200
		3					0.50	1800				0.40	1800

6-5 List of Cables in BMA at Dec. 1989 (5/7)

Source ; Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28. 1990, JICA)													
Ex. No.	Exchange Name	LTJ		LTJ&ASP		ASP		ASP(PEF)		AP		AP-FSF	
		No.	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ
		4				0.40	3000					0.40	2400
		5				0.40	2400					0.40	2400
		6										0.40	3000
		7										0.40	3000
		8										0.40	3000
		9										0.40	3000
		10										0.40	3000
		11										0.40	3000
		12										0.40	3000
		13										0.40	3000
38	Phanu Rangsi	1								0.40	900		
39	Phasi Charoen	1				0.40	3000					0.40	1800
		2				0.40	2400					0.40	3000
												0.40	2400
40	Charansanitwong	1				0.40	2400					0.40	3000
		2				0.40	3000					0.40	2100
		3				0.40	3000					0.40	2700
		4										0.50	1800
		5										0.40	2700
41	Rat Burana	1										0.40	2400
		2										0.50	1800
		3										0.50	3000
		4										0.40	1800
		5										0.40	2400
		6										0.40	1800
42	Lai Ya	1				0.40	1800					0.40	3000
		2				0.40	3000					0.40	2700
		3				0.40	2400					0.40	2700
		4				0.40	3000					0.40	2700
		5										0.40	2700
		6										0.40	2100
		7										0.40	2700
		8										0.40	2100
43	Muban Sethakit	1										0.40	2100
		2										0.40	900
		3										0.40	2100
44	Pom Phra Chool	1								0.40	900		
		2								0.40	900		
45	Ekachai	1										0.40	3000
		2										0.40	3000
		3										0.50	1800
		4										0.40	3000
		5										0.65	1200
		6										0.50	1800
46	Phuhamonthon	1								0.40	600		
		2								0.40	400		
47	Phahon Yothin	1	0.50	200		0.32	3600					0.40	2400
		2	0.50	300		0.40	3000					0.40	3000
		3	0.65	600		0.40	1200					0.40	3000
		4	0.50	300		0.40	1200					0.40	3000
		5	0.65	600		0.40	2100					0.40	3000
		6	0.65	300		0.32	4000					0.40	2100
		7	0.65	600		0.40	2100					0.40	1500
		8	0.50	600		0.40	600						
		9				0.40	900						
48	Intramar	1				0.40	3000						
		2				0.40	3000						
		3				0.40	2700						
		4				0.40	2400						

6-5 List of Cables in BMA at Dec. 1989 (6/7)

Source ; Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28, 1990, JICA)													
Ex. No.	Exchange Name	LTJ		LTJ&ASP		ASP		ASP(PIF)		AP		AP-FSF	
		No.	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ
		5				0.40	2700						
		6				0.40	3600						
		7				0.40	3000						
49	Bang Khen	1				0.50	1200					0.40	3000
		2				0.40	3000					0.40	3000
		3				0.40	1200						
50	Bang Su	1				0.40	3000					0.40	2700
		2				0.40	1200					0.40	2100
		3				0.40	3000					0.40	2400
		4				0.40	2100						
		5				0.40	1200						
		6				0.32	3600						
		7				0.40	2400						
		8				0.40	2100						
		9				0.40	2100						
51	Ngam Wong Wan	1				0.32	3500					0.40	2400
		2				0.50	1800					0.40	3000
		3				0.40	3000					0.40	3000
		4										0.40	1800
52	Don Muang	1				0.40	1200					0.50	1800
		2				0.40	3000					0.40	3000
		3										0.40	3000
		4										0.40	2100
53	Phatum Thani	1										0.40	2400
		2										0.50	600
54	Rangsit	1										0.40	1500
		2										0.40	1800
55	Lak Si	1				0.40	3000					0.40	3000
		2				0.40	2700					0.40	1800
		3				0.40	1500						
56	Nonthaburi	1				0.40	2400					0.40	2700
		2				0.40	1200					0.40	1200
		3				0.40	2400						
57	Ram Inthra	1										0.40	2400
		2										0.40	2400
		3										0.40	1200
		4										0.40	2400
		5										0.40	1800
58	Lai Phrao 1	1				0.40	3000					0.40	2400
		2				0.40	3000					0.40	3000
		3				0.40	2400					0.40	2700
		4				0.40	1200					0.40	2700
59	Lai Phrao 2	1				0.40	3000					0.40	2700
		2				0.40	2400					0.40	3000
		3				0.40	3000					0.40	3000
		4										0.40	3000
		5										0.40	2400
		6										0.40	2700
60	Pakkret	1										0.40	1800
		2										0.40	2400
61	Chaengwattana	1										0.40	2400
		2										0.40	1800
		3										0.50	2400
		4										0.40	2400
62	Thanyaburi	1								0.65	900		
		2								0.40	300		

6-5 List of Cables in BMA at Dec. 1989 (7/7)

Source ; Progress Report-1 of Investigation on Local Cable Network For ISDN (Feb. 28. 1990, JICA)													
Exchange Name		LTJ		LTJ&ASP		ASP		ASP(PEF)		AP		AP-FSF	
Ex. No.	No.	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair	φ	Pair
63	Nawanakhon	1										0.40	3000
		2										0.40	2400
64	Muang Ek	1								0.40	600		
		2								0.40	600		
65	Central Plaza	1										0.40	1200
66	Thungsikan	1										0.40	2400
		2										0.40	1800
67	Bang Bua Thong	1								0.40	600		
		2								0.50	600		

6-6 Characteristics of Existing Local Cables (1/8)

Line Length from Exchanges to Drop Points

Source: Progress Report of Investigation on Local
Cable Network for ISDN

No.	Accumulated Distribution (%)	Line length (m)
1	0.5%	243
2	1.0%	290
3	1.5%	325
4	2.0%	325
5	2.5%	325
6	3.0%	345
7	3.6%	398
8	4.1%	412
9	4.6%	420
10	5.1%	454
11	5.6%	475
12	6.1%	495
13	6.6%	539
14	7.1%	605
15	7.6%	634
16	8.1%	688
17	8.6%	691
18	9.1%	720
19	9.6%	737
20	10.2%	750
21	10.7%	757
22	11.2%	767
23	11.7%	770
24	12.2%	770
25	12.7%	777
26	13.2%	802
27	13.7%	829
28	14.2%	874
29	14.7%	908
30	15.2%	910
31	15.7%	921
32	16.2%	937
33	16.8%	946
34	17.3%	949
35	17.8%	959
36	18.3%	962
37	18.8%	977
38	19.3%	992
39	19.8%	997
40	20.3%	1,025
41	20.8%	1,030
42	21.3%	1,050
43	21.8%	1,050
44	22.3%	1,098
45	22.8%	1,105
46	23.4%	1,106
47	23.9%	1,110
48	24.4%	1,124
49	24.9%	1,158
50	25.4%	1,159
51	25.9%	1,159
52	26.4%	1,159
53	26.9%	1,178
54	27.4%	1,197
55	27.9%	1,207
56	28.4%	1,225
57	28.9%	1,267
58	29.4%	1,274
59	29.9%	1,274
60	30.5%	1,280
61	31.0%	1,291
62	31.5%	1,351
63	32.0%	1,370
64	32.5%	1,380
65	33.0%	1,411
66	33.5%	1,414
67	34.0%	1,418
68	34.5%	1,432
69	35.0%	1,452

No.	Accumulated Distribution (%)	Line length (m)
70	35.5%	1,460
71	36.0%	1,510
72	36.5%	1,524
73	37.1%	1,530
74	37.6%	1,553
75	38.1%	1,562
76	38.6%	1,578
77	39.1%	1,584
78	39.6%	1,587
79	40.1%	1,592
80	40.6%	1,606
81	41.1%	1,613
82	41.6%	1,633
83	42.1%	1,644
84	42.6%	1,672
85	43.1%	1,675
86	43.7%	1,683
87	44.2%	1,686
88	44.7%	1,688
89	45.2%	1,720
90	45.7%	1,722
91	46.2%	1,731
92	46.7%	1,756
93	47.2%	1,760
94	47.7%	1,779
95	48.2%	1,781
96	48.7%	1,788
97	49.2%	1,806
98	49.7%	1,820
99	50.3%	1,824
100	50.8%	1,842
101	51.3%	1,855
102	51.8%	1,905
103	52.3%	1,929
104	52.8%	1,963
105	53.3%	1,968
106	53.8%	2,007
107	54.3%	2,021
108	54.8%	2,027
109	55.3%	2,045
110	55.8%	2,079
111	56.3%	2,088
112	56.9%	2,090
113	57.4%	2,103
114	57.9%	2,145
115	58.4%	2,146
116	58.9%	2,150
117	59.4%	2,150
118	59.9%	2,158
119	60.4%	2,191
120	60.9%	2,226
121	61.4%	2,231
122	61.9%	2,241
123	62.4%	2,241
124	62.9%	2,300
125	63.5%	2,332
126	64.0%	2,342
127	64.5%	2,361
128	65.0%	2,362
129	65.5%	2,370
130	66.0%	2,379
131	66.5%	2,435
132	67.0%	2,461
133	67.5%	2,484
134	68.0%	2,505
135	68.5%	2,560
136	69.0%	2,563
137	69.5%	2,575
138	70.1%	2,610

No.	Accumulated Distribution (%)	Line length (m)
139	70.6%	2,650
140	71.1%	2,655
141	71.6%	2,664
142	72.1%	2,672
143	72.6%	2,680
144	73.1%	2,694
145	73.6%	2,737
146	74.1%	2,754
147	74.6%	2,789
148	75.1%	2,795
149	75.6%	2,810
150	76.1%	2,818
151	76.6%	2,915
152	77.2%	2,933
153	77.7%	2,935
154	78.2%	2,999
155	78.7%	3,027
156	79.2%	3,041
157	79.7%	3,063
158	80.2%	3,071
159	80.7%	3,152
160	81.2%	3,184
161	81.7%	3,310
162	82.2%	3,319
163	82.7%	3,323
164	83.2%	3,353
165	83.8%	3,437
166	84.3%	3,477
167	84.8%	3,492
168	85.3%	3,525
169	85.8%	3,533
170	86.3%	3,568
171	86.8%	3,585
172	87.3%	3,607
173	87.8%	3,607
174	88.3%	3,725
175	88.8%	3,773
176	89.3%	3,800
177	89.8%	3,825
178	90.4%	3,833
179	90.9%	3,874
180	91.4%	3,937
181	91.9%	4,004
182	92.4%	4,028
183	92.9%	4,098
184	93.4%	4,159
185	93.9%	4,160
186	94.4%	4,205
187	94.9%	4,220
188	95.4%	4,300
189	95.9%	4,313
190	96.4%	4,574
191	97.0%	4,769
192	97.5%	5,184
193	98.0%	5,245
194	98.5%	5,434
195	99.0%	5,824
196	99.5%	6,036
197	100.0%	7,117

6-6 Characteristics of Existing Local Cables (3/8)

Loop Resistance

Source : Progress Report of Investigation on Local
Cable Network for ISDN

No.	Accumulated Distribution (%)	Loop Resistance (Ω)
1	0.5%	17
2	1.0%	55
3	1.5%	61
4	1.9%	61
5	2.4%	61
6	2.9%	85
7	3.4%	88
8	3.9%	117
9	4.4%	120
10	4.9%	131
11	5.3%	134
12	5.8%	140
13	6.3%	141
14	6.8%	150
15	7.3%	151
16	7.8%	153
17	8.3%	158
18	8.7%	163
19	9.2%	174
20	9.7%	179
21	10.2%	180
22	10.7%	200
23	11.2%	205
24	11.7%	208
25	12.1%	217
26	12.6%	217
27	13.1%	221
28	13.6%	221
29	14.1%	223
30	14.6%	224
31	15.0%	225
32	15.5%	230
33	16.0%	238
34	16.5%	240
35	17.0%	247
36	17.5%	251
37	18.0%	260
38	18.4%	264
39	18.9%	278
40	19.4%	285
41	19.9%	300
42	20.4%	305
43	20.9%	305
44	21.4%	310
45	21.8%	323
46	22.3%	325
47	22.8%	330
48	23.3%	331
49	23.8%	336
50	24.3%	338
51	24.8%	341
52	25.2%	345
53	25.7%	363
54	26.2%	364
55	26.7%	372
56	27.2%	373
57	27.7%	374
58	28.2%	380
59	28.6%	386
60	29.1%	389
61	29.6%	397
62	30.1%	398
63	30.6%	399
64	31.1%	401
65	31.6%	402
66	32.0%	405
67	32.5%	408
68	33.0%	408
69	33.5%	412

No.	Accumulated Distribution (%)	Loop Resistance (Ω)
70	34.0%	412
71	34.5%	415
72	35.0%	420
73	35.4%	430
74	35.9%	435
75	36.4%	440
76	36.9%	443
77	37.4%	449
78	37.9%	450
79	38.3%	450
80	38.8%	450
81	39.3%	451
82	39.8%	458
83	40.3%	460
84	40.8%	462
85	41.3%	462
86	41.7%	462
87	42.2%	464
88	42.7%	470
89	43.2%	470
90	43.7%	470
91	44.2%	470
92	44.7%	471
93	45.1%	476
94	45.6%	490
95	46.1%	491
96	46.6%	496
97	47.1%	500
98	47.6%	500
99	48.1%	508
100	48.5%	508
101	49.0%	512
102	49.5%	512
103	50.0%	515
104	50.5%	516
105	51.0%	519
106	51.5%	520
107	51.9%	529
108	52.4%	530
109	52.9%	535
110	53.4%	544
111	53.9%	547
112	54.4%	554
113	54.9%	558
114	55.3%	566
115	55.8%	582
116	56.3%	582
117	56.8%	583
118	57.3%	584
119	57.8%	586
120	58.3%	587
121	58.7%	587
122	59.2%	591
123	59.7%	594
124	60.2%	599
125	60.7%	600
126	61.2%	600
127	61.7%	600
128	62.1%	602
129	62.6%	614
130	63.1%	622
131	63.6%	624
132	64.1%	635
133	64.6%	637
134	65.0%	645
135	65.5%	650
136	66.0%	651
137	66.5%	680
138	67.0%	680

No.	Accumulated Distribution (%)	Loop Resistance (Ω)
139	67.5%	683
140	68.0%	683
141	68.4%	687
142	68.9%	689
143	69.4%	693
144	69.9%	698
145	70.4%	698
146	70.9%	700
147	71.4%	700
148	71.8%	700
149	72.3%	701
150	72.8%	712
151	73.3%	731
152	73.8%	732
153	74.3%	734
154	74.8%	737
155	75.2%	746
156	75.7%	747
157	76.2%	748
158	76.7%	758
159	77.2%	761
160	77.7%	761
161	78.2%	765
162	78.6%	765
163	79.1%	768
164	79.6%	771
165	80.1%	775
166	80.6%	798
167	81.1%	800
168	81.6%	800
169	82.0%	804
170	82.5%	810
171	83.0%	811
172	83.5%	812
173	84.0%	812
174	84.5%	817
175	85.0%	830
176	85.4%	830
177	85.9%	836
178	86.4%	848
179	86.9%	858
180	87.4%	865
181	87.9%	866
182	88.3%	887
183	88.8%	910
184	89.3%	924
185	89.8%	941
186	90.3%	943
187	90.8%	956
188	91.3%	964
189	91.7%	976
190	92.2%	981
191	92.7%	982
192	93.2%	990
193	93.7%	990
194	94.2%	1,006
195	94.7%	1,007
196	95.1%	1,015
197	95.6%	1,038
198	96.1%	1,053
199	96.6%	1,054
200	97.1%	1,057
201	97.6%	1,081
202	98.1%	1,095
203	98.5%	1,095
204	99.0%	1,127
205	99.5%	1,226
206	100.0%	1,270

6-6 Characteristics of Existing Local Cables (4/8)

Line Loss at 80kHz

Source; Progress Report of Investigation on Local
Cable Network for ISDN

No.	Accumulated Distribution (%)	Line Loss at 80kHz (dB)
1	0.5%	1.58
2	1.0%	1.93
3	1.5%	1.94
4	2.0%	1.96
5	2.5%	2.48
6	3.0%	2.88
7	3.5%	3.04
8	4.0%	3.90
9	4.5%	4.73
10	5.0%	4.96
11	5.5%	5.45
12	6.0%	5.76
13	6.5%	5.78
14	7.0%	5.95
15	7.5%	6.18
16	8.0%	7.00
17	8.5%	7.20
18	9.0%	7.35
19	9.5%	7.38
20	10.1%	7.96
21	10.6%	8.05
22	11.1%	8.13
23	11.6%	8.45
24	12.1%	8.50
25	12.6%	8.60
26	13.1%	8.98
27	13.6%	9.00
28	14.1%	9.25
29	14.6%	9.31
30	15.1%	9.70
31	15.6%	9.75
32	16.1%	9.81
33	16.6%	9.95
34	17.1%	10.32
35	17.6%	10.63
36	18.1%	10.65
37	18.6%	10.70
38	19.1%	10.95
39	19.6%	10.95
40	20.1%	11.00
41	20.6%	11.10
42	21.1%	11.23
43	21.6%	11.58
44	22.1%	11.85
45	22.6%	11.93
46	23.1%	12.29
47	23.6%	12.55
48	24.1%	12.60
49	24.6%	13.10
50	25.1%	13.42
51	25.6%	13.65
52	26.1%	13.65
53	26.6%	13.75
54	27.1%	13.85
55	27.6%	14.10
56	28.1%	14.15
57	28.6%	14.29
58	29.1%	14.33
59	29.6%	14.37
60	30.2%	14.67
61	30.7%	14.70
62	31.2%	14.88
63	31.7%	15.00
64	32.2%	15.15
65	32.7%	15.25
66	33.2%	15.40
67	33.7%	15.64
68	34.2%	16.13
69	34.7%	16.29

No.	Accumulated Distribution (%)	Line Loss at 80kHz (dB)
70	35.2%	16.30
71	35.7%	16.50
72	36.2%	16.68
73	36.7%	16.85
74	37.2%	17.02
75	37.7%	17.30
76	38.2%	17.50
77	38.7%	17.50
78	39.2%	17.60
79	39.7%	17.76
80	40.2%	18.00
81	40.7%	18.17
82	41.2%	18.25
83	41.7%	18.45
84	42.2%	18.55
85	42.7%	18.60
86	43.2%	18.65
87	43.7%	18.72
88	44.2%	18.75
89	44.7%	18.75
90	45.2%	18.90
91	45.7%	18.91
92	46.2%	19.50
93	46.7%	19.52
94	47.2%	19.65
95	47.7%	19.68
96	48.2%	19.93
97	48.7%	19.95
98	49.2%	20.15
99	49.7%	20.22
100	50.3%	20.38
101	50.8%	20.85
102	51.3%	21.35
103	51.8%	21.40
104	52.3%	21.48
105	52.8%	21.57
106	53.3%	21.72
107	53.8%	22.02
108	54.3%	22.17
109	54.8%	22.25
110	55.3%	22.30
111	55.8%	22.35
112	56.3%	22.50
113	56.8%	22.56
114	57.3%	22.72
115	57.8%	23.05
116	58.3%	23.18
117	58.8%	23.45
118	59.3%	23.60
119	59.8%	23.75
120	60.3%	23.83
121	60.8%	23.85
122	61.3%	23.90
123	61.8%	24.17
124	62.3%	24.45
125	62.8%	24.57
126	63.3%	24.70
127	63.8%	25.07
128	64.3%	25.32
129	64.8%	25.92
130	65.3%	26.45
131	65.8%	26.60
132	66.3%	26.66
133	66.8%	26.73
134	67.3%	26.85
135	67.8%	26.90
136	68.3%	27.03
137	68.8%	27.20
138	69.3%	27.23

No.	Accumulated Distribution (%)	Line Loss at 80kHz (dB)
139	69.8%	27.30
140	70.4%	27.45
141	70.9%	27.50
142	71.4%	27.61
143	71.9%	28.35
144	72.4%	28.80
145	72.9%	28.95
146	73.4%	28.98
147	73.9%	29.07
148	74.4%	29.20
149	74.9%	29.50
150	75.4%	29.62
151	75.9%	29.63
152	76.4%	29.67
153	76.9%	29.80
154	77.4%	29.95
155	77.9%	30.10
156	78.4%	30.32
157	78.9%	30.48
158	79.4%	30.50
159	79.9%	30.70
160	80.4%	31.04
161	80.9%	31.37
162	81.4%	31.45
163	81.9%	31.98
164	82.4%	32.20
165	82.9%	32.40
166	83.4%	32.75
167	83.9%	33.35
168	84.4%	33.86
169	84.9%	34.45
170	85.4%	34.84
171	85.9%	34.85
172	86.4%	35.18
173	86.9%	35.65
174	87.4%	36.08
175	87.9%	36.19
176	88.4%	36.30
177	88.9%	36.55
178	89.4%	37.12
179	89.9%	37.20
180	90.5%	37.48
181	91.0%	37.95
182	91.5%	38.22
183	92.0%	38.43
184	92.5%	39.34
185	93.0%	39.42
186	93.5%	39.43
187	94.0%	40.05
188	94.5%	40.60
189	95.0%	41.08
190	95.5%	42.27
191	96.0%	42.50
192	96.5%	43.55
193	97.0%	43.60
194	97.5%	44.45
195	98.0%	44.50
196	98.5%	46.95
197	99.0%	60.80
198	99.5%	68.80
199	100.0%	103.20

6-6 Characteristics of Existing Local Cables (5/8)

Line Loss at 160 kHz

Source: Progress Report of Investigation on Local
Cable Network for ISDN

No.	Accumulated Distribution (%)	Line Loss at 160kHz (dB)
1	0.5%	1.65
2	1.0%	2.05
3	1.5%	2.40
4	2.0%	2.41
5	2.5%	3.19
6	3.0%	3.78
7	3.5%	3.85
8	4.0%	4.95
9	4.5%	5.88
10	5.0%	6.09
11	5.5%	7.04
12	6.0%	7.10
13	6.5%	7.10
14	7.0%	7.23
15	7.5%	7.67
16	8.0%	8.35
17	8.5%	8.52
18	9.0%	8.75
19	9.5%	8.86
20	10.0%	9.55
21	10.5%	9.62
22	11.0%	9.78
23	11.5%	10.13
24	12.0%	10.20
25	12.5%	10.30
26	13.0%	10.50
27	13.5%	10.50
28	14.0%	10.85
29	14.5%	11.04
30	15.0%	11.24
31	15.5%	11.77
32	16.0%	11.85
33	16.5%	11.95
34	17.0%	12.10
35	17.5%	12.18
36	18.0%	12.50
37	18.5%	12.55
38	19.0%	12.57
39	19.5%	12.60
40	20.0%	12.70
41	20.5%	13.31
42	21.0%	13.57
43	21.5%	13.97
44	22.0%	14.50
45	22.5%	14.78
46	23.0%	14.80
47	23.5%	14.80
48	24.0%	15.92
49	24.5%	16.04
50	25.0%	16.23
51	25.5%	16.25
52	26.0%	16.25
53	26.5%	16.65
54	27.0%	16.78
55	27.5%	16.90
56	28.0%	17.10
57	28.5%	17.10
58	29.0%	17.17
59	29.5%	17.30
60	30.0%	17.39
61	30.5%	17.40
62	31.0%	17.50
63	31.5%	17.65
64	32.0%	17.95
65	32.5%	18.10
66	33.0%	18.30
67	33.5%	18.70
68	34.0%	18.90
69	34.5%	19.38

No.	Accumulated Distribution (%)	Line Loss at 160kHz (dB)
70	35.0%	19.50
71	35.5%	19.67
72	36.0%	19.73
73	36.5%	19.85
74	37.0%	19.94
75	37.5%	19.95
76	38.0%	20.50
77	38.5%	20.58
78	39.0%	20.80
79	39.5%	20.94
80	40.0%	21.15
81	40.5%	21.18
82	41.0%	21.40
83	41.5%	21.62
84	42.0%	21.81
85	42.5%	21.96
86	43.0%	22.00
87	43.5%	22.15
88	44.0%	22.35
89	44.5%	22.45
90	45.0%	22.75
91	45.5%	22.82
92	46.0%	22.88
93	46.5%	22.95
94	47.0%	23.15
95	47.5%	23.17
96	48.0%	23.27
97	48.5%	23.50
98	49.0%	23.52
99	49.5%	23.68
100	50.0%	23.75
101	50.5%	24.33
102	51.0%	24.65
103	51.5%	24.73
104	52.0%	25.48
105	52.5%	25.50
106	53.0%	25.67
107	53.5%	25.67
108	54.0%	25.72
109	54.5%	25.87
110	55.0%	25.95
111	55.5%	26.15
112	56.0%	26.23
113	56.5%	26.45
114	57.0%	26.95
115	57.5%	26.97
116	58.0%	27.00
117	58.5%	27.50
118	59.0%	27.63
119	59.5%	27.80
120	60.0%	27.90
121	60.5%	28.00
122	61.0%	28.45
123	61.5%	28.50
124	62.0%	28.52
125	62.5%	28.60
126	63.0%	28.70
127	63.5%	28.73
128	64.0%	29.18
129	64.5%	29.45
130	65.0%	29.97
131	65.5%	30.35
132	66.0%	31.17
133	66.5%	31.25
134	67.0%	31.28
135	67.5%	31.40
136	68.0%	31.40
137	68.5%	31.63
138	69.0%	31.75

No.	Accumulated Distribution (%)	Line Loss at 160kHz (dB)
139	69.5%	31.75
140	70.0%	31.83
141	70.5%	31.96
142	71.0%	32.28
143	71.5%	32.35
144	72.0%	32.65
145	72.5%	33.85
146	73.0%	34.00
147	73.5%	34.05
148	74.0%	34.23
149	74.5%	34.38
150	75.0%	34.50
151	75.5%	34.60
152	76.0%	34.77
153	76.5%	34.85
154	77.0%	34.87
155	77.5%	34.94
156	78.0%	35.10
157	78.5%	35.14
158	79.0%	35.28
159	79.5%	35.85
160	80.0%	36.02
161	80.5%	36.05
162	81.0%	36.40
163	81.5%	36.61
164	82.0%	36.96
165	82.5%	37.15
166	83.0%	38.27
167	83.5%	38.37
168	84.0%	39.78
169	84.5%	39.80
170	85.0%	39.96
171	85.5%	40.56
172	86.0%	40.68
173	86.5%	40.71
174	87.0%	41.37
175	87.5%	41.65
176	88.0%	41.70
177	88.5%	41.99
178	89.0%	42.45
179	89.5%	42.90
180	90.0%	43.00
181	90.5%	43.03
182	91.0%	44.25
183	91.5%	44.30
184	92.0%	45.15
185	92.5%	45.35
186	93.0%	45.55
187	93.5%	45.55
188	94.0%	46.68
189	94.5%	47.27
190	95.0%	47.58
191	95.5%	48.00
192	96.0%	48.30
193	96.5%	49.30
194	97.0%	50.15
195	97.5%	50.70
196	98.0%	51.40
197	98.5%	54.12
198	99.0%	58.80
199	99.5%	86.45
200	100.0%	113.50

6-6 Characteristics of Existing Local Cables (6/8)

AC Voltage

Source; Progress Report of Investigation on Local
Cable Network for ISDN

No.	Accumulated Distribution (%)	AC Voltage (V)
1	0.5%	0.000
2	1.0%	0.000
3	1.4%	0.000
4	1.9%	0.000
5	2.4%	0.000
6	2.9%	0.000
7	3.4%	0.000
8	3.8%	0.000
9	4.3%	0.000
10	4.8%	0.000
11	5.3%	0.000
12	5.8%	0.000
13	6.3%	0.000
14	6.7%	0.000
15	7.2%	0.000
16	7.7%	0.000
17	8.2%	0.000
18	8.7%	0.000
19	9.1%	0.000
20	9.6%	0.000
21	10.1%	0.000
22	10.6%	0.000
23	11.1%	0.000
24	11.5%	0.000
25	12.0%	0.000
26	12.5%	0.000
27	13.0%	0.000
28	13.5%	0.000
29	13.9%	0.000
30	14.4%	0.000
31	14.9%	0.000
32	15.4%	0.000
33	15.9%	0.000
34	16.3%	0.000
35	16.8%	0.000
36	17.3%	0.000
37	17.8%	0.000
38	18.3%	0.000
39	18.8%	0.000
40	19.2%	0.000
41	19.7%	0.000
42	20.2%	0.000
43	20.7%	0.000
44	21.2%	0.000
45	21.6%	0.000
46	22.1%	0.000
47	22.6%	0.000
48	23.1%	0.000
49	23.6%	0.000
50	24.0%	0.000
51	24.5%	0.000
52	25.0%	0.000
53	25.5%	0.000
54	26.0%	0.000
55	26.4%	0.000
56	26.9%	0.000
57	27.4%	0.000
58	27.9%	0.000
59	28.4%	0.000
60	28.8%	0.000
61	29.3%	0.000
62	29.8%	0.000
63	30.3%	0.000
64	30.8%	0.000
65	31.3%	0.000
66	31.7%	0.000
67	32.2%	0.000
68	32.7%	0.000
69	33.2%	0.000

No.	Accumulated Distribution (%)	AC Voltage (V)
70	33.7%	0.000
71	34.1%	0.000
72	34.6%	0.000
73	35.1%	0.000
74	35.6%	0.000
75	36.1%	0.000
76	36.5%	0.000
77	37.0%	0.000
78	37.5%	0.000
79	38.0%	0.000
80	38.5%	0.000
81	38.9%	0.000
82	39.4%	0.000
83	39.9%	0.000
84	40.4%	0.000
85	40.9%	0.000
86	41.3%	0.000
87	41.8%	0.000
88	42.3%	0.000
89	42.8%	0.000
90	43.3%	0.000
91	43.8%	0.000
92	44.2%	0.000
93	44.7%	0.000
94	45.2%	0.000
95	45.7%	0.000
96	46.2%	0.000
97	46.6%	0.000
98	47.1%	0.000
99	47.6%	0.000
100	48.1%	0.000
101	48.6%	0.000
102	49.0%	0.000
103	49.5%	0.000
104	50.0%	0.000
105	50.5%	0.000
106	51.0%	0.000
107	51.4%	0.000
108	51.9%	0.000
109	52.4%	0.000
110	52.9%	0.000
111	53.4%	0.000
112	53.8%	0.000
113	54.3%	0.000
114	54.8%	0.000
115	55.3%	0.000
116	55.8%	0.000
117	56.3%	0.000
118	56.7%	0.000
119	57.2%	0.000
120	57.7%	0.000
121	58.2%	0.000
122	58.7%	0.000
123	59.1%	0.000
124	59.6%	0.000
125	60.1%	0.000
126	60.6%	0.000
127	61.1%	0.000
128	61.5%	0.000
129	62.0%	0.000
130	62.5%	0.000
131	63.0%	0.000
132	63.5%	0.000
133	63.9%	0.000
134	64.4%	0.000
135	64.9%	0.000
136	65.4%	0.000
137	65.9%	0.000
138	66.3%	0.000

No.	Accumulated Distribution (%)	AC Voltage (V)
139	66.8%	0.000
140	67.3%	0.000
141	67.8%	0.000
142	68.3%	0.000
143	68.8%	0.000
144	69.2%	0.001
145	69.7%	0.001
146	70.2%	0.001
147	70.7%	0.002
148	71.2%	0.010
149	71.6%	0.010
150	72.1%	0.010
151	72.6%	0.010
152	73.1%	0.010
153	73.6%	0.010
154	74.0%	0.010
155	74.5%	0.010
156	75.0%	0.010
157	75.5%	0.010
158	76.0%	0.010
159	76.4%	0.010
160	76.9%	0.010
161	77.4%	0.010
162	77.9%	0.010
163	78.4%	0.010
164	78.8%	0.010
165	79.3%	0.010
166	79.8%	0.010
167	80.3%	0.010
168	80.8%	0.010
169	81.3%	0.010
170	81.7%	0.010
171	82.2%	0.010
172	82.7%	0.010
173	83.2%	0.010
174	83.7%	0.010
175	84.1%	0.010
176	84.6%	0.010
177	85.1%	0.010
178	85.6%	0.010
179	86.1%	0.010
180	86.5%	0.010
181	87.0%	0.020
182	87.5%	0.020
183	88.0%	0.020
184	88.5%	0.020
185	88.9%	0.020
186	89.4%	0.020
187	89.9%	0.020
188	90.4%	0.020
189	90.9%	0.020
190	91.3%	0.020
191	91.8%	0.020
192	92.3%	0.030
193	92.8%	0.030
194	93.3%	0.040
195	93.8%	0.050
196	94.2%	0.060
197	94.7%	0.060
198	95.2%	0.100
199	95.7%	0.100
200	96.2%	0.100
201	96.6%	0.100
202	97.1%	0.150
203	97.6%	0.300
204	98.1%	0.600
205	98.6%	0.700
206	99.0%	1.200
207 - 208		1.400

6-6 Characteristics of Existing Local Cables (7/8)

DC Voltage

Source: Progress Report of Investigation on Local
Cable Network for ISDN

No.	Accumulated Distribution (%)	DC Voltage (V)
1	0.5%	0.000
2	1.0%	0.000
3	1.5%	0.000
4	2.0%	0.000
5	2.5%	0.000
6	2.9%	0.000
7	3.4%	0.000
8	3.9%	0.000
9	4.4%	0.000
10	4.9%	0.000
11	5.4%	0.000
12	5.9%	0.000
13	6.4%	0.000
14	6.9%	0.000
15	7.4%	0.000
16	7.8%	0.000
17	8.3%	0.000
18	8.8%	0.000
19	9.3%	0.000
20	9.8%	0.000
21	10.3%	0.000
22	10.8%	0.000
23	11.3%	0.000
24	11.8%	0.000
25	12.3%	0.000
26	12.7%	0.000
27	13.2%	0.000
28	13.7%	0.000
29	14.2%	0.000
30	14.7%	0.000
31	15.2%	0.000
32	15.7%	0.000
33	16.2%	0.000
34	16.7%	0.000
35	17.2%	0.000
36	17.6%	0.000
37	18.1%	0.000
38	18.6%	0.000
39	19.1%	0.000
40	19.6%	0.000
41	20.1%	0.000
42	20.6%	0.000
43	21.1%	0.000
44	21.6%	0.000
45	22.1%	0.000
46	22.5%	0.000
47	23.0%	0.000
48	23.5%	0.000
49	24.0%	0.000
50	24.5%	0.000
51	25.0%	0.000
52	25.5%	0.000
53	26.0%	0.000
54	26.5%	0.000
55	27.0%	0.000
56	27.5%	0.000
57	27.9%	0.000
58	28.4%	0.000
59	28.9%	0.000
60	29.4%	0.000
61	29.9%	0.000
62	30.4%	0.000
63	30.9%	0.000
64	31.4%	0.000
65	31.9%	0.000
66	32.4%	0.008
67	32.8%	0.010
68	33.3%	0.010
69	33.8%	0.010

No.	Accumulated Distribution (%)	DC Voltage (V)
70	34.3%	0.010
71	34.8%	0.010
72	35.3%	0.010
73	35.8%	0.010
74	36.3%	0.010
75	36.8%	0.010
76	37.3%	0.013
77	37.7%	0.020
78	38.2%	0.020
79	38.7%	0.020
80	39.2%	0.020
81	39.7%	0.020
82	40.2%	0.020
83	40.7%	0.020
84	41.2%	0.020
85	41.7%	0.020
86	42.2%	0.020
87	42.6%	0.020
88	43.1%	0.020
89	43.6%	0.020
90	44.1%	0.020
91	44.6%	0.030
92	45.1%	0.030
93	45.6%	0.030
94	46.1%	0.030
95	46.6%	0.030
96	47.1%	0.030
97	47.5%	0.030
98	48.0%	0.030
99	48.5%	0.030
100	49.0%	0.030
101	49.5%	0.030
102	50.0%	0.030
103	50.5%	0.040
104	51.0%	0.040
105	51.5%	0.040
106	52.0%	0.040
107	52.5%	0.040
108	52.9%	0.050
109	53.4%	0.050
110	53.9%	0.050
111	54.4%	0.050
112	54.9%	0.050
113	55.4%	0.050
114	55.9%	0.050
115	56.4%	0.060
116	56.9%	0.060
117	57.4%	0.060
118	57.8%	0.060
119	58.3%	0.060
120	58.8%	0.070
121	59.3%	0.070
122	59.8%	0.080
123	60.3%	0.080
124	60.8%	0.083
125	61.3%	0.100
126	61.8%	0.100
127	62.3%	0.100
128	62.7%	0.100
129	63.2%	0.100
130	63.7%	0.100
131	64.2%	0.100
132	64.7%	0.100
133	65.2%	0.100
134	65.7%	0.100
135	66.2%	0.100
136	66.7%	0.110
137	67.2%	0.110
138	67.6%	0.110

No.	Accumulated Distribution (%)	DC Voltage (V)
139	68.1%	0.110
140	68.6%	0.114
141	69.1%	0.120
142	69.6%	0.130
143	70.1%	0.130
144	70.6%	0.140
145	71.1%	0.140
146	71.6%	0.150
147	72.1%	0.180
148	72.5%	0.180
149	73.0%	0.200
150	73.5%	0.200
151	74.0%	0.200
152	74.5%	0.200
153	75.0%	0.220
154	75.5%	0.240
155	76.0%	0.280
156	76.5%	0.290
157	77.0%	0.300
158	77.5%	0.300
159	77.9%	0.300
160	78.4%	0.300
161	78.9%	0.300
162	79.4%	0.300
163	79.9%	0.300
164	80.4%	0.330
165	80.9%	0.350
166	81.4%	0.350
167	81.9%	0.354
168	82.4%	0.370
169	82.8%	0.370
170	83.3%	0.380
171	83.8%	0.400
172	84.3%	0.400
173	84.8%	0.450
174	85.3%	0.500
175	85.8%	0.500
176	86.3%	0.500
177	86.8%	0.500
178	87.3%	0.500
179	87.7%	0.600
180	88.2%	0.600
181	88.7%	0.600
182	89.2%	0.600
183	89.7%	0.680
184	90.2%	0.700
185	90.7%	0.800
186	91.2%	0.900
187	91.7%	1.000
188	92.2%	1.000
189	92.6%	1.000
190	93.1%	1.000
191	93.6%	1.000
192	94.1%	1.000
193	94.6%	1.250
194	95.1%	1.300
195	95.6%	1.300
196	96.1%	1.500
197	96.6%	1.700
198	97.1%	1.800
199	97.5%	2.000
200	98.0%	2.400
201	98.5%	2.800
202	99.0%	4.600
203	99.5%	6.430
204	100.0%	10.500

6-6 Characteristics of Existing Local Cables (8/8)

Line Length from Exchanges to Subscribers and
Combination of Conductor Diameters

No.	Conductor Diameter					Total Length
	0.32	0.4	0.5	0.65	0.9	
1	507	127				634
2	507	230				737
3	809	241				1,050
4	507	1,017				1,524
5	993	650				1,643
6	507	1,249				1,756
7	507	1,855				2,362
8		244				244
9		325				325
10		325				325
11		325				325
12		345				345
13		398				398
14		420				420
15		454				454
16		539				539
17		605				605
18		720				720
19		750				750
20		770				770
21		777				777
22		801				801
23		874				874
24		908				908
25		910				910
26		921				921
27		937				937
28		946				946
29		949				949
30		959				959
31		962				962
32		977				977
33		992				992
34		997				997
35		1,030				1,030
36		1,050				1,050
37		1,105				1,105
38		1,110				1,110
39		1,124				1,124
40		1,159				1,159
41		1,159				1,159
42		1,159				1,159
43		1,178				1,178
44		1,267				1,267
45		1,351				1,351
46		1,411				1,411
47		1,414				1,414
48		1,418				1,418
49		1,432				1,432
50		1,432				1,432
51		1,553				1,553
52		1,587				1,587
53		1,592				1,592
54		1,606				1,606
55		1,612				1,612
56		1,675				1,675
57		1,688				1,688
58		1,722				1,722
59		1,730				1,730
60		1,760				1,760
61		1,779				1,779
62		1,781				1,781
63		1,788				1,788
64		1,806				1,806
65		1,820				1,820
66		1,855				1,855
67		1,929				1,929
68		1,963				1,963
69		1,968				1,968
70		2,007				2,007
71		2,021				2,021
72		2,027				2,027
73		2,045				2,045
74		2,079				2,079
75		2,090				2,090

Source ; Progress Report of Investigation on Local Cable Network
for ISDN

No.	Conductor Diameter					Total Length
	0.32	0.4	0.5	0.65	0.9	
76		2,103				2,103
77		2,150				2,150
78		2,150				2,150
79		2,157				2,157
80		2,191				2,191
81		2,231				2,231
82		2,241				2,241
83		2,241				2,241
84		2,332				2,332
85		2,341				2,341
86		2,361				2,361
87		2,379				2,379
88		2,435				2,435
89		2,484				2,484
90		2,505				2,505
91		2,560				2,560
92		2,563				2,563
93		2,610				2,610
94		2,655				2,655
95		2,663				2,663
96		2,680				2,680
97		2,694				2,694
98		2,795				2,795
99		2,818				2,818
100		2,915				2,915
101		2,935				2,935
102		2,999				2,999
103		3,071				3,071
104		3,139				3,139
105		3,310				3,310
106		3,585				3,585
107		3,725				3,725
108		3,800				3,800
109		3,825				3,825
110		3,833				3,833
111		3,937				3,937
112		263	28			290
113		540	230			770
114		92	1,106			1,198
115		492	715			1,207
116		1,240	40			1,280
117		1,360	100			1,460
118		1,078	452			1,530
119		1,468	94			1,562
120		85	2,652			2,737
121		189	2,565			2,754
122		2,983	58			3,041
123		3,043	310			3,353
124		70	3,703			3,773
125		2,864	1,010			3,874
126		1,263	2,897			4,160
127		181	4,025			4,206
128			1,106			1,106
129			3,323			3,323
130			4,098			4,098
131			5,842			5,842
132		34	2,860	288		3,182
133		2,999		478		3,477
134			4,545	700		5,245
135			4,283	1,754		6,037

ANNEX

CHAPTER 8 DEMAND FORECAST

8 - 1 Estimated Potential Telephone Demand by Base Case of GFP

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total Potential Subscriber	482,267	608,514	732,244	842,553	975,653	1,113,138	1,256,430	1,395,067	1,540,569	1,690,820	1,842,380	1,992,463	2,144,983	2,301,718	2,459,817	2,598,025	2,741,009	2,884,853	3,028,522	3,172,978	3,322,755
BKK Metropolises	18,134	24,269	29,540	47,921	55,594	64,144	73,928	84,455	96,641	111,098	124,380	139,025	155,556	173,887	194,611	214,996	237,756	261,292	285,822	311,659	339,207
Northaburi	63,025	86,861	106,816	158,235	179,813	201,511	224,086	244,773	265,619	288,548	312,299	336,887	362,993	389,873	419,126	444,117	471,191	498,729	526,106	554,766	585,207
Samut Prakan	29,809	34,059	43,418	63,920	75,209	86,883	98,718	109,994	122,069	134,525	146,881	159,680	172,766	186,118	199,528	213,197	226,179	239,444	252,795	266,500	280,742
Pathum Thani	30,617	32,820	35,199	46,173	50,421	55,055	60,546	67,260	74,602	82,871	91,883	101,706	112,471	124,025	136,672	150,299	163,233	176,792	190,855	205,577	220,960
Nakhon Pathom	29,161	31,698	33,747	59,338	64,451	69,616	75,557	82,262	89,262	96,550	103,992	111,694	119,533	127,660	135,973	144,425	152,384	160,507	168,665	177,105	185,847
Samut Sakhon	27,811	29,444	31,707	36,002	38,675	41,621	44,433	47,341	50,577	53,779	57,133	60,747	64,425	68,492	72,408	76,618	81,016	85,735	90,538	95,419	100,511
Ayuthaya	593,534	753,703	912,019	1,112,628	1,286,270	1,465,675	1,653,162	1,834,290	2,024,898	2,224,790	2,423,940	2,628,055	2,836,297	3,051,597	3,273,082	3,470,334	3,676,135	3,884,318	4,093,246	4,305,902	4,527,911
BMA Total	8,09	10,00	11,80	13,88	15,72	17,56	19,43	21,14	22,89	24,69	26,45	28,18	29,89	31,61	33,38	34,83	36,33	37,80	39,23	40,66	42,14
BMA Density	4,94	5,20	5,44	7,44	7,98	8,54	9,24	10,07	11,00	11,99	13,07	14,24	15,49	16,85	18,25	19,75	21,14	22,58	24,01	25,42	26,87
NPM Density	8,73	9,30	9,65	17,71	18,79	19,83	21,11	22,41	23,87	25,21	26,60	27,99	29,37	30,75	32,07	33,43	34,65	35,83	36,99	38,09	39,21
SKN Density	4,16	4,35	4,66	5,01	5,31	5,61	5,89	6,18	6,48	6,79	7,11	7,44	7,77	8,12	8,48	8,85	9,23	9,62	10,03	10,44	10,87
AYA Density	429,982	517,381	594,698	692,333	792,705	896,112	994,915	1,096,532	1,197,999	1,296,830	1,391,235	1,482,345	1,571,276	1,654,262	1,729,797	1,803,753	1,877,486	1,950,003	2,022,492	2,095,528	2,168,471
Potential Residential Subscriber	344,347	429,982	517,381	594,698	692,333	792,705	896,112	994,915	1,096,532	1,197,999	1,296,830	1,391,235	1,482,345	1,571,276	1,654,262	1,729,797	1,803,753	1,877,486	1,950,003	2,022,492	2,095,528
BKK Metropolises	13,860	18,122	21,744	38,526	44,606	51,661	59,786	68,585	78,821	90,991	102,286	114,782	128,891	144,555	162,224	179,683	199,115	219,214	240,130	262,122	285,471
Northaburi	43,628	59,336	72,956	118,520	135,392	152,352	169,902	186,093	202,453	220,250	238,585	257,385	277,175	297,260	318,654	337,768	358,145	379,053	399,875	421,729	444,797
Samut Prakan	22,459	24,294	31,177	49,627	58,844	68,366	77,977	87,130	96,805	106,562	116,409	126,246	136,202	146,093	155,914	165,598	174,955	184,383	193,825	203,385	213,563
Pathum Thani	27,765	29,062	30,880	41,172	44,814	48,805	53,484	59,190	65,409	72,431	80,072	88,386	97,486	107,211	117,844	129,229	140,037	151,304	162,944	174,914	187,142
Nakhon Pathom	24,912	25,545	26,847	51,553	55,965	60,428	65,485	71,159	76,991	83,074	89,211	95,497	101,834	108,312	114,928	121,499	127,749	134,072	140,406	147,026	153,810
Samut Sakhon	26,624	27,601	29,338	33,282	35,553	38,063	40,479	42,987	45,779	48,547	51,451	54,585	57,781	61,318	64,794	68,411	72,260	76,395	80,613	84,909	89,399
Ayuthaya	424,293	531,733	643,258	801,171	931,175	1,065,084	1,203,777	1,336,724	1,474,611	1,615,802	1,754,111	1,889,648	2,024,611	2,159,184	2,293,054	2,412,846	2,535,968	2,660,136	2,783,833	2,909,927	3,039,559
BMA Total	178,532	214,864	247,855	283,320	320,433	360,318	400,152	444,037	492,821	543,549	601,228	662,638	730,442	805,555	886,728	937,256	1,007,367	1,078,519	1,150,486	1,227,226	1,303,037
Potential Business Subscriber	4,274	6,148	7,796	9,595	10,988	12,483	14,142	15,870	17,820	20,107	22,093	24,243	26,665	29,333	32,387	35,313	38,641	42,078	45,693	49,537	53,736
BKK Metropolises	19,397	27,525	33,861	39,715	44,421	49,159	54,184	58,680	63,166	68,297	73,714	79,502	85,820	92,614	100,471	108,349	115,046	119,675	126,231	133,037	140,410
Northaburi	7,150	9,765	12,241	14,292	16,365	18,516	20,741	22,864	25,264	27,763	30,472	33,434	36,564	40,025	43,614	47,599	51,224	55,061	58,970	62,915	67,179
Samut Prakan	2,852	3,758	4,320	5,001	5,606	6,250	7,062	8,070	9,192	10,440	11,810	13,320	14,984	16,814	18,828	21,070	23,196	25,488	27,911	30,463	33,218
Pathum Thani	4,249	6,153	6,900	7,785	8,486	9,188	10,072	11,103	12,271	13,475	14,781	16,197	17,699	19,348	21,044	22,927	24,635	26,435	28,259	30,079	32,037
Nakhon Pathom	1,187	1,843	2,369	2,720	3,122	3,558	3,954	4,355	4,798	5,232	5,681	6,162	6,644	7,173	7,674	8,207	8,756	9,340	9,925	10,510	11,112
Samut Sakhon	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ayuthaya	169,241	221,970	268,761	311,457	355,095	400,591	449,385	497,566	550,288	608,988	671,829	738,407	811,686	892,614	982,028	1,057,489	1,140,167	1,224,181	1,309,413	1,395,975	1,488,552
BMA Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

8. 2. Estimated Potential Telephone Demand by High Case of GFP

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Total Potential Subscriber																						
BKK Metropolises	482,767	608,514	732,244	871,921	1,043,103	1,223,945	1,412,139	1,595,240	1,782,883	1,971,766	2,161,270	2,350,958	2,548,570	2,760,156	2,986,136	3,203,649	3,440,900	3,693,972	3,962,362	4,247,449	4,558,021	
Nonthaburi	18,134	24,269	29,540	35,423	41,307	47,254	53,236	59,264	65,333	71,443	77,599	83,804	90,058	96,362	102,716	109,120	115,574	122,038	128,502	134,966	141,430	
Samut Prakan	63,025	86,861	106,816	126,771	146,726	166,681	186,636	206,591	226,546	246,501	266,456	286,411	306,366	326,321	346,276	366,231	386,186	406,141	426,096	446,051	466,006	
Pathum Thani	29,609	34,059	38,509	42,959	47,409	51,859	56,309	60,759	65,209	69,659	74,109	78,559	83,009	87,459	91,909	96,359	100,809	105,259	109,709	114,159	118,609	
Nakhon Pathom	30,617	32,820	35,023	37,226	39,429	41,632	43,835	46,038	48,241	50,444	52,647	54,850	57,053	59,256	61,459	63,662	65,865	68,068	70,271	72,474	74,677	
Samut Sakhon	29,161	31,698	33,747	35,796	37,845	39,894	41,943	43,992	46,041	48,090	50,139	52,188	54,237	56,286	58,335	60,384	62,433	64,482	66,531	68,580	70,629	
Ayutthaya	27,811	29,444	31,077	32,710	34,343	35,976	37,609	39,242	40,875	42,508	44,141	45,774	47,407	49,040	50,673	52,306	53,939	55,572	57,205	58,838	60,471	
BMA Total	593,534	753,703	912,019	1,153,298	1,378,558	1,617,039	1,867,164	2,111,984	2,365,075	2,625,176	2,885,277	3,145,378	3,405,479	3,665,580	3,925,681	4,185,782	4,445,883	4,705,984	4,966,085	5,226,186	5,486,287	
BMA Density	8.09	10.00	11.80	14.39	16.83	19.38	21.95	24.34	26.73	29.13	31.46	33.77	36.10	38.53	41.11	43.47	46.02	48.65	51.38	54.25	57.35	
NPM Density	4.94	5.20	5.44	5.68	5.92	6.16	6.40	6.64	6.88	7.12	7.36	7.60	7.84	8.08	8.32	8.56	8.80	9.04	9.28	9.52	9.76	
SKN Density	8.73	9.30	9.65	10.00	10.35	10.70	11.05	11.40	11.75	12.10	12.45	12.80	13.15	13.50	13.85	14.20	14.55	14.90	15.25	15.60	15.95	
AYA Density	4.16	4.35	4.66	5.09	5.45	5.83	6.19	6.57	6.94	7.32	7.72	8.13	8.56	9.02	9.48	9.96	10.47	10.99	11.53	12.10	12.68	
Potential Residential Subscriber																						
BKK Metropolises	344,347	429,982	517,381	615,348	738,982	867,000	995,732	1,115,071	1,229,507	1,333,834	1,427,356	1,510,532	1,588,011	1,657,429	1,722,204	1,785,462	1,849,372	1,914,156	1,979,437	2,044,664	2,114,059	
Nonthaburi	13,860	18,122	21,744	25,366	29,000	32,644	36,288	39,932	43,576	47,220	50,864	54,508	58,152	61,796	65,440	69,084	72,728	76,372	80,016	83,660	87,304	
Samut Prakan	43,628	59,336	72,956	86,576	100,196	113,816	127,436	141,056	154,676	168,296	181,916	195,536	209,156	222,776	236,396	250,016	263,636	277,256	290,876	304,496	318,116	
Pathum Thani	22,459	24,294	26,129	27,964	29,799	31,634	33,469	35,304	37,139	38,974	40,809	42,644	44,479	46,314	48,149	49,984	51,819	53,654	55,489	57,324	59,159	
Nakhon Pathom	27,765	29,062	30,359	31,656	32,953	34,250	35,547	36,844	38,141	39,438	40,735	42,032	43,329	44,626	45,923	47,220	48,517	49,814	51,111	52,408	53,705	
Samut Sakhon	24,912	25,545	26,178	26,811	27,444	28,077	28,710	29,343	29,976	30,609	31,242	31,875	32,508	33,141	33,774	34,407	35,040	35,673	36,306	36,939	37,572	
Ayutthaya	26,624	27,601	28,578	29,555	30,532	31,509	32,486	33,463	34,440	35,417	36,394	37,371	38,348	39,325	40,302	41,279	42,256	43,233	44,210	45,187	46,164	
BMA Total	424,293	531,733	643,238	830,406	996,517	1,169,540	1,345,748	1,511,979	1,675,512	1,833,951	1,975,983	2,109,975	2,237,580	2,360,259	2,476,386	2,589,218	2,701,081	2,814,675	2,928,276	3,044,467	3,163,259	
Potential Business Subscriber																						
BKK Metropolises	138,420	178,532	214,864	256,573	304,121	356,945	416,408	480,169	553,376	637,933	733,914	840,426	962,559	1,102,727	1,263,931	1,417,186	1,591,528	1,779,816	1,982,925	2,201,385	2,443,922	
Nonthaburi	4,274	6,148	7,996	9,870	11,764	13,678	15,612	17,566	19,530	21,504	23,488	25,482	27,486	29,490	31,494	33,498	35,502	37,506	39,510	41,514	43,518	
Samut Prakan	19,397	27,525	33,861	41,465	48,379	55,880	63,383	70,886	78,389	85,892	93,395	100,898	108,401	115,904	123,407	130,910	138,413	145,916	153,419	160,922	168,425	
Pathum Thani	7,150	9,765	12,241	14,713	17,185	19,657	22,129	24,601	27,073	29,545	32,017	34,489	36,961	39,433	41,905	44,377	46,849	49,321	51,793	54,265	56,737	
Nakhon Pathom	2,852	3,758	4,320	5,233	6,139	7,052	7,965	8,878	9,791	10,704	11,617	12,530	13,443	14,356	15,269	16,182	17,095	18,008	18,921	19,834	20,747	
Samut Sakhon	4,249	6,153	6,900	8,050	9,168	10,328	11,488	12,648	13,808	14,968	16,128	17,288	18,448	19,608	20,768	21,928	23,088	24,248	25,408	26,568	27,728	
Ayutthaya	1,187	1,843	2,369	2,863	3,403	3,990	4,540	5,114	5,704	6,296	6,917	7,583	8,265	8,910	9,742	10,523	11,338	12,207	13,096	14,006	14,955	
BMA Total	169,241	221,970	268,761	322,891	382,041	447,499	521,416	599,916	689,562	793,225	909,733	1,039,656	1,188,338	1,358,780	1,555,091	1,742,601	1,955,295	2,185,087	2,432,967	2,700,399	2,997,917	

8 - 3 Estimated Potential Telephone Demand by Low Cost of GFP

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Total Potential Subscriber																					
BKK Metropolitan	482,767	608,514	732,244	823,450	932,893	1,042,764	1,155,880	1,263,053	1,376,021	1,494,401	1,613,704	1,732,727	1,855,309	1,982,578	2,112,005	2,217,004	2,328,033	2,433,266	2,537,742	2,640,597	2,746,099
Nonthaburi	18,134	24,269	29,540	46,011	50,960	56,062	61,570	66,965	73,066	80,161	86,796	93,840	101,754	110,430	120,269	128,999	138,910	148,945	159,372	170,366	182,326
Samut Prakan	63,025	86,861	106,816	133,533	169,585	185,528	201,855	215,608	229,312	244,730	261,023	277,847	295,861	314,683	335,925	352,266	370,585	388,723	406,309	424,625	444,359
Pathum Thani	29,609	34,059	43,418	62,642	72,293	82,034	91,728	100,711	110,432	120,244	130,493	140,927	151,713	162,962	174,227	185,984	196,631	207,560	218,449	229,441	240,925
Nakhon Pathom	30,617	32,820	35,199	45,408	48,699	52,169	56,218	61,199	66,323	72,044	78,092	84,514	91,429	98,695	106,620	115,110	122,869	130,991	139,411	148,113	157,167
Samut Sakhon	29,161	31,698	33,747	58,393	62,417	66,355	70,935	76,135	81,545	87,127	92,813	98,713	104,718	111,006	117,401	124,001	129,998	136,127	142,227	148,442	154,921
Ayutthaya	27,811	29,444	31,707	35,798	38,171	40,787	43,258	45,841	48,709	51,518	54,450	57,613	60,810	64,364	67,737	71,568	75,154	79,222	83,337	87,493	91,819
BMA Total	593,534	753,703	912,019	1,085,636	1,225,732	1,366,388	1,511,034	1,646,337	1,788,832	1,929,536	2,091,924	2,245,341	2,404,638	2,570,654	2,742,426	2,894,224	3,032,160	3,178,515	3,321,872	3,465,029	3,613,710
BMA Density	8.09	10.00	11.80	13.55	14.98	16.37	17.76	18.97	20.22	21.52	22.81	24.07	25.34	26.63	27.97	28.95	29.97	30.93	31.84	32.72	33.63
NFM Density	4.94	5.20	5.44	7.31	7.71	8.09	8.58	9.15	9.78	10.43	11.11	11.84	12.59	13.41	14.23	15.13	15.92	16.73	17.54	18.33	19.17
SKN Density	8.73	9.30	9.65	17.43	18.20	18.90	19.81	20.75	21.80	22.75	23.74	24.74	25.73	26.75	27.69	28.70	29.54	30.39	31.19	31.92	32.68
AYA Density	4.16	4.35	4.66	4.99	5.24	5.50	5.74	5.98	6.24	6.50	6.77	7.05	7.34	7.64	7.93	8.24	8.56	8.89	9.23	9.57	9.93
Potential Residential Subscriber																					
BKK Metropolitan	344,347	429,982	517,381	581,224	662,407	744,133	828,151	907,889	991,588	1,078,248	1,164,941	1,250,944	1,338,080	1,427,243	1,515,496	1,591,081	1,668,204	1,744,998	1,820,493	1,895,926	1,972,995
Nonthaburi	13,860	18,122	21,744	36,838	40,959	45,243	49,891	54,484	59,693	65,750	71,483	77,600	84,474	92,032	100,606	108,313	117,060	125,985	135,253	145,083	155,795
Samut Prakan	43,628	59,336	72,956	115,006	127,808	140,613	153,773	165,103	176,519	189,298	202,828	216,852	231,877	247,590	265,201	279,375	295,144	310,965	326,463	342,704	360,189
Pathum Thani	22,459	24,294	31,177	48,614	56,540	64,561	72,553	80,008	88,034	96,154	104,530	113,161	122,019	131,183	140,581	149,859	158,683	167,718	176,779	186,034	195,678
Nakhon Pathom	27,765	29,062	30,380	40,574	43,461	46,525	50,051	54,318	58,801	63,768	69,023	74,602	80,620	86,937	93,849	101,246	108,066	115,213	122,647	130,354	138,571
Samut Sakhon	24,912	25,545	26,847	50,824	54,599	57,922	61,956	66,519	71,221	76,116	81,084	86,233	91,478	96,953	102,563	108,311	113,638	119,093	124,560	130,198	136,070
Ayutthaya	26,624	27,601	29,338	33,131	35,180	37,444	39,606	41,868	44,383	46,832	49,433	52,220	55,044	58,182	61,174	64,596	67,761	71,380	75,050	78,766	82,640
BMA Total	424,293	531,753	643,258	781,682	887,714	994,549	1,104,368	1,207,484	1,315,833	1,429,451	1,543,782	1,658,537	1,776,449	1,898,049	2,021,684	2,128,628	2,239,091	2,349,665	2,458,989	2,569,746	2,684,657
Potential Business Subscriber																					
BKK Metropolitan	138,420	178,532	214,864	242,227	270,486	298,632	327,729	355,164	384,434	416,153	448,763	481,783	517,220	555,335	596,509	625,924	657,829	688,269	717,248	744,671	773,105
Nonthaburi	4,274	6,148	7,796	9,173	10,001	10,819	11,679	12,481	13,372	14,411	15,313	16,240	17,281	18,398	19,663	20,686	21,851	22,980	24,119	25,284	26,531
Samut Prakan	19,397	27,525	33,861	38,527	41,777	44,915	48,082	50,505	52,794	55,432	58,194	60,994	63,985	67,093	70,724	72,891	75,441	77,758	79,846	81,921	84,170
Pathum Thani	7,150	9,765	12,241	14,027	15,754	17,473	19,175	20,703	22,399	24,090	25,872	27,767	29,694	31,779	33,846	36,095	37,948	39,842	41,671	43,407	45,247
Nakhon Pathom	2,852	3,758	4,320	4,834	5,238	5,644	6,167	6,821	7,322	8,275	9,069	9,912	10,809	11,758	12,771	13,864	14,803	15,777	16,765	17,759	18,796
Samut Sakhon	4,249	6,153	6,900	7,569	8,019	8,433	8,980	9,617	10,324	11,011	11,729	12,480	13,241	14,052	14,837	15,690	16,360	17,035	17,667	18,244	18,851
Ayutthaya	1,187	1,843	2,369	2,667	2,991	3,343	3,652	3,973	4,327	4,666	5,017	5,393	5,767	6,182	6,564	6,973	7,393	7,842	8,287	8,727	9,179
BMA Total	169,241	221,970	268,761	303,933	338,018	371,839	406,666	438,854	472,998	510,086	548,142	586,784	628,189	672,605	720,742	755,596	795,069	828,849	862,883	895,283	929,052

8 - 4 Estimated Telephone Demand by Logistic Model for BMA (Base Case of GPP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Results of Logistic Model																						
BKK Metropolises	795,222	954,398	1,123,023	1,299,204	1,489,909	1,690,338	1,903,861	2,112,446	2,334,260	2,567,917	2,802,891	3,029,626	3,254,034	3,472,033	3,676,386	3,829,450	3,974,137	4,103,988	4,220,722	4,323,955	4,419,305	
Northaburi	36,261	44,725	52,923	60,695	68,325	76,671	86,101	96,133	107,662	121,440	133,678	147,087	162,389	179,434	199,161	218,115	239,749	262,076	283,455	310,135	336,769	
Samut Prakan	99,436	131,492	159,482	189,686	214,863	240,203	266,835	290,463	313,736	339,868	366,770	394,529	423,912	453,965	486,895	511,388	538,039	563,827	588,480	613,574	639,265	
Pathum Thani	53,215	57,076	70,733	84,243	98,770	114,161	130,183	145,428	162,411	179,726	197,862	216,726	235,723	255,224	274,115	293,080	309,503	325,578	340,841	355,621	370,335	
BMA	970,732	1,171,875	1,388,148	1,618,118	1,854,816	2,103,989	2,370,724	2,630,841	2,909,225	3,208,022	3,511,014	3,812,066	4,118,602	4,425,267	4,726,388	4,961,677	5,191,592	5,404,255	5,600,747	5,782,126	5,955,994	
Demand / 100 Persons																						
BKK Metropolises	14.18	16.69	19.25	21.08	23.77	26.54	29.43	32.13	34.95	37.91	40.80	43.53	46.14	48.57	50.83	52.30	53.67	54.79	55.70	56.46	57.11	
Northaburi	6.34	7.50	8.43	9.95	10.79	11.69	12.68	13.67	14.79	16.11	17.16	18.32	19.59	20.99	22.63	24.05	25.67	27.27	28.86	30.50	32.23	
Samut Prakan	13.40	18.66	19.23	23.68	26.01	28.19	30.43	32.13	33.70	35.44	37.16	38.95	40.68	42.47	44.34	45.42	46.58	47.58	48.47	49.21	50.14	
Pathum Thani	12.82	13.11	16.01	19.10	21.76	24.39	27.07	29.32	31.91	34.30	36.78	39.33	41.65	44.00	46.07	48.12	49.60	50.95	52.12	53.08	53.98	
Nakhon Pathom	-1.57	-0.89	-0.66	-0.54	-0.47	-0.42	-0.38	-0.36	-0.34	-0.32	-0.31	-0.30	-0.29	-0.29	-0.28	-0.28	-0.27	-0.27	-0.26	-0.26	-0.25	
a	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
at	13.23	15.55	17.95	20.19	22.68	25.21	27.87	30.32	32.88	35.60	38.28	40.87	43.40	45.84	48.20	49.80	51.31	52.59	53.68	54.60	55.44	
	-1.57	-1.78	-1.98	-2.15	-2.33	-2.51	-2.69	-2.85	-3.02	-3.21	-3.40	-3.59	-3.79	-4.00	-4.24	-4.41	-4.61	-4.79	-4.97	-5.14	-5.33	
BMA	13.23	15.55	17.95	20.19	22.68	25.21	27.87	30.32	32.88	35.60	38.28	40.87	43.40	45.84	48.20	49.80	51.31	52.59	53.68	54.60	55.44	

8 - 5 Estimated Telephone Demand by Logistic Model for BMA (High Case of GPP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Results of Logistic Model																					
BKK Metropolitan	795,222	954,398	1,123,023	1,345,967	1,602,625	1,885,375	2,193,273	2,500,646	2,817,601	3,130,115	3,418,795	3,667,772	3,881,588	4,059,750	4,198,343	4,301,617	4,386,651	4,460,503	4,526,261	4,583,621	4,636,229
Nonthaburi	36,261	44,725	52,923	63,388	74,474	87,606	103,567	121,990	144,386	172,200	200,670	233,509	271,119	312,591	357,956	399,985	443,064	483,518	521,318	556,070	587,877
Saenai Prakan	99,436	131,492	159,482	198,919	235,716	274,932	317,218	357,013	396,549	438,280	478,095	516,485	553,783	587,709	620,221	646,110	671,269	695,023	716,783	738,069	759,177
Patum Thani	53,215	57,076	70,733	87,098	105,765	126,575	149,100	171,489	196,021	220,788	245,555	269,469	292,024	312,692	331,207	347,500	361,667	374,484	386,265	397,780	408,790
BMA	970,732	1,171,875	1,388,148	1,679,869	2,002,660	2,360,758	2,755,462	3,153,257	3,570,926	3,996,461	4,399,828	4,764,432	5,092,800	5,377,222	5,613,336	5,794,767	5,951,227	6,088,913	6,212,318	6,324,013	6,428,494
Demand / 100 Persons																					
BKK Metropolitan	14.18	16.69	19.25	21.84	25.57	29.60	33.90	38.04	42.19	46.21	49.77	52.70	55.03	56.79	58.04	58.75	59.24	59.54	59.73	59.85	59.92
Nonthaburi	6.34	7.50	8.43	10.39	11.77	13.35	15.25	17.35	19.83	22.84	25.76	29.08	32.70	36.56	40.68	44.10	47.44	50.31	52.71	54.68	56.26
Saenai Prakan	13.40	16.66	19.23	24.83	28.54	32.27	36.17	39.49	42.59	45.70	48.44	50.99	53.15	54.98	56.49	57.38	58.12	58.65	59.04	59.33	59.54
Patum Thani	12.82	13.11	16.01	19.75	23.30	27.05	31.00	34.57	38.51	42.14	45.64	48.91	51.59	53.91	55.67	57.06	57.95	58.60	59.06	59.37	59.59
BMA	13.23	15.55	17.95	20.96	24.48	28.29	32.39	36.34	40.36	44.35	47.96	51.08	53.66	55.71	57.24	58.16	58.82	59.25	59.54	59.72	59.83

8 - 6 Estimated Telephone Demand by Logistic Model for BMA (Low Case of GPP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Results of Logistic Model																					
BKK Metropolis	795,222	954,398	1,123,023	1,269,149	1,420,597	1,572,899	1,729,282	1,876,314	2,031,375	2,196,424	2,361,909	2,524,404	2,692,430	2,865,121	3,040,658	3,162,979	3,289,157	3,405,675	3,513,374	3,611,965	3,709,937
Northaburi	36,261	44,725	52,923	58,651	65,406	68,152	73,150	77,900	83,171	89,282	94,712	100,290	106,561	113,301	120,917	127,198	134,325	141,278	148,317	155,538	163,275
Sarut Prakan	99,436	131,492	159,482	183,403	200,798	217,667	234,704	247,755	260,102	274,342	289,203	304,206	320,217	336,774	356,019	367,657	381,285	393,739	404,999	416,233	428,384
Patum Thani	52,215	57,076	70,753	82,477	94,361	106,838	119,124	130,205	142,482	154,698	167,443	180,826	194,283	208,521	222,387	237,021	249,054	261,138	272,667	283,659	295,087
BMA	970,732	1,171,875	1,388,148	1,577,693	1,761,035	1,944,779	2,134,629	2,309,610	2,494,457	2,693,342	2,894,236	3,094,857	3,305,123	3,524,656	3,754,018	3,918,908	4,090,519	4,251,565	4,402,358	4,543,893	4,688,100
Demand / 100 Persons																					
BKK Metropolis	14.18	16.69	19.25	20.60	22.67	24.68	26.73	28.54	30.41	32.42	34.39	36.27	38.17	40.08	42.04	43.20	44.42	45.46	46.37	47.16	47.94
Northaburi	6.34	7.50	8.43	9.61	10.02	10.39	10.77	11.08	11.42	11.84	12.16	12.49	12.85	13.25	13.74	14.02	14.38	14.70	15.00	15.29	15.62
Sarut Prakan	13.40	16.66	19.23	22.90	24.31	25.55	26.76	27.41	27.94	28.61	29.30	30.03	30.73	31.50	32.42	32.65	33.01	33.23	33.36	33.46	33.60
Patum Thani	12.82	13.11	16.01	18.70	20.83	22.83	24.77	26.25	27.99	29.52	31.12	32.82	34.33	35.95	37.38	38.92	39.91	40.87	41.69	42.34	43.02
BMA	13.23	15.35	17.95	19.69	21.53	23.30	25.09	26.62	28.20	29.89	31.55	33.18	34.83	36.51	38.28	39.33	40.43	41.37	42.19	42.91	43.63

8 - 7 Estimated Telephone Demand by Income Elasticity Model (Base Case of GPP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Results of Elasticity Model																					
BKK Metropolises	712,708	823,498	931,964	1,049,746	1,160,382	1,272,965	1,390,013	1,504,421	1,627,093	1,758,969	1,897,771	2,040,501	2,194,016	2,359,382	2,536,534	2,683,610	2,841,495	2,999,610	3,157,748	3,314,881	3,479,271
Nonthaburi	30,272	40,259	48,893	56,697	63,636	70,899	78,743	86,773	95,629	105,736	114,521	123,797	134,092	145,183	157,501	169,904	182,397	195,731	209,598	224,109	239,649
Saenat Prakan	90,090	113,510	132,999	147,936	162,799	177,609	192,955	206,863	220,659	236,132	252,213	268,946	287,128	306,165	327,811	344,464	363,094	381,579	399,719	418,484	438,594
Pathum Thani	48,585	51,915	61,681	70,068	79,054	88,225	97,451	106,289	115,886	125,849	136,352	147,502	159,243	171,848	184,799	198,761	211,551	224,882	238,318	251,875	266,285
Nakhon Pathom	10,737	11,511	12,674	13,930	15,284	16,601	18,228	20,180	22,255	24,516	26,912	29,462	32,189	35,093	38,230	41,608	44,733	48,621	51,442	54,990	58,717
Samut Sakhon	12,274	12,900	14,091	15,334	16,592	17,838	19,335	21,038	22,883	24,789	26,791	28,918	31,130	33,507	35,957	38,550	40,907	43,353	45,802	48,254	50,852
Ayuthaya	7,792	8,392	9,468	10,359	11,244	12,187	13,024	13,858	14,769	15,635	16,516	17,446	18,360	19,358	20,271	21,236	22,217	23,251	24,267	25,264	26,279
BMA	881,559	1,029,086	1,174,836	1,324,363	1,465,977	1,609,594	1,759,047	1,904,222	2,059,130	2,226,536	2,400,685	2,580,551	2,774,258	2,982,328	3,206,363	3,395,830	3,598,198	3,801,433	4,004,982	4,208,914	4,423,529
Demand / 100 Persons																					
BKK Metropolises	12.71	14.40	15.98	17.04	18.52	19.98	21.48	22.88	24.36	25.97	27.63	29.32	31.11	33.00	35.07	36.65	38.37	40.04	41.67	43.28	44.96
Nonthaburi	5.29	6.75	7.79	9.29	10.05	10.81	11.60	12.34	13.14	14.02	14.70	15.42	16.18	16.98	17.90	18.67	19.53	20.37	21.19	22.04	22.93
Saenat Prakan	12.14	14.39	15.96	18.47	19.71	20.85	22.00	22.88	23.70	24.62	25.55	26.55	27.56	28.64	29.86	30.59	31.44	32.20	32.93	33.64	34.40
Pathum Thani	11.70	11.92	13.96	15.89	17.41	18.85	20.26	21.43	22.77	24.02	25.34	26.77	28.13	29.63	31.06	32.64	33.90	35.19	36.44	37.59	38.82
Nakhon Pathom	1.73	1.82	1.96	2.24	2.41	2.57	2.78	3.02	3.28	3.55	3.83	4.13	4.44	4.77	5.10	5.47	5.79	6.13	6.47	6.81	7.16
Samut Sakhon	3.67	3.78	4.03	4.58	4.84	5.08	5.40	5.73	6.12	6.47	6.85	7.25	7.65	8.07	8.48	8.92	9.30	9.68	10.04	10.38	10.73
Ayuthaya	1.17	1.24	1.39	1.44	1.54	1.64	1.73	1.81	1.89	1.97	2.05	2.14	2.21	2.30	2.37	2.45	2.53	2.61	2.69	2.76	2.84
BMA	12.01	13.65	15.19	16.53	17.92	19.29	20.68	21.95	23.27	24.71	26.17	27.67	29.23	30.90	32.70	34.08	35.56	36.99	38.38	39.74	41.17

8 - 8 Estimated Telephone Demand by Income Elasticity Model (High Case of GPP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Results of Logistic Model																					
BKK Metropolitan	712,708	823,498	931,964	1,075,989	1,220,664	1,374,181	1,540,278	1,711,791	1,901,231	2,110,730	2,339,471	2,583,693	2,853,553	3,152,100	3,480,919	3,785,580	4,120,083	4,471,101	4,839,012	5,222,814	5,636,173
Nonthaburi	30,272	40,259	48,893	59,155	68,815	79,424	91,354	104,199	118,796	135,802	152,501	171,079	192,174	215,684	242,438	269,310	299,706	332,182	367,302	405,457	447,539
Sarut Prakan	90,090	113,510	132,399	152,882	173,661	195,576	219,383	242,826	267,386	295,314	324,687	356,858	392,631	431,467	476,011	515,279	559,448	605,583	653,462	704,688	760,655
Pathum Thani	48,583	51,915	61,681	71,749	82,903	94,770	107,245	119,847	133,884	148,996	165,443	183,431	202,987	224,539	247,542	272,957	297,953	324,808	353,060	382,780	415,132
Nakhon Pathom	10,737	11,511	12,674	14,371	16,218	18,241	20,667	23,598	26,841	30,488	34,507	38,946	43,875	49,293	55,337	62,061	68,772	76,091	83,999	92,520	101,794
Sarut Sakthon	12,274	12,900	14,097	15,776	17,568	19,446	21,702	24,313	27,231	30,379	33,816	37,597	41,693	46,231	51,086	56,465	61,757	67,462	73,475	79,809	86,715
Ayuthaya	7,792	8,392	9,468	10,632	11,759	12,948	14,027	15,122	16,239	17,322	18,433	19,605	20,774	22,040	23,236	24,498	25,792	27,156	28,518	29,880	31,277
BMA	881,559	1,029,086	1,174,836	1,359,691	1,545,948	1,743,847	1,958,146	2,178,537	2,421,160	2,690,692	2,981,930	3,294,867	3,641,125	4,023,540	4,446,646	4,842,813	5,276,821	5,733,288	6,212,409	6,715,269	7,258,982
Demand / 100 Persons																					
BKK Metropolitan	12.71	14.40	15.98	17.46	19.48	21.57	23.81	26.04	28.47	31.16	34.06	37.12	40.46	44.09	48.13	51.70	55.64	59.69	63.86	68.19	72.84
Nonthaburi	5.29	6.75	7.79	9.70	10.87	12.11	13.45	14.82	16.32	18.01	19.58	21.30	23.18	25.23	27.55	29.69	32.09	34.57	37.14	39.87	42.83
Sarut Prakan	12.14	14.39	15.96	19.09	21.02	22.95	25.02	26.86	28.72	30.79	32.90	35.23	37.68	40.36	43.35	45.76	48.44	51.10	53.83	56.65	59.66
Pathum Thani	11.70	11.92	13.96	16.27	18.26	20.25	22.30	24.16	26.30	28.43	30.75	33.29	35.86	38.71	41.60	44.82	47.75	50.83	53.98	57.13	60.51
Nakhon Pathom	1.73	1.82	1.96	2.31	2.57	2.83	3.16	3.53	3.96	4.41	4.91	5.45	6.04	6.70	7.39	8.16	8.91	9.72	10.57	11.45	12.41
Sarut Sakthon	3.67	3.78	4.03	4.71	5.12	5.54	6.06	6.62	7.28	7.93	8.65	9.42	10.24	11.14	12.06	13.07	14.04	15.06	16.11	17.16	18.29
Ayuthaya	1.17	1.24	1.39	1.48	1.61	1.74	1.86	1.97	2.08	2.19	2.29	2.40	2.51	2.61	2.72	2.83	2.94	3.05	3.16	3.27	3.38
BMA	12.01	13.65	15.19	16.97	18.90	20.89	23.02	25.11	27.37	29.86	32.51	35.33	38.37	41.68	45.35	48.60	52.15	55.79	59.54	63.41	67.56

8 - 9 Estimated Telephone Demand by Income Elasticity Model (Low Case of GPP)

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	
Results of Logistic Model																						
BKK Metropolitan	712,708	823,498	931,964	1,032,655	1,122,840	1,210,686	1,299,436	1,382,290	1,469,014	1,560,434	1,652,852	1,744,805	1,841,861	1,944,507	2,052,346	2,130,992	2,214,481	2,294,127	2,369,888	2,441,162	2,514,159	
Northaburi	30,272	40,259	48,893	54,774	59,226	63,601	68,138	72,414	77,098	82,435	87,152	91,932	97,244	102,861	109,044	114,250	120,090	125,851	131,332	137,112	143,212	
Samut Prakan	90,090	113,510	132,399	144,523	155,344	165,839	176,295	184,758	192,846	201,971	211,411	220,794	230,888	241,143	252,931	260,713	269,596	277,931	285,582	293,281	301,572	
Pathum Thani	48,585	51,915	61,681	69,014	76,684	84,267	91,632	98,379	105,578	112,837	120,305	128,035	136,016	144,405	152,749	161,593	169,128	176,778	184,181	191,350	198,852	
Nakhon Pathom	10,737	11,511	12,674	13,618	14,555	15,498	16,635	18,008	19,422	20,930	22,479	24,078	25,753	27,468	29,296	31,217	32,854	34,529	36,219	37,920	39,656	
Samut Sakhon	12,274	12,900	14,097	15,032	15,941	16,788	17,828	19,004	20,250	21,487	22,746	24,047	25,352	26,724	28,066	29,481	30,626	31,773	32,858	33,883	34,949	
Ayutthaya	7,792	8,392	9,468	10,256	11,000	11,797	12,491	13,198	13,972	14,697	15,435	16,218	16,982	17,826	18,583	19,386	20,204	21,070	21,914	22,737	23,572	
BMA	881,559	1,029,086	1,174,836	1,300,881	1,413,995	1,524,280	1,635,373	1,737,698	1,844,375	1,957,496	2,071,516	2,185,358	2,305,782	2,432,629	2,566,752	2,667,203	2,772,861	2,874,084	2,970,552	3,062,446	3,157,254	
Demand / 100 Persons																						
BKK Metropolitan	12.71	14.40	15.98	16.76	17.92	19.01	20.08	21.03	21.99	23.04	24.06	25.07	26.11	27.20	28.37	29.10	29.91	30.63	31.28	31.87	32.49	
Northaburi	5.29	6.75	7.79	8.98	9.36	9.70	10.04	10.30	10.59	10.93	11.19	11.45	11.73	12.03	12.39	12.60	12.85	13.08	13.28	13.48	13.70	
Samut Prakan	12.14	14.39	15.96	18.04	18.81	19.46	20.10	20.44	20.71	21.06	21.42	21.80	22.16	22.56	23.04	23.15	23.34	23.45	23.52	23.58	23.65	
Pathum Thani	11.70	11.92	13.96	15.65	16.89	18.01	19.05	19.83	20.74	21.53	22.36	23.24	24.03	24.90	25.67	26.53	27.10	27.66	28.16	28.56	28.99	
Nakhon Pathom	1.73	1.82	1.96	2.19	2.30	2.40	2.54	2.70	2.86	3.03	3.20	3.37	3.55	3.73	3.91	4.10	4.26	4.41	4.56	4.69	4.84	
Samut Sakhon	3.67	3.78	4.03	4.49	4.65	4.78	4.98	5.18	5.41	5.61	5.82	6.03	6.23	6.44	6.62	6.82	6.96	7.09	7.21	7.29	7.37	
Ayutthaya	1.17	1.24	1.39	1.43	1.51	1.59	1.66	1.72	1.79	1.86	1.92	1.99	2.05	2.11	2.18	2.24	2.30	2.36	2.43	2.49	2.55	
BMA	12.01	13.65	15.19	16.23	17.29	18.26	19.22	20.03	20.85	21.72	22.58	23.43	24.30	25.20	26.18	26.77	27.41	27.97	28.47	28.92	29.39	

8 - 10 Monthly Household Income Distribution Patterns by Region in 1986, 1988

Year	No.	Monthly Incom	BMA	Central	Northern	Northeastern	Southern
1986	1	250	0.10	0.00	0.10	0.10	0.20
1986	2	499	0.20	0.20	2.60	2.40	1.50
1986	3	749	0.70	3.40	8.30	7.40	4.80
1986	4	999	1.50	8.40	15.30	17.20	10.40
1986	5	1249	2.90	14.60	23.80	28.70	17.40
1986	6	1499	4.30	22.00	32.30	38.80	25.40
1986	7	1999	8.10	33.70	47.90	56.30	40.70
1986	8	2499	13.00	46.20	57.90	69.60	50.30
1986	9	2999	20.10	55.60	67.00	77.00	60.30
1986	10	3499	27.40	63.10	73.10	82.50	67.40
1986	11	3999	36.10	68.90	76.70	86.20	73.00
1986	12	4499	42.90	73.80	81.80	88.70	76.90
1986	13	4999	48.10	79.30	84.10	90.90	80.40
1986	14	5999	59.60	84.40	88.30	94.00	86.10
1986	15	6999	68.00	88.60	92.70	95.40	89.20
1986	16	7999	74.70	91.20	94.70	96.80	92.00
1986	17	8999	79.50	93.70	95.60	97.70	94.10
1986	18	9999	83.00	95.00	97.30	98.00	95.20
1986	19	10999	86.50	96.00	97.70	98.40	96.10
1986	20	11,000<=	100.00	100.00	100.00	100.00	100.00
1988	1	250	0.1	0.1	0.0	0.0	0.0
1988	2	499	0.5	1.1	0.1	1.3	0.0
1988	3	749	0.9	3.7	2.2	4.7	1.0
1988	4	999	1.3	8.2	6.7	12.3	1.6
1988	5	1249	2.3	13.4	12.1	22.1	3.6
1988	6	1499	3.5	19.9	20.2	31.7	4.9
1988	7	1999	7.3	32.8	40.3	50.5	10.7
1988	8	2499	12.5	44.6	55.4	64.1	16.9
1988	9	2999	18.5	55.3	66.4	73.3	24.3
1988	10	3499	23.7	62.3	74.9	79.5	28.4
1988	11	3999	29.0	68.5	80.6	84.0	34.5
1988	12	4499	35.6	74.5	84.4	87.2	43.6
1988	13	4999	40.4	78.5	87.8	89.9	48.6
1988	14	5999	50.5	84.4	91.2	93.7	60.5
1988	15	6999	58.7	88.3	94.1	95.5	68.7
1988	16	7999	65.3	91.0	95.8	96.7	74.1
1988	17	8999	70.7	93.9	97.0	97.5	77.4
1988	18	9999	74.5	95.1	97.5	98.4	81.0
1988	19	10999	78.0	96.5	98.0	98.8	84.2
1988	20	11,000<=	100.0	100.0	100.0	100.0	100.0

Source: National Statistical Office, Office of the Prime Minister,
THE 1986 HOUSEHOLDS SOCIO-ECONOMIC SURVEY,
THE 1988 HOUSEHOLDS SOCIO-ECONOMIC SURVEY

8 - 11 Statistics for GPP in 1986, 1988 (Thousand Baht)

Changwat / Region	GPP at Current Market Price		GPP at 1972 Price	
	1986	1988	1986	1988
BMA	460,865,150	674,061,385	166,595,196	223,521,872
Central	235,492,684	303,008,671	86,263,715	101,473,539
Northern	134,027,090	181,808,891	54,628,048	64,140,191
Northeastern	157,561,353	202,274,239	65,410,896	75,120,690
Southern	107,421,611	145,823,301	40,592,297	48,210,143
Bangkok	369,193,825	530,607,442	134,509,643	178,805,100
Nonthaburi	17,354,534	28,909,032	5,840,120	8,784,029
Samut Prakan	45,595,680	79,298,394	16,211,173	24,646,479
Pathum Thani	28,721,111	35,246,517	10,034,260	11,286,264
Nakhon Pathom	13,755,957	17,836,536	5,612,129	6,337,600
Samut Sakhon	16,166,805	21,216,409	5,820,041	7,068,030
Chai Nat	5,504,664	7,049,188	2,277,870	2,435,763
Ayutthaya	10,697,949	13,040,489	4,318,878	4,632,024
Ang Thong	3,888,443	5,079,249	1,583,392	1,776,666
Saraburi	17,212,198	26,070,046	6,409,399	8,533,231
Lop Buri	9,912,384	13,950,757	4,141,169	5,042,969
Sing Buri	3,278,712	4,107,521	1,383,904	1,471,784
Prachin Buri	9,334,113	12,757,553	4,001,895	4,773,709
Nakhon Nayok	2,799,071	3,910,717	1,146,459	1,390,200
Chon Buri	45,522,509	50,960,014	12,771,898	15,639,732
Rayong	12,022,640	15,480,730	3,853,860	4,560,728
Chachoengsao	15,635,828	23,713,699	5,033,807	6,645,042
Chanthaburi	6,091,263	8,022,380	2,339,368	2,791,854
Trat	3,461,639	4,431,149	1,264,418	1,470,306
Phetchaburi	7,331,007	8,958,706	2,874,888	3,124,241
Prachuap Khiri Khan	8,716,596	11,669,882	3,423,052	4,066,996
Ratchaburi	14,224,762	16,182,042	5,775,533	6,082,409
Kanchanaburi	16,503,387	20,216,569	6,711,408	7,185,836
Samut Songkhram	2,776,205	3,270,241	1,034,016	1,146,573
Suphan Buri	10,656,552	15,084,794	4,486,331	5,297,846
Phitsanulok	8,997,876	12,469,070	3,750,963	4,415,418
Tak	5,397,659	9,425,429	2,333,468	3,197,243
Kamphaeng Phet	9,368,603	12,681,274	3,278,964	3,868,131
Sukhotthai	6,934,864	8,729,166	2,846,554	3,101,494
Uttaradit	5,996,979	8,407,676	2,498,032	3,018,836
Nakhon Sawan	14,214,268	19,437,063	5,859,222	6,835,527
Phetchabun	9,287,780	13,502,913	4,093,107	4,955,699
Uthai Thani	3,844,458	5,356,952	1,596,821	1,883,720
Phichit	6,041,721	8,614,132	2,513,610	3,008,361
Chiang Mai	21,729,545	28,702,630	8,888,391	10,396,086
Lamphun	4,076,777	5,384,953	1,761,810	2,045,567
Mae Hong Son	1,996,463	2,507,652	778,713	848,812
Chiang Rai	11,263,118	14,818,034	4,867,721	5,612,351
Lampang	11,300,677	14,210,943	3,851,847	4,421,902
Phayao	4,618,201	6,315,293	1,960,876	2,384,859
Phrae	4,911,823	6,127,256	2,032,415	2,256,501
Nan	4,046,277	5,118,455	1,715,534	1,889,684
Nakhon Ratchasima	24,780,600	29,691,496	10,321,119	11,461,283
Buri Ram	10,047,165	13,224,140	4,211,438	4,871,390
Chaiyaphum	8,711,651	11,141,247	3,623,016	4,179,511
Ubon Ratchathani	13,955,476	18,456,819	5,779,760	6,711,682
Si Sa Ket	8,417,120	11,092,929	3,679,041	4,160,359
Surin	9,015,748	10,726,634	3,716,991	3,903,660
Yasothon	3,579,388	4,711,254	1,480,469	1,721,210
Udon Thani	14,319,121	18,764,518	5,927,339	6,837,742
Loei	5,568,498	7,462,134	2,369,844	2,674,362
Nong Khai	7,586,799	9,381,675	3,234,670	3,632,691
Sakon Nakhon	7,122,090	9,535,891	2,918,580	3,496,704
Nakhon Phanom	4,545,848	5,924,144	1,869,605	2,231,503
Mukdahan	2,077,576	2,590,297	849,789	971,266
Khon Kaen	16,224,068	21,987,948	6,599,187	8,041,013
Roi Et	9,075,076	11,428,124	3,709,804	4,205,171
Maha Sarakham	6,209,293	8,089,586	2,529,684	3,031,030
Kalasin	6,325,836	8,065,403	2,590,560	2,990,113
Nakhon Si Thammarat	16,062,514	20,987,601	6,187,215	7,251,208
Trang	7,469,379	9,898,557	2,736,293	3,069,667
Krabi	4,571,065	7,398,125	1,743,569	2,184,711
Phuket	4,969,766	8,465,315	1,998,351	2,832,489
Phangnga	5,533,223	7,370,863	2,088,332	2,266,328
Surat Thani	12,246,356	18,726,860	4,735,656	6,467,222
Ranong	3,543,086	4,404,066	1,151,589	1,328,114
Chumphon	7,375,380	8,783,233	2,925,086	3,228,937
Yala	5,266,387	7,177,358	1,924,373	2,334,202
Narathiwat	6,779,935	9,092,239	2,569,758	2,972,003
Pattani	5,709,131	7,274,934	2,164,795	2,464,111
Songkhla	19,201,967	24,825,048	7,084,829	8,096,595
Satun	3,716,040	4,727,188	1,328,793	1,451,018
Phatthalung	4,977,382	6,691,914	1,953,658	2,263,538
Total	1,095,367,888	145,823,301	40,592,297	48,210,143

Source :

National Accounts Division / NESDB

8 - 12 Number of Business Main Telephones per Employee except Agriculture Industry of Major Countries

Country	Year	Business Subscriber	Population	Per Capita GDP (US\$)	No. of Employees (thousand)	No. of Main Telephones per Employee
Sweden	1985	1,007,000	8,342,621	N.A.	4,091.0	0.25
	1986	1,085,000	8,358,139	N.A.	4,127.0	0.26
	1987	1,180,000	8,382,000	N.A.	4,166.0	0.28
	1988	1,180,000	8,382,000	N.A.	4,231.0	0.28
	1989	1,200,000	8,400,000	22,608	4,307.0	0.28
Canada	1985	2,143,561	25,124,100	14,587	10,646.0	0.20
	1986	2,304,820	25,359,800	14,640	10,961.0	0.21
	1987	2,622,867	25,309,331	15,557	11,295.0	0.23
	1988	2,854,662	25,625,100	17,392	11,689.0	0.24
	1989	3,728,398	26,094,200	21,091	11,949.0	0.31
United States	1985	29,417,982	237,019,000	16,628	103,812.0	0.28
	1986	30,974,704	239,283,000	17,344	106,247.0	0.29
	1987	33,855,937	243,915,000	18,417	109,040.0	0.31
	1988	35,552,997	246,113,000	19,704	111,642.0	0.32
	1989	37,050,337	247,847,000	20,832	113,964.0	0.33
Australia	1985	1,561,715	15,543,600	12,131	6,260.5	0.25
	1986	1,656,063	15,851,800	11,771	6,503.1	0.25
	1987	1,701,212	16,018,400	11,672	6,689.9	0.25
	1988	1,834,760	16,248,800	12,874	6,925.2	0.26
	1989	2,075,104	15,606,156	18,125	7,321.4	0.28
France	1985	4,759,550	54,979,000	9,803	19,643.7	0.24
	1986	4,641,324	55,214,000	10,816	19,725.5	0.24
	1987	5,184,600	55,356,400	12,958	19,846.8	0.26
	1988	5,385,959	55,514,700	16,118	20,052.2	0.27
	1989	4,249,170	57,100,100	16,740	20,357.3	0.21
Netherlands	1985	1,162,500	14,454,000	9,345	4,876.4	0.24
	1986	1,222,800	14,529,000	10,033	N.A.	
	1987	1,338,438	14,615,100	11,750	5,583.0	0.24
	1988	1,415,118	14,713,600	14,583	5,748.0	0.25
	1989	1,551,840	14,805,000	15,109	4,869.0	0.32
New Zealand	1985	257,570	3,291,300	7,116	N.A.	
	1986	272,537	3,290,100	7,009	1,380.0	0.20
	1987	315,144	3,291,300	8,497	1,393.0	0.23
	1988	342,608	3,307,084	10,261	1,346.0	0.25
	1989	320,899	3,359,000	12,434	1,311.0	0.24
Japan	1985	13,926,000	119,316,000	11,210	52,980.0	0.26
	1986	14,228,000	120,008,000	12,792	53,580.0	0.27
	1987	14,792,000	121,910,000	15,746	54,220.0	0.27
	1988	15,431,000	122,458,000	20,925	55,370.0	0.28
	1989	16,213,000	122,970,000	N.A.	56,650.0	0.29
United Kingdom	1985	4,176,000	56,371,000	8,448	23,826.0	0.18
	1986	4,379,000	56,432,000	8,969	23,928.0	0.18
	1987	4,364,000	54,616,091	10,481	24,397.0	0.18
	1988	5,040,000	54,731,281	12,804	N.A.	
	1989	5,237,000	56,799,000	14,642	N.A.	
Italy	1985	3,546,112	57,103,000	7,761	18,598.0	0.19
	1986	3,654,094	57,225,000	8,636	18,765.0	0.19
	1987	3,783,227	57,313,000	10,502	18,817.0	0.20
	1988	3,955,303	57,406,000	13,411	19,195.0	0.21
	1989	4,193,885	57,527,000	15,051	19,208.0	0.22
Singapore	1985	207,758	2,544,000	7,345	1,073.3	0.19
	1986	218,928	2,573,000	7,187	1,139.4	0.19
	1987	224,743	2,600,000	7,708	1,182.5	0.19
	1988	249,034	2,630,000	8,768	1,233.1	0.20
	1989	275,757	2,670,000	10,622	1,271.5	0.22
Korea, Rep.	1985	1,281,568	40,430,137	2,392	11,237.0	0.11
	1986	1,409,504	40,466,577	2,630	11,843.0	0.12
	1987	1,550,847	41,161,000	2,986	12,774.0	0.12
	1988	1,689,377	42,082,000	3,600	13,386.0	0.13
	1989	1,869,283	41,975,000	5,048	14,095.0	0.13
Hong Kong	1985	419,861	5,397,500	N.A.	916.0	0.46
	1986	454,554	5,466,900	N.A.	948.5	0.48
	1987	498,571	5,533,000	N.A.	971.8	0.51
	1988	573,918	5,613,000	N.A.	988.2	0.58
	1989	667,750	5,736,100	N.A.	990.1	0.67

Source : Business Subscriber , Population :
AT&T, "THE WORLD'S TELEPHONES" 1985-1989
 Per Capita GDP :
WORLD BANK, "World Tables 1989 - 90 Edition"
IME, "YEAR BOOK OF INTERNATIONAL FINANCIAL STATISTICS 1990"
 No. of Employees :
I.L.O., "YEAR BOOK OF LABOUR STATISTICS 1990"

8 - 13 Forecasted Demand of Local Exchange Area in BMA (1/3)

No.	Code	Exchange	ARBR Area	1991	1992	1993	1994	1995	1996
Adjusted Demand				1,879,842	2,133,026	2,404,044	2,668,612	2,951,555	3,255,592
Adjusted Demand per 100 persons				22.70	25.25	27.91	30.37	32.94	35.67
1	101	Phloen Chit	PNC	1	88,664	99,475	110,887	121,712	133,205
2	102	Samran Rat	SRR	1	57,531	63,744	70,518	77,453	85,359
3	103	Krung Kasem	KKM	1	25,717	29,116	32,923	36,886	41,418
4	104	Surawong	SRW	1	93,172	109,203	127,034	145,380	165,043
5	105	Samsen	SMS	1	17,755	21,609	25,900	30,251	34,819
6	106	Asok Din Daeng	ASD	1	76,153	87,479	98,428	107,741	116,468
7	107	Pathum Wan	PTW	1	24,974	27,551	30,430	33,344	36,686
8	108	Sukhumwit	SKW	1	48,851	50,375	51,795	52,691	53,764
9	109	Chaiyaphruk	CYP	2	33,910	34,537	35,192	35,561	36,097
10	110	Bang Na	BNA	2	57,662	64,015	70,765	77,003	83,828
11	111	Khlong Chan	KGC	2	73,521	81,991	90,659	98,735	107,137
12	112	Thung Mahamek	TMM	2	28,797	32,337	36,075	39,636	43,428
13	113	Sathupradit	STD	2	19,511	20,382	21,264	21,981	22,808
14	114	Thanon Tok	TNT	2	17,913	19,625	21,497	23,330	25,392
15	115	Bang Chan	BGC	2	37,607	44,522	51,587	58,134	64,630
16	116	Phra Khanong	PKG	2	25,706	28,424	31,377	34,109	37,145
17	117	Hua Mak	HAM	2	40,287	46,570	53,453	60,357	67,865
18	118	Trok Chan	TKC	2	22,858	24,478	26,278	28,026	30,060
19	119	Lat Krabang	LKG	2	8,808	10,871	13,127	15,375	17,706
20	121	Khlong Toei	KTI	2	21,440	25,876	30,738	35,578	40,628
21	123	On Nut	ONT	2	32,916	36,717	40,500	43,834	47,190
22	124	Ramkamhaeng(Phruksach	RKN	2	2,357	3,279	4,484	5,996	7,869
23	301	Samut Prakan	SPK	2	14,923	18,128	21,930	26,178	31,166
24	302	Pu Chao Saming Phrai	PSP	2	48,541	56,325	63,937	70,718	77,168
25	303	Bang Phli	BPL	2	28,321	35,924	44,540	53,642	63,347
26	304	Bang Pu	BGU	2	5,124	5,962	6,932	8,004	9,261
27	305	Bang Phli Bang Bo	BBB	2	6,621	7,832	9,062	10,207	11,340
28	126	Thon Buri	TNB	3	25,258	27,180	29,318	31,417	33,853
29	127	Bang Khae	BKE	3	18,832	20,868	23,109	25,342	27,854
30	128	Dao Khanong	DKN	3	22,895	24,991	27,267	29,461	31,908
31	129	Bang Phlat	BGT	3	70,314	76,777	83,601	89,834	96,604
32	130	Phasi Charoen	PSN	3	24,181	25,286	26,308	27,033	27,809
33	131	Charan Sanitwong	CSW	3	34,145	37,953	42,029	45,867	50,024
34	132	Rat Burana	RBN	3	25,585	29,447	33,709	38,018	42,746
35	133	Lat Ya	LYT	3	33,852	37,214	40,551	43,432	46,321
36	134	Muban Setthakit	MSK	3	23,508	29,452	36,124	42,982	50,270
37	135	Ekkachai	EKC	3	50,949	59,250	67,451	74,627	81,421
38	149	Nong Khaem	NGK	3	28,956	36,078	43,851	51,824	59,878
39	308	Phra Pradaeng	PPG	3	19,619	23,086	27,013	31,186	35,907
40	402	Bang Bue Thong	BBT	3	12,730	17,119	22,724	29,427	37,539
41	136	Phahonyothin	PYT	4	43,966	51,566	60,280	69,570	80,180
42	137	Inthamara	ITM	4	48,450	51,951	55,164	57,608	60,007
43	138	Bang Khen	BGN	4	33,613	35,389	37,137	38,568	40,156
44	139	Bang Su	BGS	4	33,279	41,221	50,439	60,334	71,319
45	140	Don Muang	DNM	4	61,931	75,494	89,914	104,058	118,148
46	141	Lak Si	LKS	4	27,439	31,475	35,967	40,561	45,682
47	142	Ram Inthra	RIT	4	48,853	54,721	60,298	65,218	70,065
48	143	Lai Phrao 1	LTP1	4	38,498	40,639	42,552	43,948	45,409
49	144	Lai Phrao 2	LTP2	4	43,641	45,023	46,483	47,623	49,035
50	145	Chaeng Watthana	CWT	4	36,793	40,765	44,522	47,678	50,812
51	401	Nonthaburi	NTB	4	16,216	19,416	23,239	27,554	32,760
52	405	Ngam Wong Wan	NWW	4	38,968	43,315	47,926	52,358	57,199
53	406	Pak Kret	PKK	4	22,550	27,769	33,430	39,042	44,821
54	501	Pathum Thani	PTT	4	13,178	16,514	20,216	24,081	28,115
55	502	Rangsit	RST	4	8,196	9,176	10,118	10,986	11,822
56	503	Thanyaburi	TYB	4	5,458	7,409	9,979	13,224	17,306
57	504	Nawa Nakhon	NWN	4	5,957	7,130	8,327	9,484	10,606
58	511	Bang Phun	BAN	4	2,393	3,005	3,687	4,404	5,156

8 - 13 Forecasted Demand of Local Exchange Area in BMA (2/3)

No. Code	Exchange	ABBR Area	1997	1998	1999	2000	2001	2002	
Adjusted Demand			3,563,796	3,870,072	4,181,971	4,493,977	4,800,596	5,040,245	
Adjusted Demand per 100 persons			38.35	40.95	43.49	45.94	48.30	49.91	
1	101 Phloen Chit	PNC	1	157,543	169,472	181,296	192,922	204,073	212,118
2	102 Samran Rat	SRR	1	103,037	112,922	123,295	134,081	145,174	155,172
3	103 Krung Kasem	KKM	1	52,052	58,001	64,345	71,030	78,014	84,264
4	104 Surawong	SRW	1	209,000	232,140	256,319	281,219	304,998	326,358
5	105 Samsen	SMS	1	44,064	48,190	51,913	55,192	58,046	59,711
6	106 Asok Din Daeng	ASD	1	131,938	138,326	144,118	149,282	154,112	156,445
7	107 Pathum Wan	PTW	1	44,670	49,142	53,978	59,162	64,621	69,460
8	108 Sukhumwit	SKW	1	56,404	57,706	59,074	60,496	61,909	62,535
9	109 Chaiyaphruk	CYP	2	37,570	38,308	39,088	39,898	40,693	40,963
10	110 Bang Na	BNA	2	98,833	106,423	114,279	122,185	130,013	135,755
11	111 Khlong Chan	KGC	2	124,537	132,538	140,717	149,000	156,314	161,327
12	112 Thung Mahamek	TMM	2	51,481	55,452	59,424	63,375	67,173	69,998
13	113 Sathupradit	STD	2	24,741	25,739	26,796	27,911	29,030	29,809
14	114 Thanon Tok	TNT	2	30,131	32,659	35,320	38,095	40,896	43,202
15	115 Bang Chan	BGC	2	77,135	82,747	88,224	93,608	98,547	102,105
16	116 Phra Khanong	PKG	2	44,037	47,684	51,513	55,510	59,469	62,509
17	117 Hua Mak	HAM	2	84,304	92,662	101,115	109,530	117,790	124,278
18	118 Trok Chan	TKC	2	34,931	37,625	40,543	43,684	46,965	49,803
19	119 Lat Krabang	LKG	2	22,400	24,613	26,762	28,855	30,855	32,404
20	121 Khlong Toei	KTI	2	50,810	55,503	59,911	64,010	67,736	70,258
21	123 On Nut	ONT	2	53,952	57,041	60,035	62,930	65,728	67,585
22	124 Ramkamhaeng(Phruksach.	RKN	2	12,643	15,265	18,110	21,101	23,741	25,917
23	301 Samut Prakan	SPK	2	43,631	50,840	58,830	67,332	75,923	83,638
24	302 Pu Chao Saming Phrai	PSP	2	89,246	94,216	99,006	103,061	107,887	110,908
25	303 Bang Phli	BPL	2	83,787	93,421	102,987	112,098	120,790	127,348
26	304 Bang Pu	BGU	2	12,442	14,303	16,433	18,768	21,347	23,813
27	305 Bang Phli Bang Bo	BBB	2	13,615	14,639	15,673	16,698	17,754	18,540
28	126 Thon Buri	TNB	3	39,687	42,958	46,501	50,300	54,302	57,807
29	127 Bang Khae	BKE	3	33,640	36,746	40,019	43,433	46,883	49,761
30	128 Dao Khanong	DKN	3	37,493	40,458	43,522	46,654	49,808	52,290
31	129 Bang Phlat	BGT	3	111,486	119,077	126,717	134,321	141,917	147,708
32	130 Phasi Charoen	PSN	3	29,468	30,229	30,999	31,778	32,509	32,816
33	131 Charan Sanitwong	CSW	3	59,152	63,796	68,429	73,019	77,591	81,153
34	132 Rat Burana	RBN	3	53,278	58,730	64,283	69,799	75,212	79,442
35	133 Lat Ya	LTY	3	51,880	54,284	56,508	58,554	60,485	61,486
36	134 Muban Setthakit	MSK	3	64,668	71,556	77,789	83,791	89,451	93,741
37	135 Ekkachai	EKC	3	93,692	98,760	103,336	107,522	111,413	113,491
38	149 Nong Khaem	NGK	3	76,559	84,326	91,687	98,588	105,493	110,718
39	308 Phra Pradaeng	PPG	3	47,308	53,520	60,258	67,087	74,374	80,613
40	402 Bang Buc Thong	BBT	3	57,626	68,651	80,096	91,473	102,719	112,273
41	136 Pahonyothin	PYT	4	105,103	118,703	132,938	147,577	162,197	174,282
42	137 Inthamara	ITM	4	64,619	66,628	68,588	70,417	72,215	72,949
43	138 Bang Khen	BGN	4	43,719	45,444	47,198	49,003	50,929	52,055
44	139 Bang Su	BGS	4	95,357	107,296	118,875	129,867	140,004	147,323
45	140 Don Muang	DNM	4	146,268	158,987	171,469	183,307	194,633	202,905
46	141 Lak Si	LKS	4	57,308	63,470	69,859	76,405	82,900	88,253
47	142 Ram Inthra	RIT	4	79,519	83,471	87,739	92,279	95,880	98,148
48	143 Lat Phrao 1	LTP1	4	48,551	50,015	51,506	53,038	54,688	55,514
49	144 Lat Phrao 2	LTP2	4	52,497	54,301	56,227	58,267	60,348	61,712
50	145 Chaeng Watthana	CWT	4	56,978	59,853	62,736	65,650	68,442	70,371
51	401 Nonthaburi	NTB	4	46,312	54,500	63,967	74,608	86,133	97,646
52	405 Ngam Wong Wan	NWW	4	67,917	73,302	78,895	84,510	90,012	94,349
53	406 Pak Kret	PKK	4	56,467	61,761	66,954	71,880	76,541	80,082
54	501 Pathum Thani	PTT	4	36,236	39,860	43,333	46,484	49,578	51,695
55	502 Rangsit	RST	4	13,701	14,605	15,578	16,550	17,545	18,287
56	503 Thanyaburi	TYB	4	28,578	35,451	43,053	50,925	58,969	65,785
57	504 Nawa Nakhon	NWN	4	12,965	14,064	15,197	16,299	17,400	18,227
58	511 Bang Phun	BAN	4	6,832	7,691	8,613	9,559	10,429	11,145

8 - 13 Forecasted Demand of Local Exchange Area in BMA (3/3)

No.	Code	Exchange	ABBR Area	2003	2004	2005	2006	2007	
Adjusted Demand				5,274,512	5,491,252	5,691,687	5,877,010	6,054,703	
Adjusted Demand per 100 persons				51.43	52.71	53.80	54.73	55.57	
1	101	Phloen Chit	PNC	1	219,759	226,449	232,277	237,403	242,165
2	102	Samran Rat	SRR	1	165,363	175,063	184,604	194,061	203,374
3	103	Krung Kasem	KKM	1	90,588	96,645	102,462	108,073	113,352
4	104	Surawong	SRW	1	346,786	367,770	389,231	407,399	425,870
5	105	Samsen	SMS	1	60,991	61,814	62,260	62,419	62,392
6	106	Asok Din Daeng	ASD	1	158,645	160,255	161,398	162,271	163,060
7	107	Pathum Wan	PTW	1	74,491	79,486	84,410	89,257	94,079
8	108	Sukhumwit	SKW	1	63,215	63,771	64,227	64,625	65,086
9	109	Chaiyaphruk	CYP	2	41,261	41,470	41,607	41,699	41,826
10	110	Bang Na	BNA	2	141,467	146,771	151,637	156,228	160,678
11	111	Khlong Chan	KGC	2	166,075	170,140	173,648	176,524	179,076
12	112	Thung Mahamek	TMM	2	72,704	75,130	77,299	79,255	81,078
13	113	Sathupradit	STD	2	30,619	31,389	32,123	32,834	33,548
14	114	Thanon Tok	TNT	2	45,505	47,686	49,734	51,658	53,489
15	115	Bang Chan	BGC	2	105,405	108,544	111,431	113,943	116,583
16	116	Phra Khanong	PKG	2	65,559	68,458	71,208	73,830	76,384
17	117	Hua Mak	HAM	2	130,511	136,159	141,273	145,735	149,918
18	118	Trok Chan	TKC	2	52,775	55,749	58,718	61,692	64,709
19	119	Lat Krabang	LKG	2	33,910	35,314	36,634	37,898	39,147
20	121	Khlong Toei	KTI	2	72,517	74,369	75,887	77,156	78,338
21	123	On Nut	ONT	2	69,380	70,974	72,413	73,699	74,988
22	124	Ramkamhaeng(Phruksach	RKN	2	27,901	29,604	31,072	32,373	33,489
23	301	Samut Prakan	SPK	2	91,577	99,383	106,881	114,311	121,757
24	302	Pu Chao Saming Phrai	PSP	2	113,907	116,514	118,624	120,563	122,427
25	303	Bang Phli	BPL	2	133,743	139,617	144,899	149,988	155,068
26	304	Bang Pu	BGU	2	26,481	29,247	32,049	34,941	37,929
27	305	Bang Phli Bang Bo	BBB	2	19,346	20,113	20,820	21,526	22,249
28	126	Thon Buri	TNB	3	61,460	65,109	68,728	72,343	76,032
29	127	Bang Khae	BKE	3	52,624	55,329	57,859	60,218	62,443
30	128	Dao Khanong	DKN	3	54,724	56,930	58,902	60,690	62,365
31	129	Bang Phlat	BGT	3	153,372	158,522	163,232	167,494	171,537
32	130	Phasi Charoen	PSN	3	33,128	33,367	33,544	33,679	33,799
33	131	Charan Sanitwong	CSW	3	84,535	87,588	90,373	92,832	95,161
34	132	Rat Burana	RBN	3	83,467	86,958	89,953	92,633	95,066
35	133	Lat Ya	LTU	3	62,424	63,073	63,507	63,781	63,966
36	134	Muban Setthakit	MSK	3	97,851	101,617	105,102	108,393	111,610
37	135	Ekkachai	EKC	3	115,479	117,000	118,131	119,084	119,960
38	149	Nong Khaem	NGK	3	115,728	120,272	124,565	128,693	132,658
39	308	Phra Pradaeng	PPG	3	86,891	92,855	98,334	103,551	108,562
40	402	Bang Bue Thong	BBT	3	121,251	129,264	136,588	143,291	149,567
41	136	Phahonyothin	PYT	4	185,720	195,952	204,791	212,475	218,942
42	137	Inthamara	ITM	4	73,683	74,194	74,519	74,772	74,985
43	138	Bang Khen	BGN	4	53,192	54,245	55,105	56,021	56,775
44	139	Bang Su	BGS	4	153,714	158,925	163,031	166,414	169,197
45	140	Don Muang	DNM	4	210,996	218,365	225,129	231,620	237,614
46	141	Lak Si	LKS	4	93,448	98,237	102,611	106,602	110,297
47	142	Ram Inthra	RIT	4	100,359	102,207	103,790	105,231	106,499
48	143	Lat Phrao 1	LTP1	4	56,377	57,160	57,775	58,450	59,002
49	144	Lat Phrao 2	LTP2	4	63,149	64,499	65,769	66,902	68,058
50	145	Chaeng Watthana	CWT	4	72,290	74,072	75,721	77,270	78,578
51	401	Nonthaburi	NTB	4	110,065	122,695	135,849	149,395	163,043
52	405	Ngam Wong Wan	NWW	4	98,583	102,746	106,440	109,707	112,923
53	406	Pak Kret	PKK	4	83,516	86,578	89,431	92,124	94,731
54	501	Pathum Thani	PTT	4	53,745	55,494	57,007	58,454	59,815
55	502	Rangsit	RST	4	19,087	19,850	20,587	21,350	22,122
56	503	Thanyaburi	TYB	4	72,186	77,742	82,477	86,644	90,263
57	504	Nawa Nakhon	NWN	4	19,094	19,909	20,686	21,481	22,280
58	511	Bang Phun	BAN	4	11,892	12,617	13,325	14,055	14,796

8 - 14 Forecasted Demand of Amphone in the Surrounding Area

Prov.	Amphoe / Local Exchange Area	Telecom.	Forecasted Demand (1991-2007)																
			1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Adjusted Demand																			
1	NPT Nakhon Pathom	6	26,891	28,387	30,637	33,389	36,353	39,636	43,153	46,934	51,025	55,344	60,012	64,973	69,519	74,245	79,077	84,023	89,129
2	NPT Kamphaeng Saen	6	2,131	2,492	2,884	3,376	3,952	4,640	5,445	6,385	7,488	8,754	10,233	11,919	13,696	15,668	17,830	20,169	22,664
3	NPT Nakhon Chaisi	6	5,937	6,851	7,805	8,976	10,295	11,811	13,510	15,388	17,468	19,705	22,144	24,768	27,233	29,763	32,298	34,808	37,312
4	NPT Don Tum	6	777	906	1,045	1,220	1,423	1,666	1,952	2,283	2,669	3,112	3,627	4,215	4,832	5,514	6,250	7,043	7,886
5	NPT Bang Len	6	1,670	1,939	2,228	2,589	3,008	3,506	4,080	4,746	5,526	6,417	7,448	8,619	9,837	11,178	12,615	14,166	15,807
6	NPT Sam Phran	6	9,376	10,466	11,491	12,711	13,976	15,340	16,729	18,142	19,574	21,000	22,448	23,887	25,077	26,209	27,325	28,413	29,470
	Total		46,781	51,040	56,090	62,261	69,008	76,598	84,868	93,878	103,749	114,332	125,911	138,381	150,194	162,577	175,396	188,623	202,268
6	SKN Samut Sakhon	6	36,230	39,020	42,200	45,770	49,544	53,393	57,411	61,562	65,808	70,219	74,832	79,509	83,900	88,366	92,839	97,457	102,235
7	SKN Krathum baan	6	11,160	12,114	13,202	14,442	15,662	16,963	18,201	19,444	20,673	21,918	23,053	24,194	25,243	26,320	27,409	28,555	29,763
8	SKN Ban Phaeuw	6	8,058	8,602	9,265	9,993	10,809	11,652	12,567	13,578	14,628	15,748	16,915	18,118	19,269	20,442	21,612	22,804	24,015
	Total		55,448	59,736	64,668	70,205	76,015	82,007	88,179	94,584	101,109	107,885	114,801	121,821	128,412	135,127	141,860	148,817	156,012
8	AYA Ayuthaya 1	9	4,280	4,406	4,501	4,597	4,713	4,813	4,915	5,033	5,147	5,283	5,401	5,535	5,677	5,837	5,997	6,160	6,332
9	AYA Ayuthaya 2	9	10,312	11,054	11,749	12,460	13,245	14,001	14,772	15,586	16,386	17,249	18,036	18,850	19,661	20,494	21,287	22,035	22,765
10	AYA Bang Pa-in	9	3,975	4,291	4,593	4,900	5,235	5,564	5,914	6,286	6,661	7,071	7,460	7,869	8,287	8,725	9,155	9,574	9,994
11	AYA Wang Noi	9	4,699	5,091	5,464	5,832	6,233	6,618	7,007	7,408	7,798	8,212	8,585	8,966	9,341	9,724	10,087	10,430	10,768
12	AYA Phachi	9	1,889	2,029	2,165	2,311	2,471	2,640	2,818	3,007	3,207	3,423	3,634	3,862	4,101	4,356	4,615	4,876	5,143
13	AYA Tha Rua	9	3,423	3,724	4,014	4,312	4,613	4,915	5,233	5,567	5,897	6,252	6,580	6,921	7,262	7,613	7,953	8,279	8,604
14	AYA Sena	9	2,360	2,587	2,806	3,037	3,317	3,583	3,855	4,166	4,478	4,839	5,193	5,578	5,990	6,437	6,901	7,381	7,885
15	AYA Ban Phraek	9	449	496	544	597	656	722	796	876	966	1,070	1,181	1,309	1,453	1,617	1,801	2,005	2,236
16	AYA Bang Sye	9	403	442	482	526	577	631	691	759	833	920	1,014	1,122	1,244	1,384	1,541	1,716	1,915
17	AYA Bang Sai	9	628	679	728	783	845	912	985	1,066	1,153	1,252	1,354	1,470	1,596	1,738	1,890	2,055	2,234
18	AYA Phak Hai	9	1,294	1,411	1,522	1,642	1,779	1,919	2,069	2,234	2,407	2,602	2,798	3,013	3,243	3,492	3,753	4,023	4,306
19	AYA Bang Ban	9	966	1,058	1,150	1,248	1,361	1,484	1,619	1,770	1,933	2,116	2,311	2,531	2,773	3,045	3,339	3,657	4,006
20	AYA Lat Bus Luang	9	518	563	610	661	720	781	850	927	1,010	1,106	1,209	1,325	1,456	1,606	1,772	1,956	2,163
21	AYA Maharat	9	377	407	438	471	507	545	587	634	685	743	803	871	944	1,027	1,115	1,210	1,313
22	AYA Nakhon Loang	9	1,389	1,520	1,651	1,791	1,951	2,118	2,298	2,498	2,711	2,952	3,200	3,475	3,773	4,101	4,449	4,817	5,210
23	AYA Uthai	9	624	695	770	850	945	1,044	1,153	1,276	1,414	1,573	1,743	1,934	2,148	2,390	2,655	2,945	3,267
24	AYA Bang Pahan	9	1,088	1,170	1,246	1,323	1,408	1,489	1,570	1,655	1,738	1,826	1,906	1,987	2,067	2,149	2,226	2,299	2,369
	Total		38,675	41,621	44,433	47,341	50,577	53,779	57,133	60,747	64,425	68,492	72,408	76,618	81,016	85,735	90,538	95,419	100,511

8 - 15 Estimation Result for Micro Forecast in BMA(1/3)

Staic No. Code	Local Exchange	Telecom.		1991	1992	1993	1994	1995	1996
		ABBR	Area						
Estimated Demand									
1	101 Phloen Chit	PNC	1	101,144	113,932	126,960	140,108	153,102	165,532
2	102 Samran Rat	SRR	1	65,628	73,008	80,740	89,160	98,109	107,031
3	103 Krung Kasem	KKM	1	29,336	33,348	37,695	42,461	47,604	52,989
4	104 Surawong	SRW	1	106,286	125,073	145,449	167,353	189,695	212,480
5	105 Samsen	SMS	1	20,254	24,749	29,655	34,823	40,019	45,025
6	106 Asok Din Daeng	ASD	1	86,872	100,192	112,696	124,026	133,865	141,976
7	107 Pathum Wan	PTW	1	28,489	31,555	34,841	38,383	42,166	46,127
8	108 Sukhumwit	SKW	1	55,727	57,696	59,303	60,655	61,795	62,715
9	109 Chaiyaphruk	CYP	2	38,683	39,557	40,294	40,936	41,489	41,928
10	110 Bang Na	BNA	2	65,779	73,318	81,022	88,641	96,349	103,898
11	111 Khlong Chan	KGC	2	83,870	93,907	103,801	113,658	123,140	131,872
12	112 Thung Mahamek	TMM	2	32,850	37,036	41,305	45,627	49,915	54,021
13	113 Sathupradit	STD	2	22,257	23,344	24,346	25,303	26,215	27,050
14	114 Thanon Tok	TNT	2	20,435	22,477	24,613	26,856	29,185	31,533
15	115 Bang Chan	BGC	2	42,900	50,992	59,065	66,921	74,283	80,877
16	116 Phra Khanong	PKG	2	29,324	32,554	35,926	39,264	42,694	46,120
17	117 Hua Mak	HAM	2	45,957	53,338	61,202	69,480	78,002	86,501
18	118 Trok Chan	TKC	2	26,075	28,035	30,087	32,262	34,550	36,890
19	119 Lat Krabang	LKG	2	10,048	12,450	15,030	17,699	20,351	22,867
20	121 Khlong Toei	KTI	2	24,457	29,636	35,193	40,956	46,697	52,155
21	123 On Nut	ONT	2	37,549	42,052	46,370	50,459	54,239	57,654
22	124 Ramkamhaeng(Phruksa)	RKN	2	2,689	3,755	5,134	6,902	9,044	11,483
23	301 Samut Prakan	SPK	2	17,023	20,763	25,109	30,135	35,822	42,191
24	302 Pu Chao Saming Phrai	PSP	2	55,374	64,511	73,205	81,407	88,694	95,083
25	303 Bang Phli	BPL	2	32,308	41,145	50,996	61,749	72,809	83,812
26	304 Bang Pu	BGU	2	5,845	6,829	7,937	9,214	10,644	12,246
27	305 Bang Phli Bang Bo	BBB	2	7,553	8,970	10,376	11,750	13,033	14,237
28	126 Thon Buri	TNB	3	28,813	31,129	33,568	36,166	38,910	41,731
29	127 Bang Khae	BKE	3	21,483	23,901	26,459	29,173	32,014	34,908
30	128 Dao Khanong	DKN	3	26,118	28,623	31,219	33,914	36,674	39,439
31	129 Bang Phlat	BGT	3	80,211	87,934	95,720	103,412	111,033	118,452
32	130 Phasi Charoen	PSN	3	27,585	28,961	30,121	31,118	31,963	32,626
33	131 Charan Sanitwong	CSW	3	38,951	43,468	48,121	52,799	57,496	62,147
34	132 Rat Burana	RBN	3	29,186	33,726	38,596	43,765	49,131	54,560
35	133 Lat Ya	LTY	3	38,617	42,622	46,429	49,997	53,240	56,026
36	134 Muban Setthakit	MSK	3	26,816	33,732	41,361	49,479	57,779	65,496
37	135 Ekkachai	EKC	3	58,121	67,860	77,229	85,907	93,583	100,091
38	149 Nong Khaem	NGK	3	33,032	41,321	50,207	59,656	68,822	77,925
39	308 Phra Pradaeng	PPG	3	22,381	26,442	30,929	35,900	41,271	47,073
40	402 Bang Bue Thong	BBT	3	14,522	19,607	26,018	33,875	43,147	53,645
41	136 Phahonyothin	PYT	4	50,154	59,060	69,018	80,085	92,156	104,942
42	137 Inthamara	ITM	4	55,270	59,501	63,160	66,315	68,970	71,064
43	138 Bang Khen	BGN	4	38,344	40,532	42,520	44,398	46,154	47,758
44	139 Bang Su	BGS	4	37,963	47,211	57,751	69,453	81,972	94,739
45	140 Don Muang	DNM	4	70,648	86,465	102,948	119,786	135,796	150,934
46	141 Lak Si	LKS	4	31,301	36,050	41,181	46,691	52,505	58,454
47	142 Ram Inthra	RIT	4	55,729	62,673	69,038	75,076	80,530	85,161
48	143 Lat Phrao 1	LTP1	4	43,917	46,544	48,720	50,590	52,192	53,526
49	144 Lat Phrao 2	LTP2	4	49,783	51,566	53,221	54,821	56,359	57,756
50	145 Chaeng Watthana	CWT	4	41,972	46,689	50,976	54,884	58,402	61,433
51	401 Nonthaburi	NTB	4	18,499	22,238	26,608	31,718	37,653	44,503
52	405 Ngam Wong Wan	NWW	4	44,453	49,610	54,873	60,272	65,743	71,152
53	406 Pak Kret	PKK	4	25,724	31,804	38,276	44,943	51,515	57,827
54	501 Pathum Thani	PTT	4	15,033	18,914	23,146	27,720	32,314	36,762
55	502 Rangsit	RST	4	9,350	10,510	11,584	12,647	13,588	14,545
56	503 Thanyaburi	TYB	4	6,226	8,485	11,425	15,223	19,891	25,598
57	504 Nawa Nakhon	NWN	4	6,795	8,166	9,534	10,917	12,190	13,449
58	511 Bang Phun	BAN	4	2,729	3,442	4,221	5,070	5,926	6,814
BMA Total				2,141,712	2,439,571	2,748,307	3,066,888	3,386,504	3,700,020

8 - 15 Estimation Result for Micro Forecast in BMA(2/3)

No.	Staic Code	Local Exchange	Telecom.		1997	1998	1999	2000	2001	2002
			ABBR	Area						
<i>Estimated Demand</i>										
1	101	Phloen Chit	PNC	1	177,381	188,483	198,842	208,448	217,001	224,865
2	102	Samran Rat	SRR	1	116,013	125,590	135,228	144,872	154,370	164,497
3	103	Krung Kasem	KKM	1	58,607	64,508	70,572	76,746	82,957	89,327
4	104	Surawong	SRW	1	235,318	258,182	281,126	303,851	324,320	345,971
5	105	Samsen	SMS	1	49,613	53,596	56,937	59,633	61,723	63,300
6	106	Asok Din Daeng	ASD	1	148,552	153,844	158,066	161,296	163,875	165,847
7	107	Pathum Wan	PTW	1	50,295	54,655	59,202	63,923	68,714	73,634
8	108	Sukhumwit	SKW	1	63,506	64,180	64,791	65,364	65,831	66,293
9	109	Chaiyaphruk	CYP	2	42,302	42,606	42,871	43,108	43,271	43,425
10	110	Bang Na	BNA	2	111,279	118,362	125,339	132,018	138,249	143,913
11	111	Khlong Chan	KGC	2	140,220	147,406	154,336	160,991	166,217	171,022
12	112	Thung Mahamek	TMM	2	57,963	61,672	65,175	68,475	71,428	74,204
13	113	Sathupradit	STD	2	27,857	28,626	29,390	30,157	30,869	31,600
14	114	Thanon Tok	TNT	2	33,925	36,323	38,738	41,161	43,487	45,798
15	115	Bang Chan	BGC	2	86,849	92,030	96,763	101,141	104,790	108,241
16	116	Phra Khanong	PKG	2	49,583	53,033	56,498	59,977	63,236	66,266
17	117	Hua Mak	HAM	2	94,920	103,057	110,902	118,345	125,252	131,746
18	118	Trok Chan	TKC	2	39,330	41,845	44,467	47,200	49,941	52,796
19	119	Lat Krabang	LKG	2	25,221	27,375	29,352	31,177	32,809	34,351
20	121	Khlong Toei	KTI	2	57,209	61,730	65,709	69,161	72,027	74,481
21	123	On Nut	ONT	2	60,746	63,440	65,846	67,995	69,891	71,646
22	124	Ramkhamhaeng(Phruksa)	RKN	2	14,236	16,977	19,863	22,799	25,245	27,474
23	301	Samut Prakan	SPK	2	49,125	56,543	64,524	72,751	80,733	88,664
24	302	Pu Chao Saming Phrai	PSP	2	100,484	104,785	108,588	111,355	114,722	117,573
25	303	Bang Phli	BPL	2	94,338	103,902	112,954	121,119	128,441	135,001
26	304	Bang Pu	BGU	2	14,008	15,908	18,024	20,278	22,700	25,244
27	305	Bang Phli Bang Bo	BBB	2	15,330	16,281	17,190	18,042	18,879	19,654
28	126	Thon Buri	TNB	3	44,684	47,778	51,001	54,348	57,742	61,281
29	127	Bang Khae	BKE	3	37,876	40,868	43,892	46,929	49,853	52,751
30	128	Dao Khanong	DKN	3	42,215	44,996	47,734	50,408	52,963	55,432
31	129	Bang Phlat	BGT	3	125,525	132,435	138,981	145,131	150,907	156,584
32	130	Phasi Charoen	PSN	3	33,178	33,620	33,999	34,335	34,568	34,788
33	131	Charan Sanitwong	CSW	3	66,601	70,953	75,051	78,895	82,507	86,030
34	132	Rat Burana	RBN	3	59,987	65,318	70,504	75,417	79,977	84,216
35	133	Lat Ya	LTY	3	58,413	60,373	61,977	63,266	64,317	65,181
36	134	Muban Setthakit	MSK	3	72,811	79,583	85,317	90,534	95,118	99,374
37	135	Ekkachai	EKC	3	105,491	109,838	113,337	116,175	118,471	120,311
38	149	Nong Khaem	NGK	3	86,200	93,786	100,561	106,522	112,176	117,372
39	308	Phra Pradaeng	PPG	3	53,265	59,524	66,090	72,486	79,086	85,457
40	402	Bang Buc Thong	BBT	3	64,882	76,353	87,848	98,835	109,226	119,021
41	136	Phahonyothin	PYT	4	118,338	132,019	145,804	159,454	172,472	184,755
42	137	Inthamara	ITM	4	72,756	74,102	75,226	76,084	76,789	77,333
43	138	Bang Khen	BGN	4	49,225	50,541	51,765	52,947	54,155	55,183
44	139	Bang Su	BGS	4	107,365	119,333	130,380	140,318	148,873	156,176
45	140	Don Muang	DNM	4	164,687	176,822	188,064	198,059	206,962	215,098
46	141	Lak Si	LKS	4	64,525	70,590	76,620	82,554	88,152	93,557
47	142	Ram Inthra	RIT	4	89,533	92,835	96,231	99,706	101,954	104,046
48	143	Lat Phrao 1	LTP1	4	54,665	55,625	56,491	57,307	58,153	58,850
49	144	Lat Phrao 2	LTP2	4	59,108	60,392	61,669	62,956	64,171	65,421
50	145	Chaeng Watthana	CWT	4	64,153	66,568	68,808	70,933	72,777	74,600
51	401	Nonthaburi	NTB	4	52,144	60,614	70,158	80,613	91,589	103,514
52	405	Ngam Wong Wan	NWW	4	76,469	81,525	86,531	91,311	95,715	100,019
53	406	Pak Kret	PKK	4	63,577	68,689	73,434	77,665	81,390	84,894
54	501	Pathum Thani	PTT	4	40,799	44,332	47,527	50,225	52,718	54,802
55	502	Rangsit	RST	4	15,426	16,244	17,086	17,882	18,657	19,386
56	503	Thanyaburi	TYB	4	32,177	39,428	47,220	55,024	62,705	69,738
57	504	Nawa Nakhon	NWN	4	14,597	15,641	16,667	17,611	18,502	19,323
58	511	Bang Phun	BAN	4	7,693	8,554	9,447	10,328	11,089	11,815
BMA Total					4,004,883	4,295,663	4,577,266	4,845,311	5,093,619	5,331,325

8 - 15 Estimation Result for Micro Forecast in BMA(3/3)

No.	Staic Codc	Local Exchange	Telecom.		2003	2004	2005	2006	2007
			ABBR	Area					
Estimated Demand									
1	101	Phloen Chit	PNC	1	231,869	238,279	244,087	249,244	253,949
2	102	Samran Rat	SRR	1	174,476	184,209	193,990	203,740	213,271
3	103	Krung Kasem	KKM	1	95,580	101,694	107,671	113,464	118,868
4	104	Surawong	SRW	1	365,895	386,982	409,021	427,719	446,594
5	105	Samsen	SMS	1	64,352	65,043	65,426	65,532	65,428
6	106	Asok Din Daeng	ASD	1	167,387	168,627	169,604	170,365	170,995
7	107	Pathum Wan	PTW	1	78,596	83,638	88,702	93,709	98,657
8	108	Sukhumwit	SKW	1	66,699	67,102	67,492	67,848	68,253
9	109	Chaiyaphruk	CYP	2	43,535	43,636	43,722	43,779	43,862
10	110	Bang Na	BNA	2	149,262	154,438	159,346	164,021	168,497
11	111	Khlong Chan	KGC	2	175,227	179,028	182,476	185,329	187,791
12	112	Thung Mahamek	TMM	2	76,710	79,055	81,229	83,209	85,023
13	113	Sathupradit	STD	2	32,306	33,029	33,756	34,472	35,181
14	114	Thanon Tok	TNT	2	48,013	50,177	52,263	54,234	56,092
15	115	Bang Chan	BGC	2	111,213	114,214	117,097	119,626	122,256
16	116	Phra Khanong	PKG	2	69,172	72,035	74,828	77,513	80,101
17	117	Hua Mak	HAM	2	137,703	143,272	148,455	153,004	157,213
18	118	Trok Chan	TKC	2	55,683	58,661	61,703	64,769	67,858
19	119	Lat Krabang	LKG	2	35,779	37,158	38,497	39,789	41,052
20	121	Khlong Toei	KTI	2	76,513	78,254	79,745	81,005	82,150
21	123	On Nut	ONT	2	73,203	74,681	76,095	77,375	78,637
22	124	Ramkarnhaeng(Phruksa)	RKN	2	29,439	31,151	32,652	33,988	35,119
23	301	Samut Prakan	SPK	2	96,624	104,575	112,315	120,013	127,682
24	302	Pu Chao Saming Phrai	PSP	2	120,184	122,601	124,655	126,577	128,384
25	303	Bang Phli	BPL	2	141,113	146,911	152,266	157,469	162,614
26	304	Bang Pu	BGU	2	27,940	30,775	33,678	36,684	39,774
27	305	Bang Phli Bang Bo	BBB	2	20,412	21,163	21,879	22,600	23,331
28	126	Thon Buri	TNB	3	64,846	68,510	72,223	75,952	79,732
29	127	Bang Khae	BKE	3	55,524	58,219	60,800	63,221	65,482
30	128	Dao Khanong	DKN	3	57,740	59,904	61,897	63,717	65,400
31	129	Bang Phlat	BGT	3	161,824	166,803	171,531	175,848	179,885
32	130	Phasi Charoen	PSN	3	34,953	35,110	35,250	35,358	35,444
33	131	Charan Sanitwong	CSW	3	89,193	92,163	94,968	97,463	99,791
34	132	Rat Burana	RBN	3	88,067	91,501	94,526	97,253	99,692
35	133	Lat Ya	LTY	3	65,864	66,368	66,736	66,962	67,079
36	134	Muban Setthakit	MSK	3	103,243	106,926	110,446	113,799	117,041
37	135	Ekkachai	EKC	3	121,842	123,112	124,137	125,024	125,798
38	149	Nong Khaem	NGK	3	122,106	126,555	130,898	135,112	139,114
39	308	Phra Pradaeng	PPG	3	91,679	97,705	103,334	108,715	113,845
40	402	Bang Bue Thong	BBT	3	127,932	136,017	143,533	150,438	156,845
41	136	Phahonyothin	PYT	4	195,954	206,189	215,203	223,073	229,597
42	137	Inthamara	ITM	4	77,743	78,070	78,308	78,501	78,634
43	138	Bang Khen	BGN	4	56,123	57,079	57,906	58,815	59,538
44	139	Bang Su	BGS	4	162,185	167,227	171,320	174,714	177,431
45	140	Don Muang	DNM	4	222,624	229,772	236,575	243,172	249,177
46	141	Lak Si	LKS	4	98,598	103,369	107,828	111,919	115,665
47	142	Ram Inthra	RIT	4	105,890	107,546	109,067	110,480	111,682
48	143	Lat Phrao 1	LTP1	4	59,483	60,146	60,713	61,365	61,873
49	144	Lat Phrao 2	LTP2	4	66,629	67,868	69,113	70,239	71,370
50	145	Chaeng Watthana	CWT	4	76,273	77,941	79,571	81,124	82,402
51	401	Nonthaburi	NTB	4	116,130	129,104	142,755	156,846	170,978
52	405	Ngam Wong Wan	NWW	4	104,016	108,113	111,852	115,179	118,418
53	406	Pak Kret	PKK	4	88,118	91,101	93,978	96,719	99,341
54	501	Pathum Thani	PTT	4	56,707	58,393	59,905	61,370	62,726
55	502	Rangsit	RST	4	20,139	20,887	21,633	22,414	23,199
56	503	Thanyaburi	TYB	4	76,164	81,803	86,670	90,965	94,655
57	504	Nawa Nakhon	NWN	4	20,146	20,949	21,738	22,553	23,364
58	511	Bang Phun	BAN	4	12,548	13,276	14,003	14,756	15,516
BMA Total					5,552,618	5,764,841	5,967,065	6,155,386	6,333,827

8 - 16 Estimation Result for Micro Forecast in the Surrounding Area

Province No. ABBR	Amphoe / Local Exchange Area	Telecom.	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Estimated Demand																			
1 NPT	Nakhon Pathom	6	15,693	17,573	20,200	23,230	26,502	30,225	34,266	38,615	43,352	48,282	53,680	59,257	64,952	70,788	76,785	82,898	88,911
2 NPT	Kamphaeng Saen	6	1,243	1,543	1,901	2,349	2,881	3,538	4,323	5,253	6,362	7,637	9,153	10,870	12,797	14,938	17,314	19,899	22,608
3 NPT	Nakhon Chaisri	6	3,465	4,241	5,146	6,245	7,506	9,007	10,771	12,660	14,841	17,191	19,807	22,589	25,443	28,377	31,362	34,341	37,220
4 NPT	Don Tum	6	453	561	689	849	1,038	1,271	1,550	1,878	2,267	2,715	3,244	3,844	4,515	5,257	6,069	6,949	7,867
5 NPT	Bang Len	6	974	1,200	1,469	1,801	2,193	2,674	3,240	3,905	4,695	5,599	6,662	7,861	9,191	10,658	12,249	13,976	15,768
6 NPT	Sam Phran	6	5,472	6,479	7,576	8,843	10,189	11,698	13,284	14,926	16,650	18,320	20,079	21,785	23,429	24,989	26,533	28,033	29,398
Total			27,300	31,596	36,981	43,318	50,308	58,412	67,391	77,238	88,147	99,743	112,625	126,207	140,326	155,008	170,311	186,097	201,773
D/N			0.05	0.05	0.06	0.07	0.08	0.09	0.10	0.12	0.13	0.15	0.16	0.18	0.20	0.22	0.23	0.25	0.27
1 SKN	Samut Sakhon	6	14,289	17,552	21,318	25,822	30,841	36,612	42,939	49,755	56,994	64,503	72,403	80,116	87,655	94,906	101,789	108,481	114,749
2 SKN	Krathum baen	6	4,401	5,449	6,669	8,148	9,749	11,632	13,613	15,715	17,904	20,134	22,505	24,379	26,373	28,268	30,051	31,785	33,406
3 SKN	Ban Phaew	6	3,178	3,869	4,681	5,638	6,728	7,990	9,399	10,974	12,669	14,466	16,366	18,256	20,131	21,955	23,696	25,384	26,954
Total			21,868	26,870	32,668	39,608	47,318	56,233	65,951	76,444	87,567	99,103	111,074	122,750	134,159	145,129	155,535	165,650	175,109
D/N			0.09	0.09	0.11	0.13	0.15	0.17	0.20	0.23	0.25	0.28	0.31	0.34	0.36	0.38	0.41	0.42	0.44
1 AYA	Ayurthaya 1	9	2,019	2,240	2,477	2,738	3,029	3,336	3,666	4,030	4,414	4,836	5,266	5,727	6,212	6,728	7,257	7,797	8,353
2 AYA	Ayurthaya 2	9	4,864	5,619	6,466	7,421	8,512	9,702	11,017	12,479	14,053	15,788	17,584	19,504	21,513	23,622	25,758	27,894	30,031
3 AYA	Bang Pa-in	9	1,875	2,181	2,528	2,919	3,364	3,856	4,411	5,033	5,713	6,472	7,273	8,142	9,068	10,056	11,078	12,120	13,184
4 AYA	Wang Noi	9	2,216	2,588	3,007	3,474	4,006	4,586	5,226	5,931	6,688	7,517	8,370	9,277	10,221	11,209	12,206	13,203	14,204
5 AYA	Phachi	9	891	1,031	1,191	1,376	1,588	1,829	2,102	2,407	2,750	3,133	3,543	3,996	4,487	5,021	5,585	6,172	6,784
6 AYA	Tha Rua	9	1,615	1,893	2,209	2,568	2,964	3,406	3,903	4,457	5,057	5,722	6,416	7,161	7,946	8,775	9,623	10,481	11,350
7 AYA	Sena	9	1,113	1,315	1,544	1,809	2,132	2,483	2,875	3,336	3,841	4,429	5,063	5,772	6,554	7,419	8,351	9,344	10,402
8 AYA	Ban Phraek	9	212	252	300	355	422	501	593	701	828	979	1,152	1,354	1,590	1,864	2,179	2,538	2,949
9 AYA	Bang Syc	9	190	225	265	313	371	437	515	608	715	842	989	1,161	1,361	1,595	1,865	2,172	2,526
10 AYA	Bang Sai	9	296	345	401	466	543	632	735	853	988	1,146	1,321	1,521	1,747	2,003	2,288	2,601	2,947
11 AYA	Phak Hai	9	610	717	838	978	1,143	1,330	1,543	1,788	2,065	2,382	2,728	3,117	3,548	4,026	4,541	5,092	5,681
12 AYA	Bang Ban	9	455	538	633	743	875	1,028	1,207	1,417	1,658	1,937	2,254	2,619	3,034	3,509	4,041	4,630	5,284
13 AYA	Lat Bua Luang	9	244	286	336	393	463	541	634	742	866	1,013	1,178	1,371	1,594	1,851	2,144	2,476	2,854
14 AYA	Maharat	9	178	207	241	281	326	378	438	508	587	680	783	901	1,033	1,183	1,349	1,532	1,733
15 AYA	Nakhon Loang	9	655	773	909	1,067	1,254	1,468	1,714	2,000	2,325	2,702	3,120	3,595	4,128	4,727	5,384	6,097	6,873
16 AYA	Uthai	9	294	353	424	506	607	723	860	1,022	1,213	1,440	1,699	2,001	2,351	2,755	3,213	3,729	4,309
17 AYA	Bang Pahan	9	513	595	686	788	905	1,032	1,171	1,325	1,491	1,672	1,858	2,056	2,262	2,477	2,694	2,910	3,125
Total			18,242	21,158	24,453	28,197	32,502	37,267	42,610	48,637	55,253	62,690	70,596	79,275	88,650	98,821	109,555	120,789	132,589
D/N			0.03	0.03	0.03	0.04	0.04	0.05	0.05	0.06	0.07	0.07	0.08	0.09	0.10	0.11	0.12	0.13	0.14

8 - 17 Estimated Population for each Local Exchange Area (1/4)

No.	Station Code	Local Exchange	Telecom. ABBR Area	1987	1988	1989	1990	1991	1992	
				<i>Population</i>						
1	101	Phloen Chit	PNC	1	118,069	120,885	114,583	100,204	112,990	114,427
2	102	Samran Rat	SRR	1	158,866	154,499	147,757	149,819	174,374	181,639
3	103	Krung Kasem	KKM	1	135,790	134,091	128,672	112,967	128,569	131,224
4	104	Surawong	SRW	1	106,083	104,285	98,540	102,856	120,320	126,422
5	105	Samsen	SMS	1	195,253	198,325	191,121	128,246	141,508	140,230
6	106	Asok Din Daeng	ASD	1	161,858	156,723	155,829	146,288	163,729	164,559
7	107	Pathum Wan	PTW	1	108,728	104,798	99,318	112,035	126,530	128,326
8	108	Sukhumwit	SKW	1	93,340	91,800	89,852	84,531	94,861	95,624
9	109	Chaiyaphruk	CYP	2	67,290	66,730	65,348	58,458	65,345	65,611
10	110	Bang Na	BNA	2	156,420	182,813	190,382	199,620	216,303	223,346
11	111	Khlong Chan	KGC	2	170,245	183,579	194,680	171,057	228,316	233,906
12	112	Thung Mahamek	TMM	2	100,558	98,408	97,814	95,078	107,784	109,730
13	113	Sathupradit	STD	2	34,664	34,832	35,561	32,855	37,551	38,542
14	114	Thanon Tok	TNT	2	94,112	95,432	95,848	98,350	110,732	112,094
15	115	Bang Chan	BGC	2	155,191	163,793	172,036	173,712	186,229	191,769
16	116	Phra Khanong	PKG	2	71,093	74,534	76,739	77,616	89,518	92,718
17	117	Hua Mak	HAM	2	156,890	164,612	171,144	173,781	197,131	200,829
18	118	Trok Chan	TKC	2	162,029	160,657	161,117	157,326	178,114	181,166
19	119	Lat Krabang	LKG	2	44,462	44,795	45,290	43,986	50,666	52,408
20	121	Khlong Toei	KTI	2	110,325	109,646	108,688	99,981	112,453	113,612
21	123	On Nut	ONT	2	97,601	102,933	106,317	105,488	118,949	120,471
22	124	Ramkamhaeng(Phruksa	RKN	2	25,567	28,658	31,821	106,270	42,761	45,644
23	301	Samut Prakan	SPK	2	121,536	129,692	134,165	139,591	136,089	141,631
24	302	Pu Chao Saming Phrai	PSP	2	181,641	172,990	182,378	187,678	180,288	184,639
25	303	Bang Phli	BPL	2	157,969	169,646	180,429	185,537	183,809	190,470
26	304	Bang Pu	BGU	2	72,186	77,006	81,731	84,707	82,318	85,394
27	305	Bang Phli Bang Bo	BBB	2	20,428	21,408	22,256	22,835	22,082	22,824
28	126	Thon Buri	TNB	3	280,753	276,070	273,076	266,555	297,951	299,100
29	127	Bang Khae	BKE	3	122,602	122,767	127,167	127,164	143,421	145,247
30	128	Dao Khanong	DKN	3	161,951	162,378	163,276	153,558	170,853	170,710
31	129	Bang Phlat	BGT	3	218,793	221,245	243,870	241,215	273,145	277,897
32	130	Phasi Charoen	PSN	3	54,535	57,388	61,304	59,900	67,095	67,497
33	131	Charan Sanitwong	CSW	3	174,231	178,354	192,508	177,621	200,017	202,411
34	132	Rat Burana	RBN	3	164,492	168,886	177,953	179,134	200,695	201,923
35	133	Lat Ya	LTY	3	146,781	145,901	147,407	122,409	135,778	135,249
36	134	Muban Ssethakit	MSK	3	104,472	111,601	122,226	125,286	145,136	151,045
37	135	Ekkachai	EKC	3	222,144	234,131	249,027	234,698	261,663	263,142
38	149	Nong Khaem	NGK	3	105,981	111,517	118,896	125,326	128,464	134,104
39	308	Phra Pradaeng	PPG	3	163,697	172,357	179,099	182,824	175,099	179,161
40	402	Bang Bue Thong	BBT	3	194,283	202,256	212,493	223,204	213,508	221,258
41	136	Phahonyothin	PYT	4	279,607	276,322	276,877	254,433	283,308	283,230
42	137	Inthamara	ITM	4	104,918	105,236	107,294	104,988	117,487	118,054
43	138	Bang Khen	BGN	4	42,488	42,611	42,949	43,832	49,582	50,297
44	139	Bang Su	BGS	4	375,017	385,116	386,884	274,960	308,665	311,095
45	140	Don Muang	DNM	4	252,509	269,707	280,223	297,497	326,304	337,350
46	141	Lak Si	LKS	4	149,823	160,458	168,491	168,928	191,206	194,357
47	142	Ram Inthra	RIT	4	109,341	119,944	128,790	90,899	155,005	160,909
48	143	Lat Phrao 1	LTP1	4	68,140	69,394	71,123	71,900	81,122	82,106
49	144	Lat Phrao 2	LTP2	4	66,618	70,225	72,716	72,964	82,838	84,471
50	145	Chaeng Watthana	CWT	4	47,734	50,121	51,936	50,478	57,858	59,521
51	401	Nonthaburi	NTB	4	198,099	203,952	210,816	224,106	217,606	226,952
52	405	Ngam Wong Wan	NWW	4	124,660	128,998	134,982	139,696	140,717	144,281
53	406	Pak Kret	PKK	4	108,817	116,546	125,516	132,492	117,434	121,265
54	501	Pathum Thani	PTT	4	96,024	100,123	101,457	102,820	102,635	105,279
55	502	Rangsit	RST	4	16,393	17,961	18,597	19,424	19,751	20,643
56	503	Thanyaburi	TYB	4	163,679	168,319	169,256	171,243	169,996	173,401
57	504	Nawa Nakhon	NWN	4	19,528	21,412	22,171	23,164	23,557	24,622
58	511	Bang Phun	BAN	4	10,243	10,982	11,303	12,173	12,606	13,429
BMA Total					7,426,544	7,629,848	7,829,100	7,625,762	8,279,820	8,449,263

8 - 17 Estimated Population for each Local Exchange Area (2/4)

Station No.	Local Exchange Code	ABBR	Telecom. Area	Population					
				1993	1994	1995	1996	1997	1998
1	101 Phloen Chit	PNC	1	115,811	117,251	118,701	120,010	121,308	122,567
2	102 Samran Rat	SRR	1	188,620	196,136	203,812	210,582	216,802	223,568
3	103 Krung Kasem	KKM	1	133,694	136,289	138,880	141,148	143,210	145,308
4	104 Surawong	SRW	1	132,764	139,505	145,989	152,534	159,093	165,829
5	105 Samsen	SMS	1	138,871	137,585	136,306	135,089	133,868	132,564
6	106 Asok Din Daeng	ASD	1	165,269	166,040	166,794	167,336	167,820	168,334
7	107 Pathum Wan	PTW	1	130,058	131,861	133,677	135,335	136,975	138,597
8	108 Sukhumwit	SKW	1	96,357	97,119	97,883	98,558	99,227	99,857
9	109 Chaiyaphruk	CYP	2	65,850	66,105	66,355	66,539	66,715	66,861
10	110 Bang Na	BNA	2	230,434	237,129	244,154	251,038	257,914	264,594
11	111 Khlong Chan	KGC	2	239,223	244,915	250,508	255,488	260,725	264,839
12	112 Thung Mahamek	TMM	2	111,631	113,608	115,610	117,446	119,288	121,068
13	113 Sathupradit	STD	2	39,530	40,559	41,610	42,615	43,636	44,647
14	114 Thanon Tok	TNT	2	113,391	114,745	116,105	117,279	118,442	119,525
15	115 Bang Chan	BGC	2	197,245	203,004	208,834	214,323	219,975	225,269
16	116 Phra Khanong	PKG	2	95,961	98,868	101,852	104,746	107,701	110,653
17	117 Hua Mak	HAM	2	204,465	208,257	212,114	215,760	219,469	223,087
18	118 Trok Chan	TKC	2	184,145	187,251	190,398	193,273	196,162	198,951
19	119 Lat Krabang	LKG	2	54,171	56,016	57,917	59,780	61,692	63,616
20	121 Khlong Toei	KTI	2	114,734	115,903	117,083	118,143	119,203	120,215
21	123 On Nut	ONT	2	121,944	123,501	125,087	126,645	128,276	129,784
22	124 Ramkamhaeng(Phruksa	RKN	2	48,440	51,487	54,497	57,232	60,183	62,450
23	301 Samut Prakan	SPK	2	147,424	153,736	160,410	167,621	175,070	182,762
24	302 Pu Chao Saming Phrai	PSP	2	188,595	192,825	196,715	200,478	203,877	206,555
25	303 Bang Phli	BPL	2	196,815	203,799	210,745	217,891	225,064	231,731
26	304 Bang Pu	BGU	2	88,396	91,685	94,969	98,350	101,671	104,798
27	305 Bang Phli Bang Bo	BBB	2	23,542	24,310	25,072	25,885	26,698	27,449
28	126 Thon Buri	TNB	3	300,055	301,142	302,221	302,800	303,340	303,929
29	127 Bang Khae	BKE	3	146,974	148,764	150,544	152,070	153,565	154,943
30	128 Dao Khanong	DKN	3	170,457	170,250	170,022	169,620	169,209	168,866
31	129 Bang Phlat	BGT	3	282,666	287,261	291,980	296,648	301,061	305,770
32	130 Phasi Charoen	PSN	3	67,859	68,255	68,654	68,943	69,227	69,464
33	131 Charan Sanitwong	CSW	3	204,834	207,100	209,463	211,903	214,096	216,520
34	132 Rat Burana	RBN	3	203,015	204,185	205,340	206,346	207,375	208,451
35	133 Lat Ya	LTY	3	134,625	134,053	133,471	132,662	131,832	130,907
36	134 Muban Setthakit	MSK	3	157,140	163,601	170,375	176,113	182,046	188,075
37	135 Ekkachai	EKC	3	264,460	265,895	267,281	268,495	269,683	270,744
38	149 Nong Khaem	NGK	3	139,472	145,473	150,861	156,867	162,322	167,756
39	308 Phra Pradaeng	PPG	3	182,810	186,555	190,137	193,963	198,079	201,613
40	402 Bang Bue Thong	BBT	3	229,037	237,151	245,598	254,380	262,897	271,116
41	136 Phahonyothin	PYT	4	282,910	282,726	282,546	281,959	281,320	280,473
42	137 Inthamara	ITM	4	118,526	119,039	119,537	119,829	120,090	120,308
43	138 Bang Khen	BGN	4	50,941	51,626	52,331	53,012	53,676	54,298
44	139 Bang Su	BGS	4	313,270	315,596	317,927	319,787	321,583	323,136
45	140 Don Muang	DNM	4	348,047	359,680	370,465	381,668	392,601	402,939
46	141 Lak Si	LKS	4	197,422	200,612	203,838	206,764	209,695	212,509
47	142 Ram Inthra	RIT	4	166,522	172,613	178,556	183,757	189,322	193,393
48	143 Lat Phrao 1	LTP1	4	82,984	83,924	84,887	85,790	86,668	87,487
49	144 Lat Phrao 2	LTP2	4	86,089	87,784	89,517	91,143	92,795	94,419
50	145 Chaeng Watthana	CWT	4	61,149	62,837	64,548	66,127	67,713	69,250
51	401 Nonthaburi	NTB	4	236,412	246,321	256,686	267,592	277,987	288,121
52	405 Ngam Wong Wan	NWW	4	147,706	151,251	154,891	158,439	161,960	165,201
53	406 Pak Kret	PKK	4	125,032	128,985	133,009	137,210	141,199	144,976
54	501 Pathum Thani	PTT	4	107,639	110,479	113,185	115,872	118,208	120,249
55	502 Rangsit	RST	4	21,480	22,418	23,264	24,252	25,207	26,142
56	503 Thanyaburi	TYB	4	176,491	180,027	182,919	186,513	189,823	192,896
57	504 Nawa Nakhon	NWN	4	25,621	26,741	27,751	28,929	30,069	31,184
58	511 Bang Phun	BAN	4	14,271	15,223	16,166	17,231	18,338	19,493
BMA Total				8,613,297	8,787,051	8,960,048	9,127,810	9,293,050	9,450,105

8 - 17 Estimated Population for each Local Exchange Area (3/4)

Station No.	Local Exchange Code	Telecom. ABBR	Area	Population					
				1999	2000	2001	2002	2003	2004
1	101 Phloen Chit	PNC	1	123,843	125,147	126,302	127,508	128,639	129,809
2	102 Samran Rat	SRR	1	229,962	236,007	241,574	247,940	253,952	259,558
3	103 Krung Kasem	KKM	1	147,273	149,121	150,837	152,750	154,463	156,055
4	104 Surawong	SRW	1	172,891	180,164	186,518	193,984	200,895	208,832
5	105 Samsen	SMS	1	131,296	130,080	128,911	127,832	126,648	125,517
6	106 Asok Din Daeng	ASD	1	168,876	169,306	169,784	170,190	170,570	170,956
7	107 Pathum Wan	PTW	1	140,228	141,886	143,398	144,952	146,433	147,969
8	108 Sukhumwit	SKW	1	100,499	101,161	101,717	102,310	102,848	103,406
9	109 Chaiphruk	CYP	2	67,009	67,165	67,247	67,348	67,409	67,478
10	110 Bang Na	BNA	2	271,580	278,475	284,990	290,902	296,721	302,695
11	111 Khlong Chan	KGC	2	269,498	274,581	278,064	281,608	284,827	287,959
12	112 Thung Mahamek	TMM	2	122,890	124,770	126,449	128,222	129,897	131,630
13	113 Sathupradit	STD	2	45,686	46,761	47,774	48,835	49,872	50,945
14	114 Thanon Tok	TNT	2	120,632	121,780	122,714	123,723	124,621	125,561
15	115 Bang Chan	BGC	2	230,877	236,787	241,917	247,323	252,206	257,586
16	116 Phra Khanong	PKG	2	113,700	116,859	119,705	122,265	124,762	127,343
17	117 Hua Mak	HAM	2	226,834	230,627	234,293	238,103	241,814	245,653
18	118 Trok Chan	TKC	2	201,810	204,772	207,404	210,195	212,829	215,565
19	119 Lat Krabang	LKG	2	65,608	67,679	69,688	71,796	73,898	76,082
20	121 Khlong Toei	KTI	2	121,250	122,319	123,246	124,231	125,146	126,094
21	123 On Nut	ONT	2	131,340	132,932	134,492	136,162	137,768	139,480
22	124 Ramkamhaeng(Phruksa	RKN	2	65,143	68,171	70,177	72,178	74,075	75,875
23	301 Samut Prakan	SPK	2	191,229	199,786	207,479	215,203	223,348	231,931
24	302 Pu Chao Saming Phrai	PSP	2	209,500	211,451	215,308	218,772	222,230	225,662
25	303 Bang Phli	BPL	2	239,173	246,536	253,797	260,925	268,310	275,987
26	304 Bang Pu	BGU	2	108,269	111,600	115,013	118,350	121,820	125,426
27	305 Bang Phli Bang Bo	BBB	2	28,287	29,159	30,111	31,043	32,011	33,017
28	126 Thon Buri	TNB	3	304,520	305,107	305,321	305,758	305,872	306,085
29	127 Bang Khae	BKE	3	156,336	157,765	158,899	160,115	161,168	162,259
30	128 Dao Khanong	DKN	3	168,503	168,134	167,664	167,262	166,755	166,241
31	129 Bang Phlat	BGT	3	310,355	314,791	319,145	323,979	328,552	333,199
32	130 Phasi Charoen	PSN	3	69,719	69,999	70,159	70,364	70,512	70,685
33	131 Charan Sanitwong	CSW	3	218,800	221,022	223,289	225,983	228,364	230,849
34	132 Rat Burana	RBN	3	209,684	210,898	212,034	213,271	214,473	215,573
35	133 Lat Ya	LYT	3	130,003	129,137	128,386	127,769	127,218	126,673
36	134 Muban Setthakit	MSK	3	193,139	198,409	203,465	208,785	214,059	219,546
37	135 Ekkachai	EKC	3	271,836	273,034	274,278	275,476	276,731	277,962
38	149 Nong Khaem	NGK	3	172,983	177,936	183,327	188,738	194,024	199,343
39	308 Phra Pradaeng	PPG	3	205,761	209,291	213,593	217,641	221,831	226,158
40	402 Bang Bue Thong	BBT	3	279,973	288,874	298,290	308,457	318,611	328,754
41	136 Phahonyothin	PYT	4	279,670	278,985	278,036	277,084	275,908	274,879
42	137 Inthamara	ITM	4	120,589	120,780	120,992	121,155	121,268	121,375
43	138 Bang Khen	BGN	4	54,929	55,607	56,391	57,056	57,689	58,388
44	139 Bang Su	BGS	4	324,728	326,443	327,870	329,307	330,477	331,791
45	140 Don Muang	DNM	4	414,199	425,232	436,017	446,870	457,777	468,935
46	141 Lak Si	LKS	4	215,391	218,370	220,989	223,767	226,369	229,070
47	142 Ram Inthra	RIT	4	198,274	203,785	207,154	210,498	213,557	216,403
48	143 Lat Phrao 1	LTP1	4	88,326	89,214	90,244	91,115	91,938	92,846
49	144 Lat Phrao 2	LTP2	4	96,098	97,847	99,527	101,296	103,032	104,837
50	145 Chaeng Watthana	CWT	4	70,821	72,440	73,900	75,436	76,894	78,402
51	401 Nonthaburi	NTB	4	299,122	310,229	320,239	331,053	342,036	352,579
52	405 Ngam Wong Wan	NWW	4	168,670	172,059	175,124	178,396	181,494	185,117
53	406 Pak Kret	PKK	4	149,110	153,185	157,095	161,256	165,417	169,544
54	501 Pathum Thani	PTT	4	122,534	124,593	127,048	129,251	131,627	133,959
55	502 Rangsit	RST	4	27,185	28,209	29,242	30,241	31,303	32,380
56	503 Thanyaburi	TYB	4	196,491	199,746	203,453	206,747	210,313	213,809
57	504 Nawa Nakhon	NWN	4	32,428	33,649	34,883	36,075	37,343	38,628
58	511 Bang Phun	BAN	4	20,807	22,175	23,362	24,545	25,802	27,094
BMA Total				9,616,167	9,782,028	9,938,324	10,099,399	10,256,428	10,417,430

8 - 17 Estimated Population for each Local Exchange Area (4/4)

Station No.	Local Exchange Code	Telecom. ABBR	Area	2005	2006	2007
Population						
1	101 Phloen Chit	PNC	1	130,976	132,076	133,182
2	102 Samran Rat	SRR	1	265,244	270,941	276,438
3	103 Krung Kasem	KKM	1	157,612	159,128	160,377
4	104 Surawong	SRW	1	217,614	224,933	232,641
5	105 Samsen	SMS	1	124,390	123,202	121,972
6	106 Asok Din Daeng	ASD	1	171,304	171,606	171,899
7	107 Pathum Wan	PTW	1	149,499	150,946	152,358
8	108 Sukhumwit	SKW	1	103,959	104,473	105,071
9	109 Chaiyaphruk	CYP	2	67,541	67,573	67,655
10	110 Bang Na	BNA	2	308,594	314,448	320,285
11	111 Khlong Chan	KGC	2	291,009	293,518	295,753
12	112 Thung Mahamek	TMM	2	133,372	135,050	136,681
13	113 Sathupradit	STD	2	52,034	53,112	54,185
14	114 Thanon Tok	TNT	2	126,492	127,347	128,145
15	115 Bang Chan	BGC	2	263,027	267,921	273,228
16	116 Phra Khanong	PKG	2	129,962	132,547	135,115
17	117 Hua Mak	HAM	2	249,557	253,046	256,551
18	118 Trok Chan	TKC	2	218,317	220,970	223,555
19	119 Lat Krabang	LKG	2	78,321	80,574	82,850
20	121 Khlong Toei	KTI	2	127,045	127,945	128,912
21	123 On Nut	ONT	2	141,274	142,985	144,791
22	124 Ramkamhaeng(Phruksa	RKN	2	77,622	79,354	80,912
23	301 Samut Prakan	SPK	2	240,574	249,682	259,279
24	302 Pu Chao Saming Phrai	PSP	2	228,677	231,637	234,529
25	303 Bang Phli	BPL	2	283,527	291,325	299,423
26	304 Bang Pu	BGU	2	128,953	132,618	136,420
27	305 Bang Phli Bang Bo	BBB	2	34,003	35,027	36,088
28	126 Thon Buri	TNB	3	306,224	306,225	306,295
29	127 Bang Khac	BKE	3	163,323	164,270	165,125
30	128 Dao Khanong	DKN	3	165,671	165,062	164,510
31	129 Bang Phlat	BGT	3	337,893	342,278	346,573
32	130 Phasi Charoen	PSN	3	70,856	70,991	71,097
33	131 Charan Sanitwong	CSW	3	233,467	235,818	238,218
34	132 Rat Burana	RBN	3	216,564	217,649	218,782
35	133 Lat Ya	LTY	3	126,157	125,608	125,046
36	134 Muban Setthakit	MSK	3	225,163	230,794	236,468
37	135 Ekkachai	EKC	3	279,068	280,177	281,264
38	149 Nong Khaem	NGK	3	204,869	210,478	215,976
39	308 Phra Pradaeng	PPG	3	230,234	234,449	238,789
40	402 Bang Buc Thong	BBT	3	339,263	349,758	360,242
41	136 Phahonyothin	PYT	4	273,740	272,615	271,229
42	137 Inthamara	ITM	4	121,439	121,505	121,534
43	138 Bang Khen	BGN	4	58,998	59,727	60,297
44	139 Bang Su	BGS	4	332,973	334,221	335,311
45	140 Don Muang	DNM	4	480,172	491,585	502,253
46	141 Lak Si	LKS	4	231,779	234,373	236,882
47	142 Ram Inthra	RIT	4	219,100	221,670	223,885
48	143 Lat Phrao 1	LTP1	4	93,636	94,579	95,315
49	144 Lat Phrao 2	LTP2	4	106,672	108,337	110,024
50	145 Chaeng Watthana	CWT	4	79,912	81,377	82,588
51	401 Nonthaburi	NTB	4	363,924	375,691	387,220
52	405 Ngam Wong Wan	NWW	4	188,446	191,387	194,464
53	406 Pak Kret	PKK	4	173,794	178,040	182,251
54	501 Pathum Thani	PTT	4	136,250	138,703	141,117
55	502 Rangsit	RST	4	33,472	34,629	35,802
56	503 Thanyaburi	TYB	4	217,237	220,922	224,533
57	504 Nawa Nakhon	NWN	4	39,930	41,311	42,711
58	511 Bang Phun	BAN	4	28,421	29,829	31,275
BMA Total				10,579,142	10,738,040	10,895,371

8 - 18 Expressed Demand in BMA

Station No.	Local Exchange Code	Telecom. Area	1987	1988	1989	1990
1	101 Phloen Chit	PNC 1	55,183	58,713	67,126	79,837
2	102 Samran Rat	SRR 1	41,099	43,824	47,154	52,656
3	103 Krung Kasem	KKM 1	18,712	19,783	21,329	23,062
4	104 Surawong	SRW 1	46,360	55,165	63,482	80,226
5	105 Samsen	SMS 1	10,825	11,621	13,290	14,639
6	106 Asok Din Daeng	ASD 1	30,579	33,397	40,457	65,944
7	107 Pathum Wan	PTW 1	16,461	16,941	20,823	23,044
8	108 Sukhumwit	SKW 1	20,924	22,001	30,338	47,920
9	109 Chaiyaphruk	CYP 2	21,625	23,425	26,023	33,837
10	110 Bang Na	BNA 2	27,340	32,733	37,951	55,789
11	111 Khlong Chan	KGC 2	31,730	37,842	47,172	56,831
12	112 Thung Mahamek	TMM 2	16,933	17,043	16,837	25,903
13	113 Sathupradit	STD 2	9,972	11,433	12,896	18,938
14	114 Thanon Tok	TNT 2	11,114	13,081	14,354	16,643
15	115 Bang Chan	BGC 2	8,013	11,708	16,956	33,796
16	116 Phra Khanong	PKG 2	14,479	16,005	18,922	23,596
17	117 Hua Mak	HAM 2	18,102	21,328	25,276	35,199
18	118 Trok Chan	TKC 2	18,019	20,032	20,411	21,764
19	119 Lat Krabang	LKG 2	2,311	3,297	4,705	7,106
20	121 Khlong Toei	KTI 2	9,638	10,397	11,996	17,800
21	123 On Nut	ONT 2	14,108	16,545	21,070	29,643
22	124 Ramkamhaeng(Phru)	RKN 2	2,248	2,608	4,171	5,046
23	301 Samut Prakan	SPK 2	7,358	8,289	11,430	14,784
24	302 Pu Chao Saming Phr	PSP 2	20,511	25,128	36,940	49,415
25	303 Bang Phli	BPL 2	8,171	11,145	13,693	25,952
26	304 Bang Pu	BGU 2	3,131	4,059	4,001	5,326
27	305 Bang Phli Bang Bo	BBB 2	933	1,510	2,906	6,626
28	126 Thon Buri	TNB 3	19,568	19,384	21,028	23,923
29	127 Bang Khae	BKE 3	11,343	12,347	14,868	17,271
30	128 Dao Khanong	DKN 3	15,402	16,574	18,599	21,318
31	129 Bang Phlat	BGT 3	37,486	42,217	60,022	65,279
32	130 Phasi Charoen	PSN 3	10,501	12,687	17,621	23,350
33	131 Charan Sanitwong	CSW 3	18,691	21,194	26,625	31,120
34	132 Rat Burana	RBN 3	12,062	16,618	18,813	22,493
35	133 Lat Ya	LTY 3	20,791	22,353	25,438	31,024
36	134 Muban Setthakit	MSK 3	5,805	7,600	11,835	18,702
37	135 Ekkachai	EKC 3	15,739	25,381	32,074	43,772
38	149 Nong Khaem	NGK 3	7,472	10,187	15,474	26,243
39	308 Phra Pradaeng	PPG 3	10,750	12,873	14,755	20,106
40	402 Bang Buc Thong	BBT 3	2,364	3,770	6,558	11,500
41	136 Phahonyothin	PYT 4	24,138	26,728	31,900	38,011
42	137 Inthamara	ITM 4	22,067	26,737	32,491	45,403
43	138 Bang Khen	BGN 4	18,439	20,334	24,345	32,312
44	139 Bang Su	BGS 4	18,484	20,777	23,478	27,037
45	140 Don Muang	DNM 4	15,392	20,483	33,026	53,065
46	141 Lak Si	LKS 4	13,159	14,519	19,004	24,237
47	142 Ram Inthra	RIT 4	11,713	14,607	19,066	29,550
48	143 Lat Phrao 1	LTP1 4	15,680	17,885	23,894	36,665
49	144 Lat Phrao 2	LTP2 4	21,302	24,992	31,275	43,008
50	145 Chaeng Watthana	CWT 4	12,678	14,706	19,277	33,183
51	401 Nonthaburi	NTB 4	9,213	10,696	12,947	16,477
52	405 Ngam Wong Wan	NWW 4	22,364	25,777	31,551	40,247
53	406 Pak Kret	PKK 4	6,932	9,046	13,646	23,655
54	501 Pathum Thani	PTT 4	3,130	4,027	6,277	12,006
55	502 Rangsit	RST 4	3,246	4,347	5,885	8,400
56	503 Thanyaburi	TYB 4	1,765	2,138	3,480	4,658
57	504 Nawa Nakhon	NWN 4	1,112	2,333	3,183	5,666
58	511 Bang Phun	BAN 4				
BMA Total			894,667	1,032,370	1,270,144	1,701,003

Source: Telephone Statistics 1990/TOT
 Status of Telephone Lines, Waiting List and Cable as of September 1987, 1988 and 1990/TOT

8 - 19 Expressed Demand in the Surrounding Area

No.	Area Code	Exchange Name	1987	1988	1989	1990
1	6	Nakhon Pathom	8,560	9,907	11,463	13,864
2	6	Sam Phran	2,772	3,130	4,025	4,879
3	6	Nakhon Chaisi	1,059	1,208	2,300	2,994
4	6	Kamphaeng Saen	400	450	582	1,062
		Total	12,791	14,695	18,370	22,799
5	6	Samut Sakhon	5,089	6,672	7,991	12,358
6	6	Krathum baen	1,826	2,123	2,972	3,786
7	6	Ban Phaeo	1,549	2,172	2,532	2,776
		Total	8,464	10,967	13,495	18,920
8	9	Ayutthaya 1	1,266	1,452	1,352	1,746
9	9	Ayutthaya 2	2,034	2,195	3,128	4,036
10	9	Bang Pa-in	423	494	614	1,119
11	9	Wang Noi	508	622	1,039	1,357
12	9	Phachi	281	387	487	739
13	9	Tha Rua	823	952	1,082	1,402
14	9	Sena	537	596	697	934
15	9	Phra Intharacha	342	456	601	863
16	9	Ban Phraek	0	0	138	164
17	9	Bang Sye	0	0	102	153
18	9	Bang Sai	0	0	0	236
19	9	Phak Hai	0	0	0	500
20	9	Bang Ban	0	0	0	362
21	9	Lat Bua Luang	0	0	0	198
22	9	Maharat	0	0	0	146
23	9	Nakhon Loang	0	0	0	530
24	9	Uthai	0	0	0	224
25	9	Bang Pahan	0	0	0	427
26	9	Suan Utsahakae Rochana	0	0	0	0
		Total	6,214	7,154	9,240	15,136

Source: Telephone Statistics 1990/TOT
 Satus of Telephone Lines, Waiting List and Cable as of September 1987, 1988 and 1990/TOT

8 - 20 Telephone Densities of Branch Office Area in Tokyo Metropolitan Area in 1991

Group	Branch Office Area	Telephone Subscriber			Population	Business Sub Telephone	
		Residential	Business Sub.	Total		Rate	Density
1 City Core	Chiyoda	11,565	289,908	301,473	43,142	0.96	6.99
2 City Core	Chyuou	27,343	303,412	330,755	83,687	0.92	3.95
3 City Core	Minato	90,029	298,680	388,709	202,453	0.77	1.92
4 City Core	Shinjyuku	193,706	265,184	458,890	385,186	0.58	1.19
5 Sub City Core A	Daitou	47,525	158,071	205,596	159,848	0.77	1.29
6 Sub City Core A	Sumida	87,925	85,293	173,218	271,193	0.49	0.64
7 Sub City Core A	Shinagawa	94,941	77,399	172,340	221,551	0.45	0.78
8 Sub City Core A	Shibuya	72,228	122,144	194,372	149,856	0.63	1.30
9 Sub City Core A	Toshima	134,922	109,012	243,934	292,179	0.45	0.83
10 Sub City Core B	Bunkyou	93,860	83,582	177,442	219,465	0.47	0.81
11 Sub City Core B	Meguro	107,041	50,908	157,949	235,213	0.32	0.67
12 Sub City Core B	Nakano	128,468	40,066	168,534	269,051	0.24	0.63
13 Sub City Core B	Kita	100,904	34,690	135,594	266,245	0.26	0.51
14 Sub City Core B	Arakawa	63,364	45,771	109,135	185,635	0.42	0.59
15 Residential Area A	Otaku	288,480	143,413	431,893	758,183	0.33	0.57
16 Residential Area A	Setagaya	325,802	93,048	418,850	724,041	0.22	0.58
17 Residential Area A	Suginami	265,271	71,230	336,501	560,029	0.21	0.60
18 Residential Area A	Itabashi	279,628	94,486	374,114	700,971	0.25	0.53
19 Residential Area A	Adachi	205,202	84,690	289,892	609,100	0.29	0.48
20 Residential Area B	Koutou	131,299	84,350	215,649	372,114	0.39	0.58
21 Residential Area B	Nerima	196,312	54,172	250,484	500,399	0.22	0.50
22 Residential Area B	Katushika	123,444	53,755	177,199	365,403	0.30	0.48
23 Residential Area B	Edogawa	203,006	80,427	283,433	574,401	0.28	0.49
24 Residential Area B	Hachiouji	163,901	56,366	220,267	478,041	0.26	0.46
25 Suburb	Tama-naka	357,183	122,661	479,844	1,060,980	0.26	0.45
26 Suburb	Musashino	342,450	90,231	432,681	868,339	0.21	0.50
27 Suburb	Tama-higashi	305,178	77,840	383,018	838,513	0.20	0.46
28 Suburb	Sagamihara	306,192	90,892	397,084	903,375	0.23	0.44
Total		4,747,169	3,161,681	7,908,850	12,298,593		0.64

Source: NTT Tokyo Regional Head Office

8-21 Result of X² Analysis(1/5)

Business Category	Discount Ser.1						Expection				Discount Ser.2						Expection				
			No. of Companies			No. of Co.								No. of Companies		No. of Co.					
	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y			
1: Agr. + Min.	1	50%	50%	4.5	4.5	9	6	3	0.596	1.517	1	38%	63%	3.4	5.6	9	5	4	0.351	0.376	
2: Manufacturing	2	72%	28%	44.9	17.1	62	45	17	0.003	0.008	2	41%	59%	25.2	36.8	62	32	30	1.451	1.553	
3: Utilities	3	100%	0%	3.0	0.0	3	2	1	0.332	0.846	3	67%	33%	2.0	1.0	3	2	1	0.131	0.14	
4: Costruction	4	67%	33%	10.7	5.3	16	11	5	0.058	0.148	4	67%	33%	10.7	5.3	16	8	8	0.696	0.745	
5: Wholesale	5	71%	29%	20.5	8.5	29	21	8	0.004	0.01	5	67%	33%	19.3	9.7	29	15	14	1.262	1.351	
6: Retail	6	73%	27%	9.5	3.5	13	9	4	0.001	0.004	6	18%	81%	2.4	10.6	13	7	6	2.822	2.913	
7: Rest. + Hotel	7	71%	28%	6.4	2.5	9	6	3	2E-04	1E-04	7	57%	43%	5.1	3.9	9	5	4	0.051	0.054	
8: Transport	8	64%	36%	10.3	5.7	16	11	5	0.125	0.32	8	64%	36%	10.3	5.7	16	8	8	0.491	0.526	
9: Finan. + Real Est.	9	76%	24%	45.1	13.9	59	42	17	0.174	0.442	9	49%	51%	29.0	30.0	59	31	28	0.077	0.083	
10: Private Ser. + Gov.	10	73%	27%	11.0	4.0	15	11	4	0.005	0.012	10	80%	20%	12.0	3.0	15	8	7	2.324	2.487	
Total				166	65	230.9	166	65	1.299	3.307	Total			119	112	230.9	119	112	9.656	10.23	
							(r-1)	9									(r-1) ²	9			
							Standard X ²	11.07									Standard X ²	11.07			
Discount Ser.3						Expection				Discount Ser.4						Expection					
Business Category			No. of Companies			No. of Co.								No. of Companies		No. of Co.					
	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y			
	1: Agr. + Min.	1	75%	25%	6.8	2.3	9	6	3	0.177	0.311	1	63%	38%	5.6	3.4	9	5	4	0.007	0.217
2: Manufacturing	2	63%	37%	38.9	23.1	62	40	22	0.012	0.021	2	56%	44%	34.7	27.3	62	37	30	0.197	0.226	
3: Utilities	3	67%	33%	2.0	1.0	3	2	1	0.004	0.007	3	67%	33%	2.0	1.0	3	2	1	0.021	0.14	
4: Costruction	4	92%	8%	14.7	1.3	16	10	6	1.95	3.439	4	67%	33%	10.7	5.3	16	10	8	0.109	0.745	
5: Wholesale	5	67%	33%	19.3	9.7	29	19	10	0.038	0.067	5	63%	38%	18.1	10.9	29	17	14	0.024	0.7	
6: Retail	6	55%	46%	7.1	5.9	13	8	5	0.177	0.311	6	55%	46%	7.1	5.9	13	8	6	0.072	0.021	
7: Rest. + Hotel	7	43%	57%	3.9	5.1	9	6	3	0.617	1.087	7	71%	29%	6.4	2.6	9	5	4	1.185	0.723	
8: Transport	8	64%	36%	10.3	5.7	16	10	6	6E-04	0.001	8	57%	43%	9.1	6.9	16	10	8	0.027	0.097	
9: Finan. + Real Est.	9	64%	36%	37.5	21.5	59	38	21	4E-04	7E-04	9	64%	36%	37.5	21.5	59	36	28	1.108	1.73	
10: Private Ser. + Gov.	10	47%	53%	7.0	8.0	15	10	5	0.688	1.214	10	53%	47%	8.0	7.0	15	9	7	0.121	0.008	
Total				147	84	231	147	84	3.663	6.459	Total			139	92	231	139	112	0.871	4.608	
							(r-1)	9									(r-1) ²	9			
							Standard X ²	11.07									Standard X ²	11.07			
Discount Ser.5						Expection				Discount Ser.6						Expection					
Business Category			No. of Companies			No. of Co.								No. of Companies		No. of Co.					
	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y			
	1: Agr. + Min.	1	88%	13%	7.9	1.1	9	7	2	0.217	0.621	1	88%	13%	7.9	1.1	9	8	1	0.01	0.056
2: Manufacturing	2	76%	24%	47.3	14.7	62	46	16	0.039	0.112	2	95%	5%	58.8	3.2	62	52	10	0.814	4.395	
3: Utilities	3	100%	0%	3.0	0.0	3	2	1	0.271	0.776	3	67%	33%	2.0	1.0	3	3	0	0.111	0.6	
4: Costruction	4	58%	42%	9.3	6.7	16	12	4	0.542	1.553	4	100%	0%	16.0	0.0	16	14	2	0.463	2.5	
5: Wholesale	5	79%	21%	23.0	6.0	29	22	7	0.1	0.287	5	88%	13%	25.4	3.6	29	24	5	0.034	0.181	
6: Retail	6	64%	36%	8.3	4.7	13	10	3	0.195	0.559	6	91%	9%	11.8	1.2	13	11	2	0.066	0.354	
7: Rest. + Hotel	7	71%	29%	6.4	2.6	9	7	2	0.009	0.026	7	86%	14%	7.7	1.3	9	8	1	0.002	0.01	
8: Transport	8	57%	43%	9.1	6.9	16	12	4	0.627	1.797	8	79%	21%	12.6	3.4	16	14	2	0.063	0.342	
9: Finan. + Real Est.	9	75%	26%	44.0	15.0	59	44	15	0.001	0.003	9	67%	33%	39.7	19.3	59	50	9	2.039	11.01	
10: Private Ser. + Gov.	10	87%	13%	13.0	2.0	15	11	4	0.319	0.915	10	87%	13%	13.0	2.0	15	13	2	0.01	0.052	
Total				171	60	231	200	31	2.319	6.648	Total			195	36	231	195	36	3.611	19.5	
							(r-1)	9									(r-1) ²	9			
							Standard X ²	11.07									Standard X ²	11.07			
Free Dial Services						Expection				Facsimile Services						Expection					
Business Category			No. of Companies			No. of Co.								No. of Companies		No. of Co.					
	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y	No	Yes	No	Yes	No	No	Yes	X ² .N	X ² .Y			
	1: Agr. + Min.	1	86%	14%	7.7	3.9	9	7	2	0.025	2.715	1	63%	38%	5.6	3.4	9	7	2	0.128	0.339
2: Manufacturing	2	80%	20%	49.4	12.6	62	50	12	0.012	0.052	2	81%	19%	50.5	11.5	62	45	17	0.653	1.734	
3: Utilities	3	67%	33%	2.0	1.0	3	2	1	0.075	0.321	3	100%	0%	3.0	0.0	3	2	1	0.309	0.82	
4: Costruction	4	83%	17%	13.3	2.7	16	13	3	0.011	0.046	4	83%	17%	13.3	2.7	16	12	4	0.25	0.663	
5: Wholesale	5	88%	13%	25.4	3.6	29	23	6	0.153	0.651	5	75%	25%	21.8	7.3	29	21	8	0.022	0.058	
6: Retail	6	64%	36%	8.3	4.7	13	11	2	0.484	2.059	6	73%	27%	9.5	3.5	13	9	4	4E-06	9E-06	
7: Rest. + Hotel	7	100%	0%	9.0	0.0	9	7	2	0.403	1.713	7	71%	29%	6.4	2.6	9	7	2	0.002	0.005	
8: Transport	8	79%	21%	12.6	3.4	16	13	3	0.011	0.047	8	57%	43%	9.1	6.9	16	12	4	0.533	1.416	
9: Finan. + Real Est.	9	86%	15%	50.4	8.6	59	48	11	0.15	0.638	9	66%	35%	38.6	20.4	59	43	16	0.416	1.105	
10: Private Ser. + Gov.	10	73%	27%	11.0	4.0	15	12	3	0.109	0.463	10	67%	33%	10.0	5.0	15	11	4	0.073	0.195	
Total				189	44	233.6	189	44	1.433	8.704	Total			168	63	231	168	63	2.384	6.335	
							(r-1)	9									(r-1) ²	9			
							Standard X ²	11.07									Standard X ²	11.07			

8-21 Result of X^2 Analysis(2/5)

Business Category		Virtual Network Service					Expectation				Credit Call					Expectation				
		No. of Companies					No. of Co.				No. of Companies					No. of Co.				
	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y		
1: Agr. + Min.	1	63%	38%	5.6	3.4	9	7	2	0.216	0.683	1	50%	50%	4.5	4.5	9	6	3	0.278	0.496
2: Manufacturing	2	78%	22%	48.4	13.6	62	47	15	0.033	0.104	2	70%	31%	43.1	18.9	62	40	22	0.285	0.508
3: Utilities	3	67%	33%	2.0	1.0	3	2	1	0.034	0.108	3	100%	0%	3.0	0.0	3	2	1	0.604	1.078
4: Costruction	4	75%	25%	12.0	4.0	16	12	4	0.002	0.007	4	50%	50%	8.0	8.0	16	10	6	0.495	0.882
5: Wholesale	5	83%	17%	24.2	4.8	29	22	7	0.204	0.645	5	54%	46%	15.7	13.3	29	19	10	0.441	0.787
6: Retail	6	73%	27%	9.5	3.5	13	10	3	0.019	0.059	6	55%	46%	7.1	5.9	13	8	5	0.186	0.332
7: Rest. + Hotel	7	72%	28%	6.5	2.6	9	7	2	0.02	0.072	7	71%	29%	6.4	2.6	9	6	3	0.075	0.134
8: Transport	8	93%	7%	14.9	1.1	16	12	4	0.602	1.905	8	57%	49%	9.1	7.9	16	10	6	0.122	0.285
9: Finan. + Real Est.	9	66%	35%	38.6	20.4	59	45	14	0.855	2.707	9	67%	33%	39.7	19.3	59	38	21	0.096	0.171
10: Private Ser. + Gov.	10	93%	7%	14.0	1.0	15	11	4	0.591	1.871	10	80%	20%	12.0	3.0	15	10	5	0.594	1.059
Total				176	55	231	176	55	2.575	8.16	Total			149	83	232	148	83	3.176	6.232
								(r-1)	9									(r-1)*	9	
								Standard X^2	11.07									Standard X^2	11.07	
Business Category		Simple Sale					Expectation				Detail Charge List Service					Expectation				
		No. of Companies					No. of Co.				No. of Companies					No. of Co.				
	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y		
1: Agr. + Min.	1	13%	88%	1.1	7.9	9	5	4	2.661	2.83	1	38%	63%	3.4	5.6	9	6	3	1.359	3.173
2: Manufacturing	2	61%	39%	37.8	24.2	62	32	30	1.078	1.146	2	71%	29%	44.1	17.9	62	43	19	0.012	0.029
3: Utilities	3	67%	33%	2.0	1.0	3	2	1	0.134	0.142	3	100%	0%	3.0	0.0	3	2	1	0.385	0.9
4: Costruction	4	75%	25%	12.0	4.0	16	8	8	1.71	1.818	4	67%	33%	10.7	5.3	16	11	5	0.025	0.059
5: Wholesale	5	54%	46%	15.7	13.3	29	15	14	0.04	0.043	5	71%	29%	20.5	8.5	29	20	9	0.003	0.006
6: Retail	6	55%	46%	7.1	5.9	13	7	6	0.022	0.024	6	73%	27%	9.5	3.5	13	9	4	0.013	0.031
7: Rest. + Hotel	7	57%	43%	5.1	3.9	9	5	4	0.054	0.058	7	57%	43%	5.1	3.9	9	6	3	0.214	0.501
8: Transport	8	43%	57%	6.9	9.1	16	8	8	0.231	0.246	8	86%	14%	13.7	2.3	16	11	5	0.562	1.313
9: Finan. + Real Est.	9	33%	67%	19.3	39.7	59	30	29	4.061	4.319	9	67%	33%	39.7	19.3	59	41	18	0.062	0.145
10: Private Ser. + Gov.	10	80%	20%	12.0	3.0	15	8	7	2.358	2.508	10	80%	20%	12.0	3.0	15	11	4	0.214	0.499
Total				119	112	231	119	112	12.335	13.13	Total			162	69	231	162	69	2.85	6.655
								(r-1)	9									(r-1)*	9	
								Standard X^2	11.07									Standard X^2	11.07	
Business Category		Consulting Service					Expectation				Vice Maille Service					Expectation				
		No. of Companies					No. of Co.				No. of Companies					No. of Co.				
	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y		
1: Agr. + Min.	1	50%	50%	4.5	4.5	9	6	3	0.263	0.459	1	63%	38%	5.6	3.4	9	7	2	0.409	1.837
2: Manufacturing	2	74%	24%	45.6	14.7	62	39	23	0.969	2.738	2	93%	7%	57.8	4.2	62	51	11	0.988	4.437
3: Utilities	3	100%	0%	3.0	0.0	3	2	1	0.624	1.091	3	100%	0%	3.0	0.0	3	2	1	0.122	0.547
4: Costruction	4	42%	58%	6.7	9.3	16	10	6	1.209	2.115	4	92%	8%	14.7	1.3	16	13	3	0.192	0.912
5: Wholesale	5	71%	29%	20.5	8.5	29	18	11	0.235	0.41	5	92%	8%	26.6	2.4	29	24	5	0.349	1.566
6: Retail	6	55%	46%	7.1	5.9	13	8	5	0.17	0.298	6	91%	9%	11.8	1.2	13	11	2	0.132	0.593
7: Rest. + Hotel	7	43%	57%	3.9	5.1	9	6	3	0.608	1.063	7	57%	43%	5.1	3.9	9	7	2	0.67	3.009
8: Transport	8	64%	36%	10.3	5.7	16	10	6	0.001	0.002	8	71%	29%	11.4	4.6	16	13	3	0.211	0.947
9: Finan. + Real Est.	9	58%	42%	34.3	24.7	59	38	21	0.273	0.478	9	71%	29%	41.8	17.2	59	48	11	0.854	3.835
10: Private Ser. + Gov.	10	67%	33%	10.0	5.0	15	10	5	0.022	0.039	10	73%	27%	11.0	4.0	15	12	3	0.132	0.592
Total				146	83	229.3	147	84	4.374	8.693	Total			189	42	231	189	42	4.06	18.27
								(r-1)	9									(r-1)*	9	
								Standard X^2	11.07									Standard X^2	11.07	
Business Category		One Stop Shopping					Expectation				High Speed Leased Circuit Service					Expectation				
		No. of Companies					No. of Co.				No. of Companies					No. of Co.				
	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y	No	Yes	No	Yes	No	No	Yes	X^2.N	X^2.Y		
1: Agr. + Min.	1	75%	25%	6.8	2.3	9	7	2	0.061	0.288	1	75%	25%	6.8	2.3	9	8	1	0.109	0.624
2: Manufacturing	2	78%	22%	48.4	13.6	62	51	11	0.152	0.714	2	90%	10%	55.7	6.3	62	53	9	0.157	0.903
3: Utilities	3	100%	0%	3.0	0.0	3	2	1	0.111	0.525	3	33%	67%	1.0	2.0	3	3	0	0.947	5.431
4: Costruction	4	75%	25%	12.0	4.0	16	13	3	0.109	0.513	4	100%	0%	16.0	0.0	16	14	2	0.414	2.376
5: Wholesale	5	83%	17%	24.2	4.8	29	24	5	0.002	0.011	5	79%	21%	23.0	6.0	29	25	4	0.121	0.691
6: Retail	6	73%	27%	9.5	3.5	13	11	2	0.151	0.712	6	91%	9%	11.8	1.2	13	11	2	0.05	0.289
7: Rest. + Hotel	7	71%	29%	6.4	2.6	9	7	2	0.134	0.632	7	71%	29%	6.4	2.6	9	8	1	0.2	1.146
8: Transport	8	89%	11%	14.3	1.7	16	13	3	0.085	0.399	8	93%	7%	14.9	1.1	16	14	2	0.113	0.647
9: Finan. + Real Est.	9	87%	13%	51.2	7.8	59	49	10	0.127	0.597	9	80%	20%	47.2	11.8	59	50	9	0.184	1.053
10: Private Ser. + Gov.	10	100%	0%	15.0	0.0	15	12	3	0.557	2.626	10	93%	7%	14.0	1.0	15	13	2	0.117	0.671
Total				191	40	231	191	40	1.49	7.018	Total			197	34	231	197	34	2.412	13.83
								(r-1)	9									(r-1)*	9	
								Standard X^2	11.07									Standard X^2	11.07	

8-21 Result of X² Analysis(3/5)

Business Category	Telephone Conference						Expectation				Television Conference						Expectation			
	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y
	No	Yes	No	Yes	No	Yes	No	Yes			No	Yes	No	Yes	No	Yes	No	Yes		
1: Agr. + Min.	1	75%	25%	6.8	2.3	9	7	2	0.019	0.071	1	63%	38%	5.6	3.4	9	8	1	0.542	3.109
2: Manufacturing	2	90%	10%	55.7	6.3	62	49	13	0.906	3.419	2	88%	12%	54.6	7.4	62	53	9	0.063	0.363
3: Utilities	3	67%	33%	2.0	1.0	3	2	1	0.058	0.219	3	100%	0%	3.0	0.0	3	3	0	0.078	0.446
4: Costruction	4	75%	25%	12.0	4.0	16	13	3	0.033	0.125	4	83%	17%	13.3	2.7	16	14	2	0.006	0.037
5: Wholesale	5	75%	25%	21.8	7.3	29	23	6	0.06	0.227	5	83%	17%	24.2	4.8	29	25	4	0.012	0.067
6: Retail	6	73%	27%	9.5	3.5	13	10	3	0.066	0.25	6	73%	27%	9.5	3.5	13	11	2	0.237	1.357
7: Rest. + Hotel	7	71%	29%	6.4	2.6	9	7	2	0.067	0.252	7	71%	29%	6.4	2.6	9	8	1	0.2	1.146
8: Transport	8	71%	29%	11.4	4.6	16	13	3	0.119	0.447	8	86%	14%	13.7	2.3	16	14	2	6B-04	0.003
9: Finan. + Real Est.	9	78%	22%	46.1	12.9	59	47	12	0.005	0.02	9	80%	20%	47.2	11.8	59	50	9	0.184	1.053
10: Private Ser. + Gov.	10	73%	27%	11.0	4.0	15	12	3	0.063	0.237	10	80%	20%	12.0	3.0	15	13	2	0.047	0.268
Total				183	48	231	183	48	1.396	5.267	Total			190	41	231	197	34	1.369	7.848
								(r-1)	9									(r-1)	9	
								Standard X ²	11.07									Standard X ²	11.07	
Business Category	Information Providing Service						Expectation				Business Agency						Expectation			
	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y
	No	Yes	No	Yes	No	Yes	No	Yes			No	Yes	No	Yes	No	Yes	No	Yes		
1: Agr. + Min.	1	50%	50%	4.5	4.5	9	6	3	0.529	1.252	1	0%	100%	0.0	9.0	9	8	1	7.994	63.51
2: Manufacturing	2	73%	27%	45.2	16.8	62	44	18	0.059	0.139	2	90%	10%	55.7	6.3	62	39	23	6.675	11.68
3: Utilities	3	33%	67%	1.0	2.0	3	2	1	0.585	1.385	3	100%	0%	3.0	0.0	3	2	1	0.624	1.091
4: Costruction	4	50%	50%	8.0	8.0	16	11	5	0.94	2.226	4	100%	0%	16.0	0.0	16	10	6	3.327	5.82
5: Wholesale	5	88%	13%	25.4	3.6	29	20	9	1.217	2.883	5	94%	6%	27.3	1.7	29	18	11	4.232	7.404
6: Retail	6	67%	33%	8.7	4.7	13	9	4	0.026	0.198	6	91%	9%	11.8	1.2	13	8	5	1.52	2.658
7: Rest. + Hotel	7	29%	71%	2.6	6.4	9	6	3	2.228	5.279	7	100%	0%	9.0	0.0	9	6	3	1.871	3.274
8: Transport	8	86%	14%	13.7	2.3	16	11	5	0.538	1.275	8	100%	0%	16.0	0.0	16	10	6	3.327	5.82
9: Finan. + Real Est.	9	67%	33%	39.7	19.3	59	41	18	0.077	0.182	9	88%	11%	52.0	6.5	59	38	21	5.554	10.36
10: Private Ser. + Gov.	10	93%	7%	14.0	1.0	15	11	4	1.126	2.669	10	93%	7%	14.0	1.0	15	10	5	2.076	3.631
Total				163	69	231.4	162	69	7.323	17.49	Total			205	26	230.5	149	82	37.2	115.2
								(r-1)	9									(r-1)	9	
								Standard X ²	11.07									Standard X ²	11.07	
Business Category	ISDN D-1						Expectation				ISDN D-2						Expectation			
	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y
	No	Yes	No	Yes	No	Yes	No	Yes			No	Yes	No	Yes	No	Yes	No	Yes		
1: Agr. + Min.	1	0%	100%	0.0	9.0	9	4	5	4.067	3.352	1	25%	75%	2.3	6.8	9	5	4	1.422	1.689
2: Manufacturing	2	42%	58%	25.9	36.0	62	28	34	0.157	0.115	2	56%	44%	35.0	27.0	62	34	28	0.051	0.061
3: Utilities	3	0%	100%	0.0	3.0	3	1	2	1.356	1.117	3	0%	100%	0.0	3.0	3	2	1	1.629	1.934
4: Costruction	4	46%	54%	7.4	8.6	16	7	9	0.004	0.003	4	42%	58%	6.7	9.3	16	9	7	0.467	0.554
5: Wholesale	5	52%	48%	15.2	13.8	29	13	16	0.334	0.275	5	62%	38%	18.0	11.0	29	16	13	0.31	0.368
6: Retail	6	50%	50%	6.5	6.5	13	6	7	0.067	0.055	6	50%	50%	6.5	6.5	13	7	6	0.044	0.052
7: Rest. + Hotel	7	50%	50%	4.5	4.5	9	4	5	0.046	0.038	7	100%	0%	9.0	0.0	9	5	4	3.464	4.114
8: Transport	8	41%	42%	6.6	6.7	16	7	9	0.062	0.494	8	42%	58%	6.7	9.3	16	9	7	0.467	0.554
9: Finan. + Real Est.	9	54%	45%	31.9	26.8	59	27	32	1.014	0.954	9	58%	42%	34.3	24.7	59	32	27	0.158	0.188
10: Private Ser. + Gov.	10	33%	67%	5.0	10.0	15	7	8	0.469	0.387	10	47%	53%	7.1	7.9	15	8	7	0.131	0.156
Total				103	125	227.8	104	127	7.576	6.791	Total			125	106	231	125	106	8.143	9.67
								(r-1)	9									(r-1)	9	
								Standard X ²	11.07									Standard X ²	11.07	
Business Category	ISDN D-3						Expectation				ISDN D-4						Expectation			
	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y	No		Yes		No. of Companies		No. of Co.		X ² .N	X ² .Y
	No	Yes	No	Yes	No	Yes	No	Yes			No	Yes	No	Yes	No	Yes	No	Yes		
1: Agr. + Min.	1	0%	100%	0.0	9.0	9	4	5	4.315	3.975	1	40%	60%	3.6	5.4	9	4	5	5E-32	0
2: Manufacturing	2	50%	50%	31.0	31.0	62	30	32	0.054	0.05	2	54%	23%	33.2	14.4	62	25	37	2.867	13.99
3: Utilities	3	0%	100%	0.0	3.0	3	1	2	1.438	1.325	3	50%	0%	1.5	0.0	3	1	2	0.075	1.8
4: Costruction	4	46%	54%	7.4	8.6	16	8	8	0.01	0.009	4	50%	33%	8.0	5.3	16	6	10	0.4	1.887
5: Wholesale	5	50%	50%	14.5	14.5	29	14	15	0.025	0.023	5	57%	33%	16.6	9.7	29	12	17	2.12	3.446
6: Retail	6	46%	55%	5.9	7.1	13	6	7	0.016	0.015	6	50%	33%	6.5	4.3	13	5	8	0.325	1.545
7: Rest. + Hotel	7	100%	0%	9.0	0.0	9	4	5	5.086	4.685	7	75%	0%	6.8	0.0	9	4	5	2.756	5.4
8: Transport	8	33%	67%	5.3	10.7	16	8	8	0.716	0.659	8	36%	18%	5.8	2.9	16	6	10	0.052	4.682
9: Finan. + Real Est.	9	48%	52%	28.1	30.9	59	28	31	8E-04	7E-04	9	45%	43%	26.6	25.1	59	24	35	0.369	3.011
10: Private Ser. + Gov.	10	63%	37%	9.5	5.5	15	7	8	0.728	0.67	10	56%	28%	8.3	4.2	15	6	9	0.901	2.592
Total				111	120	231	111	120	12.39	11.41	Total			117	71	188.1	92	139	9.865	38.36
								(r-1)	9									(r-1)	9	
								Standard X ²	11.07									Standard X ²	11.07	

8-21 Result of X^2 Analysis(4/5)

ISDN D-5 (Monitor Camera)													Expectation				ISDN D-5 (Guide phone)													Expectation			
Business Category	No		Yes		No. of Companies			No		Yes		X^2.N		X^2.Y		No	Yes		No. of Companies			No		Yes		X^2.N		X^2.Y					
	1	2	30%	50%	4.5	4.5	9	7	2	0.684	1.915	1	50%	50%	4.5		4.5	9	7	2	0.826	2.688											
1: Agr. + Min.	2	79%	21%	48.9	13.1	62	46	16	0.23	0.644	2	81%	11%	50.0	6.9	62	47	15	0.135	3.994													
2: Manufacturing	3	100%	0%	3.0	0.0	3	2	1	0.282	0.79	3	100%	0%	3.0	0.0	3	2	1	0.217	0.705													
3: Utilities	4	75%	25%	12.0	4.0	16	12	4	0.004	0.011	4	67%	33%	10.7	5.3	16	12	4	0.201	0.653													
4: Construction	5	36%	14%	10.4	4.1	29	21	8	5.675	1.594	5	81%	20%	23.5	5.7	29	22	7	0.074	0.179													
5: Wholesale	6	86%	33%	11.1	4.3	13	10	3	0.255	0.24	6	58%	42%	7.6	5.4	13	10	3	0.563	1.831													
6: Retail	7	67%	0%	6.0	0.0	9	7	2	0.059	2.37	7	100%	0%	9.0	0.0	9	7	2	0.65	2.116													
7: Rest. + Hotel	8	100%	36%	16.0	5.8	16	12	4	1.506	0.604	8	64%	26%	10.2	4.2	16	12	4	0.348	0.057													
8: Transport	9	67%	33%	39.4	19.2	59	43	16	0.389	0.853	9	73%	28%	42.8	16.2	59	45	14	0.123	0.4													
9: Finan. + Real Est.	10	68%	18%	10.1	2.6	15	11	4	0.078	0.434	10	71%	29%	10.6	4.4	15	11	4	0.068	0.222													
10: Private Ser. + Gov.	Total	82%		161	58	219.1	170	61	9.163	9.455	Total	71%	29%	10.6	4.4	15	11	4	0.068	0.222													
								(r-1)	9									(r-1)*	9														
								Standard X^2	11.07									Standard X^2	11.07														
ISDN D-5 (TV Conference)													Expectation				ISDN D-5 (G4 Fax)													Expectation			
Business Category	No		Yes		No. of Companies			No		Yes		X^2.N		X^2.Y		No	Yes		No. of Companies			No		Yes		X^2.N		X^2.Y					
	1	2	50%	50%	4.5	4.5	9	6	3	0.554	1.348	1	0%	100%	0.0		9.0	9	6	3	5.804	10.54											
1: Agr. + Min.	2	77%	23%	47.7	14.3	62	44	18	0.316	0.77	2	67%	33%	41.7	20.3	62	40	22	0.076	0.138													
2: Manufacturing	3	100%	0%	3.0	0.0	3	2	1	0.359	0.873	3	100%	0%	3.0	0.0	3	2	1	0.587	1.065													
3: Utilities	4	67%	33%	10.7	5.3	16	11	5	0.04	0.096	4	50%	50%	8.0	8.0	16	10	6	0.521	0.946													
4: Construction	5	76%	24%	22.1	6.9	29	21	8	0.116	0.281	5	65%	35%	18.9	10.2	29	19	10	0.001	0.002													
5: Wholesale	6	58%	42%	7.6	5.4	13	9	4	0.29	0.707	6	58%	42%	7.6	5.4	13	8	5	0.077	0.14													
6: Retail	7	75%	25%	6.8	2.3	9	6	3	0.021	0.052	7	100%	0%	9.0	0.0	9	6	3	1.76	3.196													
7: Rest. + Hotel	8	45%	55%	7.2	8.7	16	11	5	1.512	3.542	8	46%	55%	7.3	8.7	16	10	6	0.894	1.624													
8: Transport	9	73%	26%	42.8	15.0	59	42	17	0.022	0.265	9	73%	28%	42.8	16.2	59	38	21	0.587	1.067													
9: Finan. + Real Est.	10	71%	29%	10.6	4.4	15	11	4	2E-04	2E-04	10	59%	21%	8.8	3.2	15	10	5	0.075	0.865													
10: Private Ser. + Gov.	Total			163	67	229.7	164	67	3.23	7.936	Total			147	81	228	149	82	10.38	19.58													
								(r-1)	9									(r-1)*	9														
								Standard X^2	11.07									Standard X^2	11.07														
ISDN D-5 (Computer)													Expectation				ISDN D-5 (DPBX)													Expectation			
Business Category	No		Yes		No. of Companies			No		Yes		X^2.N		X^2.Y		No	Yes		No. of Companies			No		Yes		X^2.N		X^2.Y					
	1	2	0%	100%	0.0	9.0	9	4	5	4.139	3.525	1	0%	100%	0.0		9.0	9	5	4	5.359	7.886											
1: Agr. + Min.	2	39%	62%	23.9	38.1	62	29	33	0.756	0.644	2	62%	39%	38.1	23.9	62	37	25	0.04	0.059													
2: Manufacturing	3	0%	100% <td>0.0</td> <td>3.0</td> <td>3</td> <td>1</td> <td>2</td> <td>1.38</td> <td>1.175</td> <td>3</td> <td>100%</td> <td>0%</td> <td>3.0</td> <td>0.0</td> <td>3</td> <td>2</td> <td>1</td> <td>0.825</td> <td>1.214</td>	0.0	3.0	3	1	2	1.38	1.175	3	100%	0%	3.0	0.0	3	2	1	0.825	1.214													
3: Utilities	4	50%	50%	8.0	8.0	16	7	9	0.056	0.048	4	55%	46%	8.7	7.3	16	10	6	0.068	0.1													
4: Construction	5	52%	48%	15.2	13.8	29	13	16	0.259	0.221	5	62%	30%	18.0	8.7	29	17	12	0.027	0.769													
5: Wholesale	6	58%	42%	7.6	5.4	13	6	7	0.428	0.365	6	50%	50%	6.5	6.5	13	8	5	0.199	0.292													
6: Retail	7	75%	25%	6.8	2.3	9	4	5	1.647	1.402	7	75%	25%	6.8	2.3	9	5	4	0.361	0.532													
7: Rest. + Hotel	8	33%	67%	5.3	10.7	16	7	9	0.56	0.477	8	50%	50%	8.0	8.0	16	10	6	0.245	0.36													
8: Transport	9	55%	45%	32.5	26.6	59	27	32	1.041	0.887	9	65%	35%	38.4	20.7	59	35	24	0.295	0.435													
9: Finan. + Real Est.	10	47%	53%	7.1	7.9	15	7	8	0.004	0.003	10	59%	42%	8.8	6.3	15	9	6	0.001	0.008													
10: Private Ser. + Gov.	Total			106	125	231	106	125	10.27	8.746	Total			136	93	228.8	138	93	7.42	11.65													
								(r-1)	9									(r-1)*	9														
								Standard X^2	11.07									Standard X^2	11.07														
ISDN D-6													Expectation				ISDN D-7													Expectation			
Business Category	No		Yes		No. of Companies			No		Yes		X^2.N		X^2.Y		No	Yes		No. of Companies			No		Yes		X^2.N		X^2.Y					
	1	2	25%	75%	2.3	6.8	9	7	2	2.951	8.568	1	60%	40%	5.4		3.6	9	7	2	0.445	1.767											
1: Agr. + Min.	2	70%	31%	43.3	19.3	62	46	16	0.175	0.755	2	79%	21%	48.9	13.1	62	50	12	0.009	0.036													
2: Manufacturing	3	100%	0%	3.0	0.0	3	2	1	0.265	0.768	3	100%	0%	3.0	0.0	3	2	1	0.152	0.604													
3: Utilities	4	75%	25%	12.0	4.0	16	12	4	8E-04	0.002	4	75%	25%	12.0	4.0	16	13	3	0.048	0.189													
4: Construction	5	86%	14%	24.9	4.1	29	22	7	0.499	1.45	5	91%	10%	26.2	2.8	29	23	6	0.41	1.626													
5: Wholesale	6	75%	25%	9.8	3.3	13	10	3	7E-04	0.002	6	58%	42%	7.6	5.4	13	10	3	0.758	3.007													
6: Retail	7	100%	0%	9.0	0.0	9	7	2	0.794	2.305	7	100%	0%	9.0	0.0	9	7	2	0.456	1.811													
7: Rest. + Hotel	8	64%	26%	10.2	4.2	16	12	4	0.25	0.004	8	73%	27%	11.6	4.4	16	13	3	0.103	0.409													
8: Transport	9	78%	22%	45.9	13.1	59	44	15	0.093	0.269	9	83%	17%	49.1	9.9	59	47	12	0.087	0.344													
9: Finan. + Real Est.	10	73%	27%	10.9	4.1	15	11	4	0.006	0.019	10	77%	22%	11.6	3.3	15	12	3	0.012	0.032													
10: Private Ser. + Gov.	Total			171	59	230	172	59	5.034	14.14	Total			184	46	230.9	185	46	2.48	9.825													
								(r-1)	9									(r-1)*	9														
								Standard X^2	11.07									Standard X^2	11.07														