

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

POSTS AND TELECOMMUNICATIONS CORPORATION LTD.  
THE REPUBLIC OF ZAMBIA

THE STUDY  
ON  
LONG TERM PLAN FOR  
DEVELOPMENT OF TELECOMMUNICATIONS NETWORK  
IN  
THE REPUBLIC OF ZAMBIA

SUPPORTING

AUGUST 1993

NIPPON TELECOMMUNICATIONS CONSULTING CO., LTD.  
TOKYO, JAPAN

SSS

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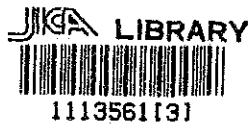
Nominal basis in the first planning year is applied for this analysis. This means estimated prices and costs as of January 1, 1993, are used and they are assumed constant during the whole project period.  
Exchange rate: US\$1 = Zambian Kwacha 360 (January 1, 1993)

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国際協力事業団

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## **SUPPORTING 1**

### **CASE STUDY OF NETWORK EXPANSION PLAN (CASE 1 & CASE 2)**



Table 1-1 Expansion Plan of External Plant for Case 1 (1/3)

CODE/EXCHANGE NAME No.	STATUS IN 1993			STATUS IN 2002			STATUS IN 2012									
	PAIRS ON MDF	FAULT EFFICIENCY PLAN	ACTION	SUPPLY VOLUME			SUPPLY VOLUME									
				Rural	Urban	Total	Rural	Urban	Total							
9101 LUSAKA MAIN	19371	822	18749	0	111	22238	22404	30	13800	33800	140	30507	30647	10	15700	47500
9102 CHELSTON	1808	0	1808	0	35	6888	6898	10	5600	8200	50	9879	9929	10	4780	12900
9103 CHINIKIA	1300	244	1956	0	15	2585	2600	10	1900	3600	21	4212	4233	0	1900	5500
9104 EMMASDALE	2500	0	2500	0	0	4406	4406	0	3000	6100	0	7169	7169	0	3300	9400
9105 AIRPORT INT.	558	35	515	0	3	522	525	10	200	300	4	851	855	0	400	1200
9106 MAKENI	527	50	477	0	11	1941	1952	10	1500	2600	16	3163	3179	0	1600	4200
9107 RIDGEWAY	4596	75	4521	0	0	6789	6789	0	5000	9000	0	11945	11945	0	4800	14400
9108 ROPA	2200	0	2200	0	29	5047	5076	10	4200	6900	42	8223	8265	10	3800	10700
9109 WOODLANDS	4048	120	3928	1500	64	11231	11295	20	9200	15300	93	18300	18393	10	8500	23800
LUSAKA METRO TOTAL	36892	1346	35746	4000	258	68877	61145	100	44000	84000	366	99349	99715	0	44700	123600
9201 CHILANGA	500	15	485	0	0	1078	1084	10	1000	1500	9	1756	1765	0	800	2300
9202 CHRIBUNDU	200	0	200	0	23	132	155	10	0	200	51	321	372	10	300	500
9203 CHISAMBA	300	0	300	0	25	181	206	10	0	300	42	339	372	10	200	500
9204 CHONGUVE	400	0	400	0	1	215	216	10	0	400	2	350	352	0	100	500
9205 KAPUE	3000	54	2946	0	25	4468	4493	10	3000	6300	37	7280	7317	0	3200	9500
9206 LVANGWA	160	0	160	0	1	228	221	10	200	400	2	358	360	0	100	500
9207 MUNDWA	310	0	310	0	42	306	348	20	100	500	71	958	929	0	300	800
9208 NAHALUNDU GORG	450	0	450	0	2	271	273	10	0	500	2	441	443	0	100	600
9209 NAMPUNDWE	200	0	200	0	6	102	108	10	0	200	19	149	168	0	200	400
9210 SIAYONGA	295	0	295	0	55	312	367	20	200	500	119	759	878	20	500	1000
LUSAKA TOTAL	5815	59	5743	0	136	7285	7471	130	4800	10300	354	12362	12656	40	5600	16400
9301 KITWE	23350	1100	22250	0	362	21118	21480	100	8500	30800	592	37414	38006	60	17900	48700
9302 CHAMBISHI	500	0	500	0	11	643	654	10	400	800	18	1137	1155	0	500	1500
9303 CHILILAPHEWE	1000	0	1000	0	44	2681	2725	20	2300	3600	74	4741	4815	0	2600	6200
9304 CHINGOLA	6200	120	6080	0	141	8565	8705	40	6000	12100	236	15147	15338	30	7600	19700
9305 ITIMPI	600	0	600	0	8	457	465	10	100	700	13	882	821	0	400	1100
9306 KALULUSHI	1800	0	1800	0	25	1560	1525	10	400	2200	41	2653	2694	10	1300	3500
9307 MFULIRA	3600	0	3600	0	111	6765	6876	30	5500	9300	136	11955	12131	20	6300	15600
9308 HINDOLO	4700	0	4700	0	0	2814	2814	0	0	4700	0	4982	4982	0	1800	6500
COPPERBELT TOTAL	41750	1220	40530	500	702	44543	45243	220	23200	64300	1160	78857	80017	120	38500	102800
9401 NDOLA MAIN	8643	0	8643	0	0	11274	11274	0	7300	16000	0	19959	19959	0	10000	26000
9402 IND. NORTH	1600	0	1600	0	29	1741	1770	10	900	2500	48	3079	3127	10	1600	4100
9403 IND. SOUTH	1700	0	1700	0	13	778	791	10	0	1700	21	1376	1397	0	100	1800
9404 KABUSHI	2000	0	2000	0	0	4517	4517	0	4300	6300	0	8150	8150	0	4400	10700
9405 KANSENSHI	2337	98	1932	0	0	3267	3267	0	2000	4600	0	5795	5796	0	3000	7600
9406 NORTH RISE	1300	8	1292	0	0	2263	2263	0	1800	3100	0	4014	4014	0	2200	5300
9407 PAMONZI	1000	23	977	0	0	2301	2301	0	1900	3200	0	4051	4051	0	2200	5400
9408 PASAITI	300	0	300	0	3	163	166	10	0	300	4	288	292	0	100	400
9409 LUANSHA	2293	25	2068	1300	71	4330	4481	20	2600	6000	119	7657	7776	20	4000	10000
NDOLA TOTAL	20666	154	20512	2200	116	30734	30850	50	20800	43700	192	54480	54672	30	27600	71300
SUB TOTAL	185123	2589	182534	6700	1212	143439	144711	490	93600	243700	2072	244938	247068	230	116400	323100

Remarks:  
R.C.T : Total proposed cable pairs to be terminated to MARS terminals in the each exchange.  
U.C.T : Total proposed cable pairs to be terminated to MDF in each exchange.  
T.PAIR: Total cable pairs to be terminated to MDF in the respective year.

Table 1-1 Expansion Plan of External Plant for Case 1 (2/3)

CODE/EXCHANGE NAME No.	STATUS IN 1993			ACTION PLAN	STATUS IN 2002			STATUS IN 2012								
	PAIRS ON MDF	FAULTY PAIRS	EFFICIENCY		SUPPLY VOLUME		EXPANSION P. ON MDF		SUPPLY VOLUME		EXPANSION P. ON MDF					
					Rural	Urban	Total	R.C.T	U.C.T	T.PAIR	Rural	Urban	Total	R.C.T	U.C.T	T.PAIR
0501	800	0	800	0	326	1708	2034	90	1500	2300	780	422	5002	120	3200	5500
0502	400	0	400	0	49	255	304	20	0	400	116	628	745	20	500	900
0503	135	0	135	0	15	156	181	10	100	300	44	348	392	10	200	500
0504	250	0	250	0	75	391	466	20	300	600	179	907	1146	30	700	1300
0505	350	0	350	0	70	306	436	20	200	600	107	504	1071	30	600	1200
0601	1935	0	1935	0	535	2086	3421	100	2100	4200	1285	7078	8356	210	5200	9400
0602	1800	180	1620	0	362	2040	2402	100	1300	3000	780	4902	5742	110	3500	6500
0603	200	1	199	0	21	118	139	10	0	200	45	286	331	10	200	400
0604	150	0	150	0	21	119	140	10	0	200	45	289	334	10	200	400
0605	470	2	468	0	88	438	586	30	200	700	181	1212	1403	20	900	1600
0606	300	0	300	0	70	420	502	20	300	600	183	1046	1199	30	800	1400
0607	1520	7	1513	0	232	1307	1539	70	400	2000	500	3179	3679	60	2200	4200
0608	740	3	737	0	202	1141	1343	60	900	1700	437	2716	3213	60	2800	3700
0609	200	0	200	0	20	149	175	10	0	200	57	303	420	10	300	500
0610	200	1	199	0	29	285	314	10	200	400	91	506	577	20	300	700
0611	4300	20	4280	0	712	4014	4726	190	1600	5900	1536	9705	11301	210	8000	12700
0701	50	0	50	0	12	70	82	10	0	100	27	170	197	0	200	300
0702	9330	232	9098	0	1781	10167	11948	520	4900	15000	3872	24544	28416	540	17400	32400
0703	1800	255	1545	0	250	1984	2234	70	1200	2800	530	4520	5050	70	3100	5900
0704	200	0	200	0	37	293	330	10	200	400	73	675	748	20	500	900
0705	250	55	195	0	49	386	435	20	300	600	184	893	993	10	700	1200
0706	300	7	293	0	23	179	202	10	0	300	48	412	460	10	300	600
0707	600	83	517	0	97	764	861	30	500	1100	206	1759	1965	30	1200	2300
0708	600	24	576	0	121	948	1069	40	700	1300	256	2182	2438	30	1000	2300
0709	200	7	193	0	28	222	250	10	100	300	60	511	571	10	400	700
0710	200	11	189	0	29	231	260	10	100	300	62	532	594	10	400	700
0711	200	26	174	0	10	165	175	10	100	300	31	387	438	0	100	400
0712	200	4	196	0	44	348	392	20	300	600	94	801	895	10	600	1100
0713	482	418	82	0	25	187	222	10	300	600	53	493	566	10	300	600
0714	4550	482	4068	0	713	5097	6410	240	3800	8100	1523	10041	14564	210	9200	17300
SUB TOTAL	16415	664	15751	0	3029	18750	21779	920	10800	27300	6681	44655	51326	960	31800	59100

Remarks:  
R.C.T : Total proposed cable pairs to be terminated to MARS terminals in the each exchange.  
U.C.T : Total proposed cable pairs to be terminated to MDF in each exchange.  
T.PAIR: Total cable pairs to be terminated to MDF in the respective year.

Table 1-1 Expansion Plan of External Plant for Case 1 (3/3)

CODE/EXCHANGE NAME No.	STATUS IN 1993				STATUS IN 2002				STATUS IN 2012							
	PAIRS ON MDF	FAULT/REPAIRS	FUNCTION PLAN	EXPANSION P. ON MDF	SUPPLY VOLUME			EXPANSION P. ON MDF	SUPPLY VOLUME			EXPANSION P. ON MDF				
					Rural	Urban	Total		Rural	Urban	Total					
0881	7300	1	7299	0	578	4152	4778	160	0	7300	979	7848	8827	108	2708	10000
0882	200	0	200	0	8	92	100	10	0	200	15	198	173	0	100	300
0883	780	5	695	0	44	317	361	20	0	700	74	579	653	0	100	300
0884	375	5	370	0	49	355	404	20	100	500	83	847	730	10	400	900
0885	380	0	380	0	6	47	53	10	0	300	11	35	97	0	0	300
0886	400	3	397	0	46	331	377	20	100	500	77	604	681	0	300	800
0887	--	0	0	0	3	19	22	10	0	100	4	35	35	0	0	100
0888	--	0	0	0	2	17	19	10	0	100	4	30	34	0	0	100
CENTRAL TOTAL	9275	14	9261	0	736	5370	6106	268	200	9700	1247	9787	11034	110	3508	13300
0901	1800	0	1800	0	541	3088	3629	150	2500	4300	1411	8729	10400	220	7100	11400
0902	150	0	150	0	52	295	347	20	800	500	135	835	970	20	600	1100
0903	500	0	500	0	34	195	229	10	0	500	89	552	642	20	300	800
0904	300	0	300	0	68	367	435	20	200	500	177	1033	1270	30	1000	1500
0905	1100	0	1100	0	67	382	449	20	0	1100	175	1000	1255	30	400	1500
0906	200	0	200	0	15	117	132	10	0	200	32	209	321	0	200	400
0907	200	0	200	0	31	176	207	10	100	300	81	499	580	20	400	700
0908	350	0	350	0	26	189	215	30	300	700	224	1333	1657	30	1100	1800
0909	150	0	150	0	22	123	145	10	0	200	56	349	405	10	300	500
EASTERN TOTAL	4750	0	4750	0	916	5252	6168	280	3400	8300	2300	14790	17170	320	14400	19700
1001	1500	0	1500	0	115	604	719	30	0	1500	133	737	932	10	0	1500
1002	200	0	200	0	20	106	126	10	0	200	23	139	162	0	0	200
1003	200	0	200	0	25	132	157	10	0	200	29	174	203	0	100	300
1004	200	0	200	0	13	69	82	10	0	200	15	92	107	0	0	200
1005	300	15	285	0	45	128	173	20	0	300	52	193	215	0	0	300
1006	1	0	1	0	4	21	25	10	0	100	5	28	33	0	0	100
1007	--	0	0	0	0	40	40	10	100	100	9	53	62	0	0	100
WESTERN TOTAL	2401	101	2300	0	1230	1100	1330	100	100	2600	266	1446	1712	10	100	2700
1101	1900	0	1900	0	97	414	511	30	200	2100	189	2584	2743	20	1300	3400
1102	200	0	200	0	20	284	304	10	200	400	32	519	551	0	300	700
1103	200	0	200	0	22	320	342	10	200	400	36	584	620	0	400	800
1104	400	0	400	0	7	108	115	10	0	400	12	197	209	0	0	400
1105	250	0	250	0	25	355	390	10	300	600	41	667	708	10	300	900
1106	300	0	300	0	23	327	359	10	200	500	37	598	635	0	300	800
NORTHWESTERN TOTAL	3250	0	3250	0	194	2318	2612	80	1100	4400	317	5149	5436	30	1400	6700
SUB TOTAL	19576	115	19561	0	2876	14540	16016	720	4800	25000	4210	31172	35382	520	16580	42400
ZAMBIA TOTAL	941214	3368	137846	6700	6377	476729	183106	2130	109200	956000	42963	320815	383778	4720	164700	421600

Remarks:  
R.C.T : Total proposed cable pairs to be terminated to MARS terminals in the each exchange.  
U.C.T : Total proposed cable pairs to be terminated to MDF in each exchange.  
T.PAIR: Total cable pairs to be terminated to MDF in the respective year.

Table 1-2 Expansion Plan of External Plant for Case 2 (1/3)

CODE/EXCHANGE NAME	STATUS IN 1993			ACTION			STATUS IN 2002			STATUS IN 2012						
	PAIRS ON MDF	FAULT EFFICI. PAIR/PAIRS	PAIRS	PLAN	RURAL	URBAN	TOTAL	R.C.T.	U.C.T.	T.PAIR	SUPPLY	URBAN	TOTAL	R.C.T.	U.C.T.	T.PAIR
0101 LUSAKA MAIN	19371	622	18749	0	111	16385	16496	30	5400	24100	140	27922	10	12100	36200	
0102 CHELSTON	1800	0	1800	800	35	4456	4491	10	3500	6100	50	7518	10	3100	9800	
0103 CHINIK	1306	244	3055	500	15	1906	1915	10	1000	2700	21	3205	0	1500	4700	
0104 EMMADALE	2500	0	2500	0	0	3238	3238	0	2100	4600	0	5450	5456	0	2500	7100
0105 AIRPORT INT.	550	35	515	0	3	384	387	10	100	500	4	648	552	0	300	900
0106 MAKENI	527	50	477	600	11	1427	1438	10	800	1900	16	2437	2423	0	1300	3200
0107 RIGEWAY	4596	75	4521	0	0	4998	4998	0	2600	7100	0	8305	8405	0	3900	11800
0108 ROMA	2200	0	2200	500	29	3710	3739	10	2500	5200	42	8258	8300	10	3000	8200
0109 WOODLANDS	4048	120	3928	1500	64	3255	8319	20	5900	11300	93	13926	14019	10	5900	18200
LUSAKA METRO TOTAL	36892	1146	35746	4900	268	44745	45013	100	23900	62000	366	75085	75971	40	35200	93000
0201 CHILANGA	500	15	485	0	0	792	792	10	500	1100	5	1336	1345	0	700	1800
0202 CHIRUNDU	200	0	200	0	23	97	120	10	0	200	51	244	295	10	200	400
0203 CHISAMBA	300	0	300	0	25	133	158	10	0	300	42	251	293	10	100	400
0204 CHONGWE	400	0	400	0	1	158	159	10	0	400	2	206	268	0	400	800
0205 KAFUE	3000	54	2946	0	25	3284	3309	10	1800	4700	37	5540	5577	0	2600	7300
0206 LUANGVA	160	0	160	0	1	162	162	10	100	300	2	272	274	0	100	400
0207 MURUPA	310	0	310	0	42	225	267	20	0	300	71	425	496	0	300	600
0208 NAHALUNDU GORG	450	0	450	0	2	199	201	10	0	500	2	336	338	0	500	1000
0209 NAMPUNWE	200	0	200	0	0	75	81	10	0	200	19	113	132	0	200	400
0210 SIYONGA	295	0	295	0	55	229	284	20	0	300	119	578	697	20	500	800
LUSAKA TOTAL	5815	69	5746	0	186	5354	5540	120	3500	8300	354	9362	9716	40	4500	12800
0301 KITWE	23350	1100	22250	0	362	15522	15884	100	3300	25600	592	28472	29064	0	13500	37100
0302 CHARBISHI	500	0	500	0	11	473	484	10	200	700	18	865	883	0	500	1300
0303 CHILABOMBE	1000	0	1000	300	44	1971	2015	20	1400	2700	74	3388	3682	0	2000	4700
0304 CHINGOLA	6200	120	6080	0	141	6295	6436	40	3000	9100	236	11527	11763	30	5900	15000
0305 ITIMPI	600	0	600	0	8	336	344	10	0	600	13	615	628	0	200	800
0306 KALULUSHI	1800	0	1800	0	25	1103	1128	10	0	1800	41	2315	2350	10	900	2700
0307 MFULIRA	3500	0	3500	200	111	4972	5083	30	3200	7000	186	9185	9291	20	4900	11900
0308 HINDOLO	4700	0	4700	0	0	2068	2068	0	0	4700	0	3799	3799	0	300	5000
COPPERBELT TOTAL	41750	1220	40530	500	782	32739	33441	220	9100	50200	1160	60310	61170	120	28200	78300
0401 NDOLA MAIN	8643	0	8643	0	0	8286	8286	0	3400	12000	0	15219	15219	0	7800	19800
0402 IND. NORTH	1600	0	1600	0	29	1200	1209	10	300	1900	48	2343	2391	10	1200	3100
0403 IND. SOUTH	1700	0	1700	0	13	572	585	10	0	1700	21	1947	1968	0	1700	3400
0404 KABUSHI	2000	0	2000	0	0	3393	3393	0	2700	4700	0	6233	6233	0	3500	8200
0405 KANSENSHI	2030	98	1932	600	0	2401	2401	0	900	3400	0	4411	4411	0	2400	5800
0406 NORTH RISE	1300	0	1300	0	0	1663	1663	0	1100	2400	0	3055	3055	0	1000	4000
0407 PARODZI	1000	23	977	300	0	1691	1691	0	1100	2400	0	3106	3106	0	1700	4100
0408 MASAITI	300	0	300	0	3	128	128	10	0	300	4	219	223	0	300	600
0409 LUANSHA	2093	25	2068	1300	71	3183	3254	20	1100	4300	119	5827	5946	20	3100	7600
NDOLA TOTAL	28666	154	28512	2200	116	22589	22705	50	10600	33300	192	41453	41651	30	21300	54600
SUB TOTAL	193123	2589	190534	6700	1272	193427	196699	490	46100	153400	2072	386435	389507	230	89200	244500

Remarks:  
R.C.T.: Total proposed cable pairs to be terminated to MBS terminals in the each exchange.  
U.C.T.: Total proposed cable pairs to be terminated to MDF in each exchange.  
T.PAIR: Total cable pairs to be terminated to MDF in the respective year.

Table 1-2 Expansion Plan of External Plant for Case 2 (2/3)

CODE/EXCHANGE NAME NO.	STATUS IN 1993				STATUS IN 2002				STATUS IN 2012								
	PAIRS ON MDF	FAULTS PER YEAR	ACTION PLAN	PAIRS	SUPPLY VOLUME		EXPANSION P. ON MDF		SUPPLY VOLUME		EXPANSION P. ON MDF						
					Rural	Urban	R.C.T	U.C.T	R.C.T	U.C.T	R.C.T	U.C.T	R.C.T	U.C.T			
8581	800	0	0	800	0	326	1255	1881	90	1800	1800	780	3213	3993	120	2400	4200
8582	400	0	0	400	0	49	187	236	20	0	400	116	479	595	20	300	700
8583	135	0	0	135	0	15	122	137	10	0	100	44	265	309	10	300	400
8584	250	0	0	250	0	75	287	362	20	200	500	179	736	815	30	500	1000
8585	350	0	0	350	0	70	289	359	20	100	500	167	688	855	30	400	900
8586	1935	0	0	1935	0	535	2121	2656	160	1300	3300	1286	5380	6666	210	3900	7200
8587	1800	198	0	1602	0	362	1439	1801	100	600	2200	780	3776	4556	110	2800	5000
8682	200	1	0	199	0	21	87	108	10	0	200	45	218	263	10	100	300
8683	150	0	0	150	0	21	87	108	10	0	200	45	220	265	10	100	300
8684	470	2	0	468	0	28	356	434	30	100	600	191	922	1113	20	600	1200
8685	300	0	0	300	0	76	313	389	20	200	500	163	788	951	30	600	1100
8686	1520	7	0	1513	0	232	924	1133	70	500	1500	500	2419	2919	50	1700	3200
8687	740	3	0	737	0	202	839	1041	60	500	1200	437	2113	2550	60	1600	2800
8688	200	0	0	200	0	26	110	136	10	0	200	57	276	333	10	200	400
8689	200	1	0	199	0	29	289	358	10	100	300	51	385	476	20	200	500
8690	4300	20	0	4280	0	712	2950	3662	190	200	4500	1536	7431	8967	210	5200	9700
8691	50	0	0	50	0	12	51	63	10	0	100	27	129	156	0	100	200
SOUTHERN TOTAL	9530	232	0	9538	0	1781	7473	9234	520	1700	11500	3872	18678	22550	540	13200	24700
8781	1800	255	0	1545	0	250	1444	1694	70	600	2100	530	3440	3970	70	2400	4500
8782	200	0	0	200	0	37	215	252	10	100	300	79	514	593	20	400	700
8783	250	65	0	185	0	49	284	333	20	200	400	104	677	781	10	500	900
8784	300	7	0	293	0	23	132	155	10	0	300	48	314	362	10	200	500
8785	600	33	0	567	0	97	552	659	30	200	800	206	1339	1545	30	1000	1800
8786	500	24	0	476	0	121	697	818	40	400	1000	250	1861	2117	30	1200	2200
8787	200	7	0	193	0	28	163	191	10	0	200	60	389	449	10	400	600
8788	200	11	0	189	0	29	170	193	10	100	300	62	405	467	10	300	600
8789	200	26	0	174	0	10	121	131	10	0	200	31	234	265	0	200	400
8790	200	4	0	196	0	44	250	300	20	200	400	94	610	704	10	400	800
8791	432	0	0	432	0	25	145	178	10	200	200	53	345	398	10	300	500
NORTHERN TOTAL	4550	432	0	4118	0	713	4187	4980	240	2000	6200	1523	9224	11447	210	7300	13500
SUB TOTAL	16415	664	0	15751	0	2494	11660	14214	760	5400	21800	6591	33982	40662	950	24400	45400

Remarks:

R.C.T : Total proposed cable pairs to be terminated to MARS terminals in the each exchange.

U.C.T : Total proposed cable pairs to be terminated to MDF in each exchange.

T.PAIR: Total cable pairs to be terminated to MDF in the respective year.

Table 1-2 Expansion Plan of External Plant for Case 2 (3/3)

CODE/EXCHANGE NAME	STATUS IN 1993		ACTION		STATUS IN 2002				STATUS IN 2012							
	PAIRS ON MDF	FAULT EFFICIENCY	PLAN	PAIRS	RURAL	URBAN	TOTAL	EXPANSION P. ON MDF	RURAL	URBAN	TOTAL	EXPANSION P. ON MDF	RURAL	URBAN	TOTAL	
0881 KAWWE	7300	1	7259	0	578	3881	3889	160	0	7300	579	5820	579	185	0	200
0882 CHRIBOMBO	200	0	200	0	0	68	76	10	0	200	15	120	135	0	0	200
0883 KAPIRIMBOSHI	700	5	695	0	44	233	277	20	0	700	74	441	515	0	0	700
0884 MUKUSHI	375	5	370	0	49	261	310	20	0	400	83	492	575	10	300	700
0885 MUPPETWE	300	0	300	0	6	35	41	10	0	300	11	65	76	0	0	300
0886 SESENE	400	3	397	0	46	242	289	20	0	400	77	460	537	0	200	500
0887 CHALATA	--	0	0	0	3	14	17	10	100	100	4	27	31	0	0	100
0888 KANONA	--	0	0	0	2	12	14	10	100	100	4	23	27	0	0	100
CENTRAL TOTAL	9275	14	9261	0	735	3947	4682	260	200	9500	1247	7448	8695	170	800	10300
0981 CHIPATA	1800	0	1800	0	541	2270	2811	150	1400	3200	1411	6042	8054	220	5500	8700
0982 CHADIZA	150	0	150	0	52	217	269	20	200	400	135	635	770	20	500	900
0983 CHAMA	500	0	500	0	34	143	177	10	0	500	89	421	510	20	100	600
0984 KATETE	300	0	300	0	68	284	352	20	100	400	177	832	1009	30	700	1100
0985 LUNDAZI	1100	0	1100	0	67	281	348	20	0	1100	175	822	997	30	0	1100
0986 MUFUPE	200	0	200	0	15	86	101	10	0	200	32	205	237	0	100	300
0987 NYIMBA	200	0	200	0	31	129	160	10	0	200	81	380	461	20	300	500
0988 PETAUPE	350	0	350	0	86	359	445	30	200	600	224	1052	1276	30	800	1400
0989 SINDA	150	0	150	0	22	98	120	10	0	200	56	266	322	10	200	400
EASTERN TOTAL	4750	0	4750	0	916	3860	4776	230	1900	6800	2380	11255	13635	300	8200	15000
1001 MONGU	1500	36	1464	0	115	444	559	30	0	1500	133	687	740	10	0	1500
1002 KALABO	200	0	200	0	20	78	98	10	0	200	23	186	129	0	0	200
1003 KAOHA	200	0	200	0	25	97	122	10	0	200	29	182	161	0	0	200
1004 LUKULU	200	0	200	0	13	51	64	10	0	200	15	70	85	0	0	200
1005 SERANGA	300	15	285	0	45	94	139	20	0	300	52	124	176	0	0	300
1006 LIMULUNGA	0	0	0	0	4	15	19	10	100	100	5	21	26	0	0	100
1007 SESHERE	--	--	--	0	8	29	37	10	100	100	0	40	49	0	0	100
WESTERN TOTAL	2400	101	2299	0	230	809	1039	180	200	2600	266	1182	1360	10	0	2600
1101 SOLWEZI	1900	0	1900	0	97	1039	1136	30	0	1900	159	1966	2125	20	700	2600
1102 KAROMPO	200	0	200	0	20	209	229	10	100	300	32	395	427	0	300	600
1103 KASEMBA	200	0	200	0	22	235	257	10	100	300	36	444	480	0	300	600
1104 MUFUMBWE	400	0	400	0	7	79	86	10	0	400	12	150	162	0	0	400
1105 MWILUNGA	250	0	250	0	25	268	293	10	100	400	41	508	549	10	300	700
1106 ZAMBEZI	300	0	300	0	23	240	263	10	100	400	37	455	492	0	200	600
NORTHWESTERN TOTAL	3250	0	3250	0	194	2074	2268	80	400	3700	317	3318	4235	30	1800	5500
SUB TOTAL	19675	115	19560	0	2076	10386	12462	720	2700	26000	4210	23721	27931	500	10800	33400
ZAMBIA TOTAL	141213	13368	137845	6700	6377	123696	136273	12130	53800	190000	122668	244150	257103	1720	1124400	1232400

Remarks:

R.C.T : Total proposed cable pairs to be terminated to HARS terminals in the each exchange.  
 U.C.T : Total proposed cable pairs to be terminated to MDF in each exchange.  
 T.PAIR: Total cable pairs to be terminated to MDF in the respective year.



Table 1-3 Urgent Program (No. 1 Increase of Subscribers)

CODE No.	EXCHANGE NAME	EXISTING STATUS					SITUATION OF SUBSCRIBER					ADDITIONAL WORK					TOTAL SUBSCRIBER	ACTION PLAN COST(US\$)
		SWITCHING CAPACITY		OUTSIDE PLANT		PAIRS ON Pairs		WORKING LINES	WAITING INSTALL.	MARKETING	TOTAL	SUBSCRIB. WITHIN S/W CAP.	ADDITIONAL DP	ADDITIONAL DIS. CABLE	ADDITIONAL MDF. PAIRS	TOTAL PAIRS ON MDF		
		Equipped	Capacity	Capacity	Capacity	Capacity	Capacity											
0101	Lusaka	25,000	18,749	15,170	9,944	112	2,932	13,028	2,772	397	35	18,749	6	888,869				
0102	Chelston	3,800	1,800	2,020	1,865	74	2,185	3,544	625	79	8	2,688	1,998	155,980				
0103	Chinika	1,500	1,050	1,000	805	22	694	1,521	448	57	6	1,655	1,253	111,185				
0104	Emasdale	4,000	2,500	2,850	1,395	43	1,865	2,503	397	50	0	2,500	1,792	98,881				
0105	Inter. Airport	512	385	385	354	28	374	5	5	0	0	1,282	359	1,848				
0106	Makeni	1,800	477	600	540	19	612	1,171	395	58	5	600	1,077	98,948				
0107	Ridgeway	5,000	5,000	6,200	2,448	142	1,175	3,765	1,167	146	15	5,500	3,615	239,725				
0108	Rosa	2,500	2,200	3,130	2,157	174	646	2,977	343	43	4	2,700	2,500	85,429				
0109	Woodlands	5,000	3,928	5,003	3,850	244	2,498	6,592	1,158	144	14	5,428	5,000	235,418				
SUB-TOTAL		47,512	35,823	36,978	22,838	890	11,727	35,375	7,383	516	92	40,825	30,161	1,812,338				
0301	Kitwe	17,000	22,250	15,921	6,943	1,068	7,531	15,542	5,582	598	78	22,250	12,525	1,385,388				
0302	Chambeshi	500	500	290	256	35	244	595	75	10	0	500	331	18,571				
0303	Chililabombwe	2,000	1,000	996	923	89	755	1,758	166	21	2	300	1,889	41,133				
0304	Chingola	3,000	6,000	5,772	2,713	146	3,925	6,784	287	36	4	6,000	3,000	71,231				
0305	Kalusha	3,000	1,800	1,185	887	114	348	1,349	214	27	3	1,800	1,181	53,228				
0307	Mafujira	3,000	3,780	3,780	2,490	214	1,677	4,081	810	102	10	3,800	3,000	281,034				
SUB-TOTAL		28,500	35,230	27,544	13,312	1,657	14,480	30,949	7,134	895	89	35,730	21,046	1,770,565				
0401	Ndola Main	6,000	8,643	9,819	5,411	204	2,397	8,812	589	74	0	8,643	5,000	146,184				
0402	Ndola Ind North	1,000	1,600	1,447	711	5	659	1,379	289	37	4	1,600	1,000	71,727				
0403	Ndola Ind South	1,000	1,700	855	292	23	291	616	291	37	4	1,700	583	72,223				
0404	Ndola Kabushi	1,000	2,000	3,345	895	3	2,413	3,251	135	17	0	2,000	1,000	33,586				
0405	Ndola Kansenshi	2,000	1,932	2,240	1,245	34	1,043	2,322	755	95	600	2,522	2,000	187,883				
0406	Ndola Northrise	1,000	1,292	1,258	769	30	806	1,095	231	29	0	1,292	1,000	57,332				
0407	Ndola Pamodzi	1,000	977	730	448	59	1,128	1,635	552	70	300	1,277	1,000	137,881				
0409	Luanshya	3,000	2,062	2,191	1,698	266	1,465	3,429	942	118	12	3,368	2,641	234,017				
SUB-TOTAL		16,000	20,212	21,077	11,439	633	10,282	22,279	3,735	477	43	2,280	22,412	15,224				
Grand Total		92,012	92,267	85,999	48,299	3,185	36,409	87,893	18,222	2,280	229	6,780	98,967	60,431	4,532,487			

REFERENCE:  
 DP : 10 PAIRS .80 & CABLE FILL  
 CABLE: 30 PAIRS .IN KM.

Table 1-4 Package No. 2 External Plant for Urban Area

CODE No.	EXCHANGE NAME	EXISTING STATUS				URGENT PROGRAM	IMPLEMENTATION PLAN FOR 2002		
		S/W CAPA.	PAIRS ON MDF	FAULT PAIRS	EFFICI. PAIRS		SUPPLY VOLUME	ADDITION PAIRS	TOTAL PAIRS
0103	LUSAKA MAIN	25,000	19,371	622	18,749	0	16,385	5,400	24,100
0102	CHELSTON	3,000	1,800	0	1,800	800	4,456	3,500	6,100
0301	RITWE	17,000	23,350	1,100	22,250	0	15,522	1,300	23,600
	TOTAL	45,000	46,521	1,722	42,799	800	36,363	10,200	53,800

Table 1-5 Package No. 3 External Plant for Urban Area

CODE No.	EXCHANGE NAME	EXISTING STATUS				URGENT PROGRAM	IMPLEMENTATION PLAN FOR 2002		
		S/W CAPA.	PAIRS ON MDF	FAULT PAIRS	EFFICI. PAIRS		SUPPLY VOLUME	ADDITION PAIRS	TOTAL PAIRS
0105	AIRPORT INT.	512	550	35	515	0	384	100	600
0108	ROMA	2,500	2,200	0	2,200	500	3,710	2,500	5,200
0109	WOODLANDS	5,000	4,048	120	3,928	1,500	8,255	5,900	11,300
0205	KAFUE	2,000	3,000	54	2,946	0	3,284	1,300	4,700
0304	CHINGOLA	3,000	6,200	120	6,080	0	6,295	3,000	9,100
0307	MFULIRA	3,000	3,600	0	3,600	200	4,972	3,200	7,000
0401	NDOLA MAIN	6,000	8,643	0	8,643	0	8,286	3,400	12,000
0404	KABUSHI	1,000	2,000	0	2,000	0	3,393	2,700	4,700
0406	NORTH RISE	1,000	1,300	8	1,292	0	1,663	1,100	2,400
0407	PAMODZI	1,000	1,000	23	977	300	1,691	1,100	2,400
0409	LUANSHA	3,000	2,893	25	2,868	1,300	3,183	1,100	4,500
0701	KASANA	1,500	1,800	255	1,545	0	1,444	600	2,100
	TOTAL	29,512	36,434	640	35,794	3,800	46,560	26,500	66,000

Table 1-6 Package No. 4 External Plant for Urban Area

CODE No.	EXCHANGE NAME	EXISTING STATUS				URGENT PROGRAM	IMPLEMENTATION PLAN FOR 2002		
		S/W CAPA.	PAIRS ON MDF	FAULT PAIRS	EFFICI. PAIRS		SUPPLY VOLUME	ADDITION PAIRS	TOTAL PAIRS
0201	CHILANGA	768	500	15	485	0	792	600	1,300
0601	CHOMA	1,800	1,800	192	1,608	0	1,499	600	2,200
0604	KALOMO	400	470	2	468	0	360	100	600
0607	MONZE	600	740	3	737	0	800	500	1,200
0612	SESHEKE	50	0	0	0	0	20	100	100
0705	MBALA	640	600	83	567	0	562	200	800
0706	MPIKA	768	600	24	576	0	697	400	1,000
0711	KAPUTA (PROPOSED)	0	0	0	0	0	145	200	200
0901	CHIPATA	1,800	1,800	0	1,800	0	2,270	1,400	3,200
0902	CHADIZA	200	150	0	150	0	217	200	400
0904	KATETE	300	300	0	300	0	284	100	400
0908	PETAUKE	400	350	0	350	0	359	200	600
	TOTAL	7,726	7,310	275	7,035	0	8,059	4,600	11,800

Table 1-7 Package No. 5 External Plant for Urban Area

CODE No.	EXCHANGE NAME	EXISTING STATUS				URGENT PROGRAM	IMPLEMENTATION PLAN FOR 2002		
		S/W CAPA.	PAIRS ON MDF	FAULT PAIRS	EFFICI. PAIRS		SUPPLY VOLUME	ADDITION PAIRS	TOTAL PAIRS
0103	CHINIKA	1,500	1,300	244	1,056	600	1,900	1,000	2,700
0106	MAKENI	1,000	527	50	477	600	1,427	800	1,500
0107	RIDGEWAY	5,000	4,596	75	4,521	0	4,990	2,600	7,100
0206	LUANGWA	96	160	0	160	0	162	100	300
0303	CHILILABOMBWE	2,000	1,000	0	1,000	300	1,971	1,400	2,700
0402	IND. NORTH	1,000	1,600	0	1,600	0	1,280	300	1,900
0405	KANSENSHI	2,000	2,030	98	1,932	600	2,441	900	3,400
0501	MANSA	1,000	800	0	800	0	1,255	1,000	1,800
0504	NCHELENGE	120	250	0	250	0	287	200	500
0505	SANFYA	256	350	0	350	0	269	100	500
0605	MAAMEA	120	300	0	300	0	313	200	500
0702	CHINSALI	192	200	0	200	0	215	100	300
0703	ISOKA	250	250	65	185	0	284	200	400
0708	MPULUNGU	192	200	11	189	0	170	100	300
0710	NAKONDE	120	200	4	196	0	256	200	400
0807	CHALATA	20	0	0	0	0	14	100	100
0808	KANONA	10	0	0	0	0	12	100	100
1006	LINHULUNGA	20	0	0	0	0	15	100	100
1102	KABOMPO	120	200	0	200	0	289	100	300
1103	KASEMPA	120	200	0	200	0	235	100	300
1105	MWINILUNGA	120	250	0	250	0	268	100	400
1106	ZAMBEZI	120	300	0	300	0	240	100	400
	TOTAL	15,430	14,713	547	14,166	2,100	18,174	5,900	26,400

Table 1-8 Package No. 6 External Plant for Urban Area

CODE No.	EXCHANGE NAME	STATUS IN 2002		IMPLEMENTATION PLAN FOR 2012			TOTAL COST (US\$)
		S/W CAPA.	PAIRS ON MDF	SUPPLY VOLUME	ADDITIONAL PAIR MDF	TOTAL PAIR	
0181	LUSAKA MAIN	19,500	24,100	27,782	12,100	36,200	9,875,000
0189	WOODLANDS	5,900	11,300	13,926	6,900	18,200	5,175,000
0301	KITPE	18,700	23,600	28,472	13,500	37,100	10,125,000
0304	CHINGOLA	7,600	9,100	11,527	5,900	15,000	4,425,000
0307	NEFULIBA	6,000	7,000	9,105	4,900	11,900	3,675,000
	TOTAL	56,800	75,100	90,812	43,300	118,400	32,475,000

Table 1-9 Package No. 7 External Plant for Urban Area

CODE No.	EXCHANGE NAME	STATUS IN 2002		IMPLEMENTATION PLAN FOR 2012			TOTAL COST (US\$)
		S/W CAPA.	PAIRS ON MDF	SUPPLY VOLUME	ADDITIONAL PAIR MDF	TOTAL PAIR	
0102	CHELSTON	5,300	6,100	7,518	3,700	9,800	2,775,000
0103	CHINIKA	2,300	2,700	3,205	1,500	4,200	1,125,000
0104	EMMASDALE	4,000	2,500	5,456	4,600	7,100	3,450,000
0105	AIRPORT INT.	500	600	648	300	900	225,000
0106	MAKENI	1,700	1,900	2,407	1,300	3,200	975,000
0107	RIDGEWAY	5,900	7,100	8,405	3,900	11,000	2,925,000
0108	ROMA	4,400	5,200	6,258	3,000	8,200	2,250,000
0401	NDOLA MAIN	9,800	12,000	15,219	7,800	19,800	5,850,000
0402	IND. NORTH	1,000	1,900	2,343	1,200	3,100	900,000
0404	KABUSHI	4,000	4,700	6,233	3,500	8,200	2,625,000
0405	KANSENSHI	2,900	3,400	4,411	2,400	5,800	1,800,000
0406	NORTH RISE	2,000	2,400	3,055	1,600	4,000	1,200,000
0407	PAMODZI	2,000	2,400	3,106	1,700	4,100	1,275,000
0409	LUANSHA	3,900	4,500	5,827	3,100	7,600	2,325,000
0601	GHOMA	2,200	2,200	3,776	2,800	5,000	2,100,000
0602	GWEMBE	200	200	218	100	300	75,000
0603	ITEZHI TEZHI	224	150	220	100	300	75,000
0608	NAMUWALA	256	200	276	200	400	150,000
0609	PEMBA	300	230	385	300	500	225,000
0610	LIVINGSTONE	5,000	4,300	7,431	5,400	9,700	4,050,000
	TOTAL	58,400	64,650	86,336	48,500	113,200	36,375,000

Table 1-10 Package No. 8 External Plant for Urban Area

CODE No.	EXCHANGE NAME	STATUS IN 2002		IMPLEMENTATION PLAN FOR 2012			TOTAL COST (US\$)
		S/W CAPA.	PAIRS ON MDF	SUPPLY VOLUME	ADDITIONAL PAIR MDF	TOTAL PAIR	
0201	CHILANGA	1,000	1,100	1,336	700	1,300	525,000
0202	CHIRUNDU	224	200	244	200	400	150,000
0203	CHISAMEA	256	300	251	100	400	75,000
0205	KAFUE	3,900	4,700	5,540	2,600	7,300	1,950,000
0206	LUANGWA	224	300	272	100	400	75,000
0207	MUNBUWA	400	310	425	300	600	225,000
0210	SIAVONGA	512	295	578	500	800	375,000
0302	CHAMBISHI	500	500	865	700	1,200	525,000
0303	CHELILABOMBWE	2,400	2,700	3,688	2,000	4,700	1,500,000
0305	ITIMPI	500	600	615	200	800	150,000
0308	MINDOLO	3,000	4,700	3,799	300	5,000	225,000
0501	HANSA	1,900	1,800	3,213	2,400	4,200	1,800,000
0502	KAWAMBWE	250	400	479	300	700	225,000
0503	NWENSE	250	135	265	300	400	225,000
0504	NCHELENGE	500	500	736	500	1,000	375,000
0505	SAMPYA	400	500	688	400	900	300,000
0801	KARWE	4,400	7,300	5,820	300	7,600	225,000
0804	MUKUSHI	384	375	492	300	700	225,000
0806	SERENJE	384	400	460	200	600	150,000
0901	CHIPATA	3,400	3,200	6,643	5,500	8,700	4,125,000
0902	CHADIZA	400	400	635	500	900	375,000
0903	CHAMA	300	500	421	100	600	75,000
0904	KATEFE	500	400	822	700	1,100	525,000
0906	MUFUWE	224	200	205	100	300	75,000
0907	NYINSA	200	200	380	300	500	225,000
0908	PETAUKE	600	600	1,052	800	1,400	600,000
0909	SINDA	200	150	266	200	400	150,000
	TOTAL	27,220	32,765	48,119	28,600	53,400	15,450,000

Table 1-11 Package No. 9 External Plant for Urban Area

CODE No.	EXCHANGE NAME	STATUS IN 2002		IMPLEMENTATION PLAN FOR 2012			TOTAL COST (US\$)
		S/W CAPA	PAIRS ON MDF	SUPPLY VOLUME	ADDITIONAL PAIR MDF	TOTAL PAIR	
0604	KALOMO	600	600	922	600	1,200	450,000
0605	MAANBA	500	500	788	600	1,100	450,000
0606	MAZABUKA	1,500	1,520	2,419	1,700	3,200	1,275,000
0607	MONZE	1,300	1,200	2,113	1,600	2,800	1,200,000
0611	ZIMBA	100	50	129	100	200	75,000
0701	KASAMA	2,000	2,100	3,440	2,400	4,500	1,800,000
0702	CHINSALI	300	300	514	400	700	300,000
0703	ISOKA	400	400	677	500	900	375,000
0704	LWINGU	256	300	314	200	500	150,000
0705	MBALA	800	800	1,339	1,000	1,800	750,000
0706	MPIKA	1,000	1,000	1,661	1,200	2,200	900,000
0707	MPOROKOSO	256	200	389	400	600	300,000
0708	MPULUNGU	300	300	405	300	600	225,000
0709	MUNGWI	192	200	234	200	400	150,000
0710	NAKONDE	400	400	610	400	800	300,000
0711	KAPUTA	200	200	345	300	500	225,000
1101	SOLWEZI	1,400	1,500	1,966	700	2,600	525,000
1102	KABOMPO	300	300	395	300	600	225,000
1103	KASENPA	400	300	444	300	600	225,000
1105	MWINILUNGA	400	400	508	300	700	225,000
1106	ZAMBEZI	400	400	455	200	600	150,000
	TOTAL	13,004	13,370	22,065	13,700	27,100	10,275,000

Table 1-12 Package No. 10 External Plant for Rural Telecommunications

CODE No.	EXCHANGE NAME	IMPLEMENTATION PLAN FOR 2002					COSTS (US\$)		
		SUPPLY VOLUME			MARS-C	MARS-S.R	MARS-C	MARS-S.R	TOTAL
		TOTAL	MARS-C	MARS-S.R	PAIRS	SUB	COSTS	COSTS	COSTS
2101	LUSAKA MAIN	111	23	88	30	88	105,000	532,800	637,800
2102	CHELSTON	35	7	28	10	28	35,000	168,000	203,000
2103	GHINIKA	15	3	12	10	12	35,000	72,000	107,000
2105	AIRPORT INT	3	1	2	10	2	35,000	14,400	49,400
2106	MAKENI	11	3	8	10	8	35,000	52,800	87,800
2108	ROMA	29	6	23	10	23	35,000	139,200	174,200
2109	WOODLANDS	64	13	51	20	51	70,000	307,200	377,200
	LUSAKA METRO TOTAL	268	57	211	100	211	350,000	1,286,400	1,636,400
2201	CHILANGA	6	2	4	10	4	35,000	28,800	63,800
2202	CHIRUNDU	23	5	18	10	18	35,000	110,400	145,400
2203	CHISAMBA	25	5	20	10	20	35,000	120,000	155,000
2204	CHONGWE	1	1	0	10	0	35,000	4,800	39,800
2205	KAFUE	25	5	20	10	20	35,000	120,000	155,000
2206	LUANGWA	1	1	0	10	0	35,000	4,800	39,800
2207	MUNBUWA	42	9	33	20	33	70,000	201,600	271,600
2208	NAMALUNDU GORGE	2	1	1	10	1	35,000	9,600	44,600
2209	NAMPONDWE	6	2	4	10	4	35,000	28,800	63,800
2210	SIAYONGA	55	11	44	20	44	70,000	264,000	334,000
	LUSAKA TOTAL	186	42	144	120	144	420,000	892,800	1,312,800
2301	KITWE	362	73	289	100	289	350,000	1,737,600	2,087,600
2302	CHAMBISHI	11	3	8	10	8	35,000	52,800	87,800
2303	CHILILABOMBWE	44	9	35	20	35	70,000	211,200	281,200
2304	CHINGOLA	141	29	112	40	112	140,000	676,800	816,800
2305	ITIMPI	8	2	6	10	6	35,000	38,400	73,400
2306	KALULUSHI	25	5	20	10	20	35,000	120,000	155,000
2307	MFULIRA	111	23	88	30	88	105,000	532,800	637,800
	COPPERBELT TOTAL	702	144	558	220	558	770,000	3,369,600	4,139,600
2402	IND. NORTH	29	6	23	10	23	35,000	139,200	174,200
2403	IND. SOUTH	13	3	10	10	10	35,000	62,400	97,400
2408	MASAITI	3	1	2	10	2	35,000	14,400	49,400
2409	UDANSHA	71	15	56	20	56	70,000	340,800	410,800
	NDOLA TOTAL	116	25	91	50	91	175,000	556,800	731,800
2501	MANSA	326	66	260	90	260	315,000	1,564,800	1,879,800
2502	KAWAMBWE	49	10	39	20	39	70,000	235,200	305,200
2503	MWENSE	15	3	12	10	12	35,000	72,000	107,000
2504	NCHELENGE	75	15	60	20	60	70,000	360,000	430,000
2505	SAMEYA	70	14	56	20	56	70,000	336,000	406,000
	LUAPULA TOTAL	535	109	426	160	426	560,000	2,568,000	3,128,000
2701	KASAMA	250	50	200	70	200	245,000	1,200,000	1,445,000
2702	CHINSALI	37	8	29	10	29	35,000	177,600	212,600
2703	ISOKA	49	10	39	20	39	70,000	235,200	305,200
2704	LURINGU	23	5	18	10	18	35,000	110,400	145,400
2705	MBALA	97	20	77	30	77	105,000	465,600	570,600
2706	MPIKA	121	25	96	40	96	140,000	580,800	720,800
2707	MPOROKOSO	28	6	22	10	22	35,000	134,400	169,400
2708	MPULUNGU	29	6	23	10	23	35,000	139,200	174,200
2709	MUNGWI	10	2	8	10	8	35,000	48,000	83,000
2710	NKONDE	44	9	35	20	35	70,000	211,200	281,200
2711	KAPUTA (PROPOSED)	25	5	20	10	20	35,000	120,000	155,000
	NORTHERN TOTAL	713	148	565	240	565	840,000	3,422,400	4,262,400
2801	KARWE	578	116	462	160	462	560,000	2,774,400	3,334,400
2802	CHIBOMBO	8	2	6	10	6	35,000	38,400	73,400
2803	KAPIRIMPOSE	44	9	35	20	35	70,000	211,200	281,200
2804	MUKUSHI	49	10	39	20	39	70,000	235,200	305,200
2805	MUPEPETWE	6	2	4	10	4	35,000	28,800	63,800
2806	SERENJE	46	10	36	20	36	70,000	220,800	290,800
2807	CHALATA	3	1	2	10	2	35,000	14,400	49,400
2808	KANONA	2	1	1	10	1	35,000	9,600	44,600
	CENTRAL TOTAL	736	151	585	260	585	510,000	2,532,800	3,042,800
	TOTAL	3,256	677	2,579	1,150	2,579	4,025,000	15,628,800	19,653,800

Explanatory note: MARS : Multi Access Radio System.  
MARS-C : Applying MARS system with cable.  
MARS-S.R: Applying MARS system with Single Radio channel.

Table 1-13 Package No. 11 External Plant for Rural Telecommunications

CODE No.	EXCHANGE NAME	IMPLEMENTATION PLAN FOR 2002					COSTS (US\$)		
		SUPPLY VOLUME			MARS-C	MARS-S.R	MARS-C	MARS-S.R	TOTAL
		TOTAL	MARS-C	MARS-S.R	PAIRS	SUP.	COSTS	COSTS	COSTS
0601	CHOMA	362	73	289	100	289	350,000	1,737,600	2,087,600
0602	GWEMBE	21	5	16	10	16	35,000	100,800	135,800
0603	ITEZHI TEZHI	21	5	16	10	16	35,000	100,800	135,800
0604	KALOMO	88	18	70	30	70	105,000	422,400	527,400
0605	MAAMBA	76	16	60	20	60	70,000	364,800	434,800
0606	MAZABUKA	232	47	185	70	185	245,000	1,113,600	1,358,600
0607	MONZE	282	41	161	60	161	210,000	569,600	1,179,600
0608	NAMUWALA	26	6	20	10	20	35,000	124,800	159,800
0609	PEMBA	29	6	23	10	23	35,000	139,200	174,200
0610	LIVINGSTONE	712	143	569	190	569	665,000	3,417,600	4,082,600
0611	ZIMBA	12	3	9	10	9	35,000	57,600	92,600
SOUTHERN TOTAL		1,781	362	1,419	520	1,419	1,820,000	8,548,800	10,368,800
0901	CHIPATA	541	109	432	150	432	525,000	2,596,800	3,121,800
0902	CHADIZA	52	11	41	20	41	70,000	249,600	319,600
0903	CHAMA	34	7	27	10	27	35,000	163,200	198,200
0904	KATETE	68	14	54	20	54	70,000	326,400	396,400
0905	LUNDAZI	67	14	53	20	53	70,000	321,600	391,600
0906	MUFUWE	15	3	12	10	12	35,000	72,000	107,000
0907	NYIMBA	31	7	24	10	24	35,000	148,800	183,800
0908	PETAUKE	86	18	68	30	68	105,000	412,800	517,800
0909	SINDA	22	5	17	10	17	35,000	105,600	140,600
EASTERN TOTAL		916	188	728	280	728	980,000	4,396,800	5,376,800
1001	MONGU	115	23	92	30	92	105,000	552,000	657,000
1002	KALABO	20	4	16	10	16	35,000	96,000	131,000
1003	KAOKA	25	5	20	10	20	35,000	120,000	155,000
1004	LUKULU	13	3	10	10	10	35,000	62,400	97,400
1005	SENANGA	45	9	36	20	36	70,000	216,000	286,000
1006	LIMULUNGA	4	1	3	10	3	35,000	19,200	54,200
1007	SESHEKE	8	2	6	10	6	35,000	38,400	73,400
WESTERN TOTAL		230	49	181	100	181	350,000	1,184,000	1,454,000
1101	SOLWEZI	97	20	77	30	77	105,000	465,600	570,600
1102	KABOMPO	20	4	16	10	16	35,000	96,000	131,000
1103	KASEMPA	22	5	17	10	17	35,000	105,600	140,600
1104	MUFUMBWE	7	2	5	10	5	35,000	33,600	68,600
1105	MWINILUNGA	25	5	20	10	20	35,000	120,000	155,000
1106	ZAMBEZI	23	5	18	10	18	35,000	110,400	145,400
NORTHWESTERN TOTAL		194	42	152	80	152	280,000	531,200	711,200
TOTAL		3,121	640	2,481	800	2,481	3,430,000	14,980,800	18,410,800

Explanatory note: MARS : Multi Access Radio System.  
MARS-C : Applying MARS system with cable.  
MARS-S.R: Applying MARS system with Single Radio channel.



Table 1-15 Package No. 13 External Plant for Rural Telecommunication

CODE No.	EXCHANGE NAME	STATUS IN 2002			IMPLEMENTATION PLAN FOR 2002			COSTS (US\$)			
		TOTAL SUB	MARS-C PAIRS	MARS+S.R SUB.	TOTAL SUPPLY VOLUME	MARS-C PAIRS	MARS+S.R SUB.	MARS-C COSTS	MARS+S.R COSTS	TOTAL COSTS	
0581	CHOMA	362	100	282	780	524	110	334	385,000	2,005,400	2,391,400
0582	GWEPE	21	10	16	45	36	19	19	35,000	115,200	150,200
0583	ITZHI TEZHI	21	10	16	45	36	19	19	35,000	115,200	150,200
0584	KALOMO	88	30	70	191	152	82	82	70,000	494,400	564,400
0585	MAMBWA	76	20	60	163	130	70	70	105,000	417,600	522,600
0586	MAZABUKA	232	70	185	500	400	214	214	210,000	1,286,400	1,496,400
0587	MONZE	282	60	181	437	349	188	188	210,000	1,138,000	1,348,000
0588	NAMUWALA	26	10	20	57	45	25	25	35,000	148,800	183,800
0589	PENBA	29	10	23	91	72	50	50	70,000	297,600	367,600
0590	LIVINGSTONE	712	190	569	1536	1228	659	659	735,000	3,955,200	4,690,200
0591	ZIMBA	12	10	9	27	21	12	12	0	72,000	72,000
SOUTHERN TOTAL		1,781	520	1,419	3,872	3,092	540	1,573	1,830,000	10,036,800	11,866,800
0901	CHIPATA	541	150	432	1411	1128	220	695	770,000	4,176,000	4,946,000
0902	CHALIZA	52	20	41	135	108	20	66	70,000	338,400	408,400
0903	CHAMA	34	10	27	89	71	20	44	70,000	264,000	334,000
0904	KARIFE	58	20	54	177	141	30	87	105,000	523,200	628,200
0905	LUNDAZI	57	20	53	175	140	30	86	105,000	518,400	623,400
0906	MPEWE	15	10	12	32	25	0	14	0	81,600	81,600
0907	NYIMBA	31	10	24	81	64	20	40	70,000	240,000	310,000
0908	PETAUKE	86	30	68	224	179	30	110	105,000	662,400	767,400
0909	SINDA	22	10	17	56	44	10	27	35,000	163,200	198,200
EASTERN TOTAL		916	280	728	2,330	1,900	380	1,171	1,330,000	7,827,200	9,157,200
1001	HONGU	115	30	92	333	270	10	14	35,000	36,400	71,400
1002	KALABO	20	10	16	23	5	2	2	0	14,400	14,400
1003	KASMA	25	10	20	28	6	0	3	0	18,200	18,200
1004	LUKULU	13	10	10	15	3	0	2	0	9,600	9,600
1005	SENANGA	45	20	36	52	41	0	6	0	33,500	33,500
1006	LIMULUNGA	4	10	3	1	4	0	1	0	4,800	4,800
1007	SESMEKE	8	10	6	5	7	0	1	0	4,800	4,800
WESTERN TOTAL		230	100	181	266	209	10	29	35,000	172,800	207,800
1101	SOLWEZI	97	30	77	339	227	20	50	70,000	237,500	307,500
1102	KABOMPO	20	10	16	32	25	0	10	0	57,600	57,600
1103	KASEMPA	22	10	17	36	28	0	11	0	67,200	67,200
1104	MUEURWE	7	10	5	12	9	0	4	0	24,000	24,000
1105	MWINILUNGA	25	10	20	41	32	10	13	35,000	76,800	111,800
1106	ZAMBEZI	23	10	18	37	29	0	11	0	67,200	67,200
NORTHWESTERN TOTAL		194	80	152	317	251	30	98	105,000	538,400	643,400
TOTAL		3,121	980	2,481	6,835	5,452	960	2,971	3,360,000	17,827,200	21,187,200

Explanatory note: MARS : Multi Access Radio System.  
MARS+C : Applying MARS system with cable.  
MARS+S.R: Applying MARS system with Single Radio channel.



Table 1-16 Exchange Installation and Expansion Plan (Case 1) (1/4)

PAC NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		SW. CAPA 2002	DEMAND 2002	SUPPLY 2002	INST. COST (X1000 \$)
						REMOVE	EXPAND				
2 101	LUSAKA TTS						(3,100)	(3,100)			2,179.9
2 101	LUSAKA MAIN		15,000 A, NXIE		80	-15,000					
2 101	LUSAKA MAIN	12,776	10,000 D, N61		89	0	17,000	27,000	23,359	22,404	4,878.6
2 102	CHELSTON	3,448	3,000 A, NXIE		84	-3,000	7,200	7,200	6,304	6,098	2,529.0
5 103	CHINIKA	1,470	1,500 D, N61		90	0	1,600	3,100	2,688	2,600	593.0
0 104	EMASDALE	2,410	4,000 D, N61		89	0	1,200	5,200	4,406	4,406	541.0
3 105	AIRPORT INT.	297	512 A, MCR		81	-512	700	700	543	525	302.3
5 106	MAKENI	1,104	1,000 D, N61		90	0	1,300	2,300	2,019	1,952	554.0
5 107	RIDGEWAY	3,713	5,000 D, N61		93	0	3,000	8,000	6,789	5,789	775.0
3 108	ROMA	2,870	2,500 D, N61		88	0	3,500	6,000	5,247	5,076	840.0
3 109	WOODLANDS	6,387	5,000 D, E10		87	0	8,300	13,300	11,578	11,296	1,917.5
3 100	LUSAKA M. TOTAL	34,475	47,512			-18,512	43,800	72,800	63,033	61,146	15,119.3
4 201	CHILANGA	613	768 A, MCR		80	-768	1,300	1,300	1,121	1,084	887.1
5 202	CHIRUNDU	138	96 A, MCR		87	0	128	224	295	155	38.9
0 203	CHISAMBA	208	256 A, MCR		87	0	128	384	354	206	38.9
5 204	CHONGWE	122	96 A, MCR		88	0	256	352	223	216	57.2
3 205	KAFUE	2,541	2,000 A, NXIE		82	-2,000	5,300	5,300	4,646	4,494	1,515.1
5 206	LUANGWA	125	96 A, MCR		84	0	256	352	229	221	57.2
4 207	MUMBWA	352	200 A, ARF		80	-200	500	500	600	348	230.5
5 208	NAMALUNDU GORGE	154	96 A, MCR		87	0	352	448	282	272	71.0
0 209	NAMPUNDWE	81	96 A, MCR		88	0	128	224	138	108	38.9
0 210	SIYONGA	326	512 A, MCR		87	-512	500	500	697	367	230.5
200	LUSAKA TOTAL	4,560	4,216			-3,480	8,848	9,584	8,585	7,471	3,165.3
2 301	KITWE TTS		(2,500)				(2,000)	(2,000)			1,862.0
2 301	KITWE (TS)		(1,200) A, ARM		78	(-1,200)					
2 301	KITWE		9,000 A, ARF		78	-9,000					
2 301	KITWE	15,601	8,000 D, N61		91	0	18,000	26,000	23,642	21,480	5,022.8
0 302	CHAMBISHI	509	500 D, N61		91	0	300	800	716	653	424.0
5 303	CHILILABOMBE	2,123	2,000 D, N61		93	0	1,300	3,300	2,987	2,725	554.0
3 304	CHINGOLA	6,783	3,000 A, ARF		81	-3,000	10,000	10,000	9,545	8,705	3,299.0
0 305	ITIMPI	362	500 D, N61		91	0	0	500	509	465	0.0
0 306	KALULUSHI	1,188	3,000 D, N61		93	0	0	3,000	1,672	1,525	0.0
3 307	MUFULIRA	5,358	3,000 A, ARF		80	-3,000	8,000	8,000	7,540	6,876	2,749.0
0 308	MINDOLO	3,200	3,000 D, N61		93	0	400	3,400	2,814	2,814	437.0
300	KITWE TOTAL	35,124	32,000			-15,000	38,000	55,000	49,425	45,243	14,347.8

Table 1-16 Exchange Installation and Expansion Plan (Case 1) (2/4)

PAC NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		SW. CAPA 2002	DEMAND 2002	SUPPLY 2002	INST. COST (X1000 \$)
						REMOVE	EXPAND				
3 401	NDOLA MAIN	8,012	6,000 D, E10	D, E10	87	0	7,300	13,300	11,274	11,274	1,707.9
5 402	IND. NORTH	1,379	1,000 D, E10	D, E10	87	0	1,100	2,100	1,340	1,770	528.0
0 403	IND. SOUTH	616	1,000 D, E10	D, E10	87	0	0	1,000	867	791	0.0
3 404	KABUSHI	3,281	1,000 D, E10	D, E10	87	0	4,500	5,500	4,617	4,617	970.0
5 405	KANSENSHI	2,322	2,000 D, E10	D, E10	87	0	1,800	3,800	3,267	3,267	632.0
3 406	NORTH RISE	1,608	1,000 D, E10	D, E10	87	0	1,700	2,700	2,263	2,263	606.0
3 407	PAMODZI	1,635	1,000 D, E10	D, E10	87	0	1,800	2,800	2,301	2,301	619.0
5 408	MASAITI	129	96 A, MCR	A, MCR	87	0	128	224	182	166	38.9
3 409	LUANSHYA	3,429	3,000 X, ARF	X, ARF	78	-3,000	5,200	5,200	4,825	4,401	1,499.4
400	NDOLA TOTAL	22,411	16,096			-3,000	23,628	36,724	31,536	30,850	6,601.2
5 501	MANSA	1,939	1,000 D, N61	D, N61	90	0	1,400	2,400	3,982	2,035	567.0
0 502	KAWAMBWA	289	256 A, MCR	A, MCR	83	-256	400	400	594	303	194.6
5 503	MWENSE	131	128 A, MCR	A, MCR	83	0	128	256	269	181	38.9
5 504	NCHELENGE	444	128 A, MCR	A, MCR	83	-128	600	500	912	466	777.2
5 505	SAMFYA	415	256 A, MCR	A, MCR	83	-256	600	500	852	435	777.2
500	LUAPULA TOTAL	3,218	1,768			-640	3,128	4,256	6,609	3,420	2,354.9
4 601	CHOMA (TS)		(400) X, ARM	X, ARM	79	(-400)					
4 601	CHOMA		1,000 X, C23	X, C23	*91	-1,000					
4 601	CHOMA	2,132	800 X, ARF	X, ARF	79	-800	2,900	2,900	4,561	2,401	1,138.3
0 602	GWEMBE	123	200 X, ARK	X, ARK	80	-200	200	200	263	139	122.9
5 603	ITEZHI TEZHI	124	96 A, MCR	A, MCR	87	0	128	224	265	140	38.9
4 604	KALOMO	521	400 X, ARK	X, ARK	79	-400	700	700	1,115	587	792.9
5 605	MAAMBA	445	128 A, MCR	A, MCR	87	-128	600	600	952	501	777.2
4 606	MAZABUKA	1,366	800 X, ARF	X, ARF	80	-800	1,900	1,900	2,923	1,539	981.3
4 607	MONZE	1,193	600 X, ARF	X, ARF	80	-600	1,600	1,600	2,552	1,344	934.2
5 608	NAHWALA	156	128 A, MCR	A, MCR	87	0	128	256	334	176	38.9
0 609	PEMBA	209	300 X, ARK	X, ARK	81	-300	300	300	447	314	158.8
0 610	LIVINGSTONE	4,196	5,000 D, E10	D, E10	87	0	600	5,600	8,977	4,726	463.0
5 611	ZIMBA	73	50 MANUAL	MANUAL	72	-50	100	100	156	82	87.1
4 612	SESHEXE	82	50 MANUAL	MANUAL		-50	100	100	93	48	87.1
600	SOUTHERN TOTAL	10,620	9,552			-4,328	9,255	14,480	22,638	11,997	5,620.5

Table 1-16 Exchange Installation and Expansion Plan (Case 1) (3/4)

PAC NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		SW. CAPA 2002	DEMAND 2002	SUPPLY 2002	INST. COST (\$1000)
						REMOVE	EXPAND				
3 701	KASAMA	1,997	1,500	A, NXLE	83	-1,500	2,700	2,700	3,705	2,213	1,106.9
5 702	CHINSALI	298	192	A, MCR	83	-192	400	400	553	330	194.5
5 703	ISOKA	393	256	A, MCR	83	-256	600	600	729	436	777.2
0 704	LWINGU	182	256	A, MCR	84	0	0	256	338	202	0.0
4 705	MBALA	777	640	A, MCR	83	-640	1,100	1,100	1,441	861	855.7
4 706	MPIKA	964	768	A, MCR	83	-768	1,300	1,300	1,788	1,068	887.1
0 707	MPOKOSO	226	256	A, MCR	83	-256	300	300	419	250	158.8
5 708	MPULUNGU	235	192	A, MCR	83	-192	400	400	436	260	194.6
0 709	MUNGWI	127	192	A, MCR	83	0	128	320	236	175	38.9
5 710	NAKONDE	354	128	A, MCR	83	-128	500	500	657	383	230.5
4 711	KAPUTA (PROPOSE)	-----	-----	-----	-----	-----	0	300	371	222	158.8
700	NORTHERN TOTAL	5,553	4,380			-3,932	7,728	8,176	10,673	6,410	4,503.1
2 801	KABWE	4,825	4,000	A, NXLE	82	-4,000	5,700	5,700	8,218	4,770	1,577.9
0 802	CHIBOMBO	88	128	A, MCR	88	0	0	128	150	100	0.0
0 803	KAPIRIMPOSHI	365	384	A, MCR	82	-384	500	500	622	361	230.5
0 804	MKUSHI	408	384	A, MCR	82	-384	500	500	695	403	230.5
5 805	MUPEPETWE	54	1,000	X, C23	*91	-1,000	100	100	92	53	87.1
0 806	SERENJE	381	384	A, MCR	82	-384	500	500	649	377	230.5
5 807	CHALATA	22	20	MANUAL		-20	100	100	37	22	87.1
5 808	KANONA	19	10	MANUAL		-10	100	100	32	19	87.1
800	CENTRAL TOTAL	6,162	6,310			-6,182	7,500	7,628	10,495	6,105	2,530.6
4 901	CHIPATA (TS)		(400)	X, ARM	79	(-400)					
4 901	CHIPATA		1,000	X, C23	*89	-1,000					
4 901	CHIPATA	2,101	800	X, ARF	81	-800	4,300	4,300	6,862	3,629	1,358.1
4 902	CHADIZA	201	200	X, ARK	81	-200	500	500	656	347	761.5
5 903	CRAMA	133	128	A, MCR	87	-128	300	300	434	229	158.8
4 904	KATETE	263	300	X, ARK	81	-300	600	600	859	455	777.2
0 905	LUNDAZI	260	384	A, MCR	87	-384	600	600	849	449	777.2
5 906	MFUWE	119	96	A, MCR	87	0	128	224	221	132	38.9
0 907	NYIMBA	120	200	X, ARK	80	-200	300	300	392	207	158.8
4 908	PETAUKE	333	400	X, ARK	80	-400	700	700	1,088	575	792.9
0 909	SINDA	84	200	X, ARK	81	-200	200	200	274	145	122.9
900	EASTERN TOTAL	3,614	3,708			-3,612	7,628	7,724	11,635	6,168	4,946.2

Table 1-16 Exchange Installation and Expansion Plan (Case 1) (4/4)

FAC NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		SW. CAPA. 2002	DEMAND 2002	SUPPLY 2002	INST. COST (\$1000 \$)
						REMOVE	EXPAND				
0 1001	MONGU	1,235	1,000	D, N61	90	0	0	1,000	1,403	719	0.0
0 1002	KALABO	216	128	A, MCR	83	0	128	256	245	126	38.9
0 1003	KAOMA	270	256	A, MCR	83	0	0	256	306	157	0.0
5 1004	LUKULU	142	64	A, MCR	83	0	128	192	161	83	38.9
0 1005	SENANGA	163	256	A, MCR	83	0	0	256	185	173	0.0
5 1006	LIMULUNGA	43	20	MANUAL	76	-20	100	100	49	25	87.1
1000	WESTERN TOTAL	2,070	1,724			-20	336	2,050	2,349	1,283	164.8
5 1101	SOLWEZI	1,309	1,000	D, N61	90	0	800	1,800	2,092	1,511	808.6
5 1102	KABONPO	263	128	A, MCR	85	-128	400	400	420	304	194.6
5 1103	KASEMPA	266	128	A, MCR	85	-128	500	500	473	342	230.5
0 1104	MUFUMBWE	100	96	A, MCR	85	0	128	224	160	115	38.9
5 1105	MWINILUNGA	338	128	A, MCR	85	-128	500	500	540	390	230.5
5 1106	ZAMBEZI	303	128	A, MCR	85	-128	500	500	484	350	230.5
1100	NORTHWEST TOTAL	2,609	1,608			-512	2,828	3,824	4,169	3,012	1,733.6
	ZAMBIA TOTAL	130,516	128,874			-59,218	152,700	222,356	221,147	183,105	61,178.2

Table 1-17 Exchange Installation and Expansion Plan (Case 1) (1/4)

PAC NO.	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
				REMOVE	EXPAND					
2 101	LUSAKA TTS	(3,100)	6		(1,400)	(4,500)			1,148.7	
2 101	LUSAKA MAIN		6	0						TMLS
2 101	LUSAKA MAIN	27,000	6	0	17,000	44,000	38,005	36,647	3,918.8	TMLS
2 102	CHELSTON	7,200	7	0	4,500	11,700	10,257	9,929	1,121.0	
5 103	CHINIKA	3,100	7	0	1,900	5,000	4,373	4,233	632.0	
0 104	EMASDALE	5,200	7	0	3,300	8,500	7,169	7,169	814.0	
3 105	AIRPORT INT.	700	7	0	400	1,100	883	855	155.8	
5 106	MAKENI	2,300	7	0	1,500	3,800	3,284	3,179	580.0	
5 107	RIDGEWAY	8,000	7	0	5,000	13,000	11,045	11,045	1,035.0	
3 108	ROMA	6,000	7	0	3,800	9,800	8,538	8,265	879.0	
3 109	WOODLANDS	13,300	6	0	8,400	21,700	19,000	18,392	1,938.4	
100	LUSAKA M. TOTAL	72,800		0	45,800	118,600	102,554	99,714	12,222.7	
4 201	CHILANGA	1,300	8	0	800	2,100	1,824	1,755	489.0	
5 202	CHIRUNDU	224	8	-224	500	500	703	372	230.5	
0 203	CHISAMBA	384	8	-384	500	500	649	372	230.5	
5 204	CHONGWE	352	8	-352	500	500	363	351	230.5	
3 205	KAFUE	5,300	8	0	3,400	8,700	7,550	7,317	827.0	
5 206	LUANGWA	352	8	-352	500	500	372	360	230.5	
4 207	MUMBWA	500	8	0	300	800	1,098	629	127.1	
5 208	NAMALUNDU GORGE	448	8	-448	600	600	458	443	265.4	
0 209	NAMPUNDE	224	8	-224	200	200	253	168	122.9	
0 210	SIYONGA	500	8	0	600	1,100	1,661	878	213.1	
200	LUSAKA TOTAL	9,584	8	-1,984	7,900	15,500	14,940	12,655	2,967.5	
2 301	KITWE TTS	(2,000)	6		(1,000)	(3,000)			1,050.2	
2 301	KITWE (TS)		6							
2 301	KITWE		6							TLS
2 301	KITWE	26,000	6	0	19,000	45,000	41,937	37,414	4,338.0	TLS
0 302	CHAKRISHI	800	8	0	600	1,400	1,271	1,154	463.0	
5 303	CHILILABOMBWE	3,300	8	0	2,400	5,700	5,289	4,815	697.0	
3 304	CHINGOLA	10,000	5	0	8,100	18,100	16,931	15,383	1,875.6	
0 305	ITIMPI	500	8	0	500	1,000	904	821	450.0	
0 306	KALULUSHI	3,000	0	0	200	3,200	2,965	2,694	411.0	
3 307	MUFULIRA	8,000	5	0	6,300	14,300	13,374	12,151	1,498.3	
0 308	MINDOHO	3,400	8	0	2,500	5,900	4,992	4,992	710.0	
300	KITWE TOTAL	55,000		0	39,600	94,600	87,673	79,424	11,493.1	

Table 1-17 Exchange Installation and Expansion Plan (Case 1) (2/4)

PAC NO.	CODE	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
					REMOVE	EXPAND					
3	401	NDOLA MAIN	13,300	7	0	10,300	23,600	19,999	19,999	2,335.7	TLS
5	402	IND. NORTH	2,100	7	0	1,600	3,760	3,442	3,127	593.0	
0	403	IND. SOUTH	1,000	7	0	700	1,700	1,538	1,397	476.0	
3	404	KABUSHI	5,500	7	0	4,200	9,700	8,190	8,190	931.0	
5	405	KANSENSHI	3,900	7	0	3,000	6,900	5,796	5,796	775.6	
3	406	NORTH RISE	2,700	7	0	2,100	4,800	4,014	4,014	658.0	
3	407	PAMODZI	2,800	7	0	2,100	4,900	4,081	4,081	658.0	
5	408	MASAITI	224	7	-224	400	400	322	293	194.6	
3	409	LUANSHYA	5,200	7	0	4,000	9,200	8,559	7,776	905.0	
2	400	NDOLA TOTAL	36,724		-224	28,400	64,900	55,941	54,673	7,527.3	
5	501	MANSA	2,400	8	0	3,500	5,900	10,122	5,002	840.0	TLS
0	502	KAWAMBWA	400	8	0	500	900	1,509	746	184.5	
5	503	MWENSE	256	8	-256	400	400	584	392	194.6	
5	504	NCHELENCE	600	8	0	800	1,400	2,318	1,145	489.0	
5	505	SAMFYA	600	8	0	700	1,300	2,156	1,071	476.0	
5	500	LUAPULA TOTAL	4,256		-256	5,900	9,900	16,799	8,356	2,184.1	
4	601	CHOMA (TS)		7							
4	601	CHOMA		7							
4	601	CHOMA	2,900	7	0	3,800	6,700	10,864	5,742	879.0	TLS
0	602	GWEMBE	200	7	0	200	400	627	331	98.4	
5	603	ITEZHI TEZHI	224	7	-224	400	400	632	334	194.6	
4	604	KALOMO	700	9	0	1,000	1,700	2,655	1,403	515.0	
5	605	MAANBA	600	9	0	900	1,500	2,268	1,199	502.0	
4	606	MAZABUKA	1,900	9	0	2,500	4,400	6,961	3,679	710.0	
4	607	MONZE	1,500	9	0	2,200	3,800	6,079	3,213	671.0	
5	608	NAMUWALA	256	7	-256	500	500	795	420	230.5	
0	609	PEMBA	300	7	0	400	700	1,065	597	155.8	
0	610	LIVINGSTONE	5,600	7	0	7,700	13,300	21,381	11,301	1,386.0	TLS
5	611	ZIMBA	100	9	0	200	300	372	197	98.4	
4	612	SESEKE	100	0	0	0	100	119	62	0.0	
6	600	SOUTHERN TOTAL	14,480		-480	19,800	33,800	53,818	28,478	5,440.7	

Table 1-17 Exchange Installation and Expansion Plan (Case 1) (3/4)

PAC NO.	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
				REMOVE	EXPAND					
3	701 KASAMA	2,700	9	0	3,300	6,000	8,529	5,950	814.0	TLS
5	702 CHINSALJ	400	9	0	500	900	1,273	754	184.5	
5	703 ISOKA	600	9	0	600	1,200	1,678	994	463.0	
0	704 LUWINGU	256	9	-256	600	600	777	460	266.4	
4	705 MBALA	1,100	9	0	1,300	2,400	3,318	1,965	554.0	
4	706 MPIXA	1,300	9	0	1,600	2,900	4,117	2,438	593.0	
0	707 MPOROKOSO	300	9	0	400	700	965	671	155.8	
5	708 MPULUNGU	400	9	0	300	700	1,004	585	127.1	
0	709 MUNGWI	320	9	-320	400	400	542	338	194.6	
5	710 NAKONDE	500	9	0	600	1,100	1,512	895	213.1	
4	711 KAPUTA (PROPOSE)	300	9	0	300	600	854	506	127.1	
700	NORTHERN TOTAL	8,176		-576	9,900	17,500	24,569	14,566	3,692.6	
2	801 KAPWE	5,700	8	0	4,500	10,200	15,050	8,627	976.0	TLS
0	802 CHIZOMBO	128	8	-128	200	200	274	173	122.9	
0	803 KAPRIMPOSHI	500	8	0	300	800	1,138	653	127.1	
0	804 MKUSHI	500	8	0	400	900	1,273	729	155.8	
5	805 MUPEPETWE	100	0	0	100	200	168	97	69.7	
0	806 SERENJE	500	8	0	400	900	1,188	681	155.8	
5	807 CHALATA	100	0	0	0	100	69	39	0.0	
5	808 KANONA	100	0	0	0	100	59	34	0.0	
800	CENTRAL TOTAL	7,628		-128	5,900	13,400	19,219	11,033	1,501.3	
4	901 CHIPATA (TS)		8							
4	901 CHIPATA		8							
4	901 CHIPATA	4,300	8	0	7,700	12,900	19,398	10,140	1,386.0	TLS
4	902 CHADIZA	500	8	0	700	1,200	1,856	970	476.0	
5	903 CHAMA	300	8	0	500	800	1,228	642	184.5	
4	904 KATETE	600	8	0	900	1,500	2,428	1,270	502.0	
0	905 LUNDAZI	600	8	0	900	1,500	2,400	1,255	502.0	
5	906 MFUWE	224	8	-224	400	400	508	301	194.6	
0	907 NYIMBA	300	8	0	400	700	1,108	580	155.8	
4	908 PETAUKE	700	8	0	1,200	1,900	3,074	1,607	541.0	
0	909 SINDA	200	8	0	300	500	776	405	127.1	
900	EASTERN TOTAL	7,724		-224	13,000	20,500	32,776	17,170	4,069.0	

Table 1-17 Exchange Installation and Expansion Plan (Case 1) (4/4)

PAC NO.	CODE NO.	EXCHANGE NAME	SW. CAPA. 2002	PAC NO.	2003-2012		SW. CAPA. 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1,000 \$)	REMARKS
					REMOVE	EXPAND					
0	1001	MONGU	1,000	0	0	100	1,100	1,800	930	398.0	TLS
0	1002	KALABO	256	9	-256	200	200	315	162	122.9	
0	1003	KAOMA	256	9	-256	300	300	393	203	158.8	
5	1004	LUKULU	192	9	-192	200	200	207	107	122.9	
0	1005	SEANGA	256	9	-256	200	200	237	215	122.9	
5	1006	LIMULUNGA	100	0	0	0	100	63	32	0.0	
1000		WESTERN TOTAL	2,060		-960	1,000	2,100	3,015	1,649	925.5	
5	1101	SOLWEZI	1,800	9	0	1,500	3,300	3,789	2,744	580.0	TLS
5	1102	KABOMPO	400	9	0	300	700	761	551	127.1	
5	1103	KASEMPA	500	9	0	300	800	857	620	127.1	
0	1104	MUFUMBWE	224	9	-224	300	300	289	210	158.8	
5	1105	MWINILUNGA	500	9	0	400	900	978	708	155.8	
5	1106	ZAMBEZI	500	9	0	300	800	877	635	127.1	
1100		NORTHWEST TOTAL	3,924		-224	3,100	6,800	7,551	5,468	1,275.9	
		ZAMBIA TOTAL	222,356		-5,056	180,300	397,600	418,855	332,186	53,399.8	



Table 1-18 Exchange Installation and Expansion Plan (Case 2) (1/4)

TAC CODE NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		DEMAND 2002	SUPPLY 2002	INST. COST (X1000 \$)
						REMOVE	EXPAND			
2 101	LUSAKA TTS					(2,500)				2,005.5
2 101	LUSAKA MAIN	15,000	A, NX1E	80		-15,000				
2 101	LUSAKA MAIN	12,775	10,000 D, N61	89		0	9,500	23,359	16,495	3,161.5
2 102	CHELSTON	3,448	3,000 A, NX1E	84		-3,000	5,300	6,304	4,491	2,005.5
5 103	CHINIKA	1,470	1,500 D, N61	90		0	800	2,688	1,915	489.0
0 104	EMMASDALE	2,410	4,000 D, N61	89		0	0	4,405	3,239	0.0
3 105	AIRPORT INT.	297	512 A, MCR	81		-512	500	543	387	230.5
5 105	MAKENI	1,104	1,000 D, N61	90		0	700	2,018	1,438	475.0
5 107	RIDGEWAY	3,713	5,000 D, N61	93		0	900	6,789	4,990	502.0
3 108	ROMA	2,870	2,500 D, N61	88		0	1,900	5,247	3,738	632.0
3 109	WOODLANDS	6,387	5,000 D, E10	87		0	4,800	11,678	8,319	1,183.9
100	LUSAKA M. TOTAL	34,475	47,512			-18,512	24,400	63,033	45,013	10,687.9
4 201	CHILANGA	613	758 A, MCR	80		-758	1,000	1,121	798	840.0
5 202	CHIRUNDU	138	96 A, MCR	87		0	128	295	120	38.9
0 203	CHISAMBA	208	256 A, MCR	87		0	0	354	158	0.0
5 204	CHONGWE	122	96 A, MCR	88		0	128	223	159	38.9
3 205	KAFUE	2,541	2,000 A, NX1E	82		-2,000	3,900	4,645	3,310	1,295.3
5 206	LUANGWA	125	96 A, MCR	84		0	128	229	163	38.9
4 207	MUMBWA	352	200 K, ARF	80		-200	400	500	267	194.7
5 208	NAMALUNDU GORGE	154	96 A, MCR	87		0	255	282	201	57.2
0 209	NAMPUNDWE	81	96 A, MCR	88		0	0	138	81	0.0
0 210	SIAVONGA	325	512 A, MCR	87		0	0	697	285	0.0
200	LUSAKA TOTAL	4,660	4,216			-2,958	5,940	8,565	5,542	2,503.8
2 301	KITWE TTS		(2,500)				(1,500)			1,746.4
2 301	KITWE (TS)		(1,200)	K, ARM	78	(-1,200)				
2 301	KITWE		9,000 K, ARF	78		-9,000				
2 301	KITWE	15,601	8,000 D, N61	91		0	10,700	23,642	15,884	3,491.5
0 302	CHAMUSHI	509	500 D, N61	91		0	0	716	483	0.0
5 303	CHILILASOMBWE	2,123	2,000 D, N61	93		0	400	2,987	2,014	437.0
3 304	CHINGOLA	5,783	3,000 K, ARF	81		-3,000	7,500	9,545	6,435	2,639.0
0 305	ITIMPI	362	500 D, N61	91		0	0	509	343	0.0
0 306	KALULUSHI	1,188	3,000 D, N61	93		0	0	1,672	1,127	0.0
3 307	MUFULIRA	5,358	3,000 K, ARF	80		-3,000	6,000	7,540	5,084	2,199.0
0 308	MINDOLO	3,200	3,000 D, N61	93		0	0	2,814	2,059	0.0
300	KITWE TOTAL	35,124	32,000			-15,000	24,700	48,425	33,440	10,512.9

Table 1-18 Exchange Installation and Expansion Plan (Case 2) (2/4)

PAC NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		DEMAND 2002	SUPPLY 2002	INST. COST (X1000 \$)	
						REMOVE	EXPAND				
3 401	NDOLA MAIN	8,012	6,000	D, E10	87	0	3,800	9,800	11,274	8,286	974.3
5 402	IND. NORTH	1,379	1,000	D, E10	87	0	600	1,600	1,940	1,308	463.0
0 403	IND. SOUTH	616	1,000	D, E10	87	0	0	1,000	867	584	0.0
3 404	KABUSHI	3,281	1,000	D, E10	87	0	3,000	4,000	4,617	3,393	776.0
5 405	KANSENSHI	2,322	2,000	D, E10	87	0	900	2,900	3,267	2,402	502.0
3 406	NORTH RISE	1,608	1,000	D, E10	87	0	1,000	2,000	2,263	1,663	515.0
3 407	PAMODZI	1,635	1,000	D, E10	87	0	1,000	2,000	2,301	1,691	515.0
5 408	MASAITI	129	96	A, MCR	87	0	128	224	182	122	38.9
3 409	LUANSHYA	3,428	3,000	X, ARF	78	-3,000	3,900	3,900	4,825	3,253	1,295.3
400	NDOLA TOTAL	22,411	16,996			-3,000	14,328	27,424	31,536	22,702	5,078.4
5 501	MANSA	1,939	1,000	D, N61	90	0	900	1,900	3,982	1,582	502.0
0 502	KAWAMBWA	289	256	A, MCR	83	0	0	256	594	235	0.0
5 503	MWENSE	131	128	A, MCR	83	0	128	256	269	137	38.8
5 504	NCHELENCE	444	128	A, MCR	83	-128	500	500	912	362	761.5
5 505	SANFYA	415	256	A, MCR	83	-256	400	400	852	339	745.8
500	LUAPULA TOTAL	3,218	1,768			-384	1,928	3,312	5,609	2,655	2,048.2
4 601	CHOMA (TS)		(400)	X, ARM	79	(-400)					
4 601	CHOMA		1,000	X, C23	*91	-1,000					
4 601	CHOMA	2,132	800	X, ARF	79	-800	2,200	2,200	4,561	1,861	1,028.4
0 602	GWEMBE	123	200	X, ARK	80	0	0	200	263	107	0.0
5 603	ITEZHI TEZHI	124	96	A, MCR	87	0	128	224	265	108	38.9
4 604	KALOMO	521	400	X, ARK	79	-400	600	600	1,115	455	777.2
5 605	MAAMBA	445	128	A, MCR	87	-128	500	500	952	388	761.5
4 606	MAZABUKA	1,366	800	X, ARF	80	-800	1,500	1,500	2,923	1,192	918.5
4 607	MONZE	1,193	600	X, ARF	80	-600	1,300	1,300	2,552	1,041	887.1
5 608	NAMWALA	156	128	A, MCR	87	0	128	256	334	136	38.9
0 609	PEMBA	209	300	X, ARK	81	0	0	300	447	238	0.0
0 610	LIVINGSTONE	4,196	5,000	E, E10	87	0	0	5,000	8,977	3,663	0.0
5 611	ZIMBA	73	50	MANUAL	72	-50	100	100	156	64	87.1
4 612	SESHEKE	82	50	MANUAL		-50	100	100	93	37	87.1
600	SOUTHERN TOTAL	10,620	9,552			-3,828	6,556	12,280	22,638	9,290	4,624.6

Table 1-18 Exchange Installation and Expansion Plan (Case 2) (3/4)

PAC CODE NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SERV YEAR	1993-2002		SW. CAPA 2002	DEMAND 2002	SUPPLY 2002	INST. COST (X1000 \$)
						REMOVE	EXPAND				
3	701 KASAMA	1,997	1,500 A, NX1E		83	-1,500	2,000	2,000	3,705	1,633	997.0
5	702 CHINSALI	288	192 A, MCR		83	-192	300	300	553	253	158.8
5	703 ISOKA	393	256 A, MCR		83	-256	400	400	729	333	745.8
0	704 LUWINGU	182	256 A, MCR		84	0	0	256	338	154	0.0
4	705 MBALA	777	640 A, MCR		83	-640	800	800	1,441	659	808.6
4	706 MPIKA	964	768 A, MCR		83	-768	1,000	1,000	1,788	817	840.0
0	707 MPOROKOSO	226	256 A, MCR		83	0	0	256	419	191	0.0
5	708 MPULUNGU	235	192 A, MCR		83	-192	300	300	436	199	158.8
0	709 MUNGWI	127	192 A, MCR		83	0	0	192	236	131	0.0
5	710 NAKONDE	354	128 A, MCR		83	-128	400	400	657	300	194.6
4	711 KAPUTA (PROPOSED)	-----	-----	-----	-----	0	200	200	371	170	122.9
700	NORTHERN TOTAL	5,553	4,380			-3,676	5,400	6,104	10,673	4,900	4,026.5
2	801 KABWE	4,825	4,000 A, NX1E		82	-4,000	4,400	4,400	8,218	3,659	1,373.8
0	802 CHIBOMBO	88	128 A, MCR		88	0	0	128	150	76	0.0
0	803 KAPIRIMPOSHI	355	384 A, MCR		82	0	0	384	622	277	0.0
0	804 MKUSHI	408	384 A, MCR		82	0	0	384	695	309	0.0
5	805 MUPEPETWE	54	1,000 X, C23		89	-1,000	100	100	92	41	87.1
0	806 SERENJE	381	384 A, MCR		82	0	0	384	649	289	0.0
5	807 CHALATA	22	20 MANUAL			-20	100	100	37	17	87.1
5	808 KANONA	19	10 MANUAL			-10	100	100	32	14	87.1
800	CENTRAL TOTAL	6,162	6,310			-5,030	4,700	5,980	10,495	4,682	1,635.0
4	901 CHIPATA (TS)		(400) X, ARM		79	(-400)					
4	901 CHIPATA		1,000 X, C23		89	-1,000					
4	901 CHIPATA	2,101	300 X, ARF		81	-800	3,400	3,400	5,862	2,811	1,216.8
4	902 CHADIZA	201	200 X, ARK		81	-200	400	400	556	259	745.8
5	903 CHAMA	133	128 A, MCR		87	-128	300	300	434	178	158.8
4	904 KATETE	263	300 X, ARK		81	-300	500	500	859	352	761.5
0	905 LUNDAZI	250	384 A, MCR		87	0	0	384	849	348	0.0
5	906 MUWE	119	96 A, MCR		87	0	128	224	221	101	38.9
0	907 NYIMBA	120	200 X, ARK		80	0	0	200	392	160	0.0
4	908 PETAUKE	333	400 X, ARK		80	-400	600	600	1,088	445	777.2
0	909 SINDA	84	200 X, ARK		81	0	0	200	274	112	0.0
900	EASTERN TOTAL	3,614	3,708			-2,828	5,328	6,208	11,635	4,776	3,698.9

Table 1-18 Exchange Installation and Expansion Plan (Case 2) (4/4)

PAC NO.	EXCHANGE NAME	DEMAND 1992	S/W CAPA.	TYPE	SRV YEAR	1993-2002		DEMAND 2002	SUPPLY 2002	INST. COST (X1000 \$)
						REMOVE	EXPAND			
0 1001	MONGU	1,236	1,000	D, N61	90	0	0	1,403	559	0.0
0 1002	KALABO	216	128	A, MCR	83	0	0	245	98	0.0
0 1003	KAOMA	270	256	A, MCR	83	0	0	306	122	0.0
5 1004	LUXULU	142	64	A, MCR	83	0	128	161	64	38.9
0 1005	SENANGA	163	256	A, MCR	83	0	0	185	139	0.0
5 1006	LIMULUNGA	43	20	MANUAL	76	-20	100	49	19	87.1
1000	WESTERN TOTAL	2,070	1,724			-20	228	2,349	1,001	125.9
5 1101	SOLWEZI	1,309	1,000	D, N61	90	0	400	2,092	1,136	745.8
5 1102	KABOMFO	263	128	A, MCR	85	-128	300	420	228	158.8
5 1103	KASEMPA	296	128	A, MCR	85	-128	400	473	257	194.6
0 1104	MUFUMBWE	100	96	A, MCR	85	0	0	160	87	0.0
5 1105	MWINILUNGA	338	128	A, MCR	85	-128	400	540	293	194.6
5 1106	ZAMBEZI	303	128	A, MCR	85	-128	400	484	263	194.6
1100	NORTHWEST TOTAL	2,609	1,608			-512	1,900	4,169	2,264	1,488.5
	ZAMBIA TOTAL	130,516	128,874			-55,758	95,408	221,147	136,266	46,430.6

Table 1-19 Exchange Installation and Expansion Plan (Case 2) (1/4)

PAC NO. NO.	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
				REMOVE	EXPAND					
2 101	LUSAKA TTS	(2,500)	6		(1,200)	(3,700)			1,089.5	
2 101	LUSAKA MAIN		6	0	3,400	3,400			890.4	TMLS
2 101	LUSAKA MAIN	19,500	6	0	10,000	29,500	38,005	27,922	2,273.8	TMLS
2 102	CHELSTON	5,300	7	0	3,700	9,000	10,257	7,568	953.3	
5 103	CHINIKA	2,300	7	0	1,500	3,800	4,373	3,226	580.0	
0 104	EMMASDALE	4,000	7	0	2,500	6,500	7,169	5,456	710.0	
3 105	AIRPORT INT.	500	7	0	300	800	883	652	127.1	
5 106	MAKENI	1,700	7	0	1,200	2,900	3,284	2,423	541.0	
5 107	RIDGEWAY	5,900	7	0	4,000	9,900	11,045	8,405	905.0	
3 108	ROMA	4,400	7	0	3,100	7,500	8,538	6,299	788.0	
3 109	WOODLANDS	9,800	6	0	6,700	16,500	19,000	14,019	1,582.1	
100	LUSAKA M. TOTAL	53,400		0	35,400	89,800	102,554	75,970	10,450.2	
4 201	CHILANGA	1,000	8	0	600	1,600	1,824	1,345	463.0	
5 202	CHIRUNDU	224	8	-224	400	400	703	295	194.7	
0 203	CHISAMBA	256	8	-256	400	400	649	293	194.7	
5 204	CHONGWE	224	8	-224	400	400	363	268	194.7	
3 205	KAFUE	3,900	8	0	2,700	6,600	7,559	5,577	736.0	
5 206	LUANGWA	224	8	-224	400	400	372	274	194.7	
4 207	MUMBWA	400	8	0	200	600	1,098	496	98.4	
5 208	NAMALUNDU GORGE	352	8	-352	400	400	458	338	172.4	
0 209	NAMPUNDWE	96	8	-96	300	200	253	133	98.9	
0 210	SIYONGA	512	8	-512	800	960	1,661	697	301.1	
200	LUSAKA TOTAL	7,188	8	-1,888	6,600	11,900	14,940	9,716	2,648.5	
2 301	KITWE TTS	(1,600)	6		(800)	(2,400)			1,000.9	
2 301	KITWE (TS)		6							
2 301	KITWE		6							TLS
2 301	KITWE	18,700	6	0	15,500	34,200	41,937	29,064	3,604.4	TLS
0 302	CHAMBUSHI	500	8	0	600	1,100	1,271	883	463.0	
5 303	CHILILABOMBWE	2,400	8	0	2,000	4,400	5,299	3,682	645.0	
3 304	CHINGOLA	7,600	6	0	6,300	13,900	16,931	11,763	1,498.3	
0 305	ITIMPI	500	8	0	300	800	904	628	424.0	
0 306	KALULUSHI	3,000	0	0	0	3,000	2,955	2,060	0.0	
3 307	MUFULIRA	6,000	6	0	5,000	11,000	13,374	9,291	1,225.8	
0 308	MINDOLO	3,000	8	0	1,500	4,500	4,992	3,799	580.0	
300	KITWE TOTAL	41,700		0	31,200	72,900	87,673	61,170	9,441.4	

Table 1-19 Exchange Installation and Expansion Plan (Case 2) (2/4)

PAC CODE NO.	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
				REMOVE	EXPA.S					
3 401	NDOLA MAIN	8,800	7	0	8,200	18,000	19,999	15,219	1,895.5	TLS
5 402	IND. NORTH	1,600	7	0	1,300	2,900	3,442	2,391	554.0	
0 403	IND. SOUTH	1,000	7	0	300	1,300	1,538	1,068	424.0	
3 404	KABUSHI	4,000	7	0	3,400	7,400	8,190	6,232	827.0	
5 405	KANSENSHI	2,900	7	0	2,300	5,200	5,796	4,411	684.0	
3 406	NORTH RISE	2,000	7	0	1,600	3,600	4,014	3,054	593.0	
3 407	PAMODZI	2,000	7	0	1,700	3,700	4,081	3,106	606.0	
5 408	MASAITI	224	7	-224	300	300	322	224	158.8	
3 409	LUANSHYA	3,900	7	0	3,100	7,000	8,559	5,946	788.0	
400	NDOLA TOTAL	27,424		-224	22,200	49,400	55,941	41,651	6,531.3	
5 501	MANSA	1,900	8	0	2,800	4,700	10,122	3,993	749.0	TLS
0 502	KAWAMBWA	256	8	-256	700	700	1,509	595	302.2	
5 503	MWENSE	256	8	-256	400	400	684	308	194.5	
5 504	NCHELENGE	500	8	0	600	1,100	2,318	914	463.0	
5 505	SAMFYA	400	8	0	700	1,100	2,166	855	476.0	
500	LUAPULA TOTAL	3,312		-512	5,200	8,000	15,799	6,666	2,184.9	
4 601	CHOMA (TS)		7							
4 601	CHOMA		7							
4 601	CHOMA	2,200	7	0	3,200	5,400	10,864	4,556	801.0	TLS
0 602	GWEMBE	200	7	-200	400	400	627	263	194.6	
5 603	ITEZHI TEZHI	224	7	-224	400	400	632	265	194.6	
4 604	KALONO	600	9	0	800	1,400	2,655	1,113	489.0	
5 605	MAAMBA	500	9	0	700	1,200	2,268	951	476.0	
4 606	HAZABUKA	1,500	9	0	2,000	3,500	6,961	2,919	645.0	
4 607	MONZE	1,300	9	0	1,700	3,000	6,079	2,550	606.0	
5 608	NAKUWALA	256	7	-256	400	400	795	333	194.5	
0 609	PEMBA	300	7	-300	600	600	1,065	476	266.4	
0 610	LIVINGSTONE	5,000	7	0	5,600	10,600	21,381	8,967	1,113.0	TLS
5 611	ZIMBA	100	9	0	100	200	372	156	69.7	
4 612	SESHEKE	100	0	0	0	100	119	49	0.0	
600	SOUTHERN TOTAL	12,280		-880	15,900	27,200	53,818	22,598	5,050.0	

Table 1-19 Exchange Installation and Expansion Plan (Case 2) (3/4)

PAC NO.	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
				REMOVE	EXPAND					
3	701 KASAMA	2,000	9	0	2,700	4,700	8,529	3,970	736.0	TLS
5	702 CHINSALI	300	9	0	400	700	1,273	593	155.8	
5	703 ISOKA	400	9	0	600	1,000	1,678	781	463.0	
0	704 LUWINGU	256	9	-256	500	500	777	362	230.5	
4	705 MBALA	800	9	0	1,100	1,900	3,318	1,544	528.0	
4	706 MPIKA	1,000	9	0	1,300	2,300	4,117	1,916	554.0	
0	707 MPOKOSO	256	9	-256	600	600	965	449	266.4	
5	708 MPULUNGU	300	9	0	400	700	1,004	467	155.8	
0	709 MUNGWI	192	9	-192	400	400	542	265	194.6	
5	710 NAKONDE	400	9	0	500	900	1,512	704	184.5	
4	711 KAPUTA (PROPOSE)	200	9	0	300	500	854	398	127.1	
700	NORTHERN TOTAL	6,104		-704	8,800	14,200	24,569	11,449	3,595.5	
2	801 KABWE	4,400	8	0	3,600	8,000	15,050	6,799	853.0	TLS
0	802 CHIBOMBO	128	8	-128	200	200	274	136	122.9	
0	803 KAPRIMPOSHI	384	8	-384	700	700	1,138	514	302.2	
0	804 MKUSHI	384	8	-384	700	700	1,273	575	302.2	
5	805 MUPEPETWE	100	0	0	0	100	168	76	0.0	
0	806 SERENJE	384	8	-384	700	700	1,188	537	302.2	
5	807 CHALATA	100	0	0	0	100	69	31	0.0	
5	808 KANONA	100	0	0	0	100	59	27	0.0	
800	CENTRAL TOTAL	5,980		-1,280	5,900	10,600	19,219	8,695	1,882.6	
4	901 CHIPATA (TS)		8							
4	901 CHIPATA		8							
4	901 CHIPATA	3,400	8	0	6,100	9,500	19,398	8,054	1,178.0	TLS
4	902 CHADIZA	400	8	0	600	1,000	1,855	770	463.0	
5	903 CHAMA	300	8	0	300	600	1,228	510	127.1	
4	904 KATETE	500	8	0	700	1,200	2,428	1,008	476.0	
0	905 LUNDAZI	384	8	-384	1,200	1,200	2,400	996	371.4	
5	906 MEUWE	224	8	-224	300	300	508	236	158.8	
0	907 NYIMBA	200	8	-200	600	600	1,108	460	266.4	
4	908 PETAUXE	600	8	0	1,000	1,600	3,074	1,276	515.0	
0	909 SINDA	200	8	-200	400	400	776	322	194.6	
900	EASTERN TOTAL	6,208		-1,008	11,200	16,400	32,776	13,632	4,250.3	

Table 1-19 Exchange Installation and Expansion Plan (Case 2) (4/4)

PAC NO.	EXCHANGE NAME	SW. CAPA 2002	PAC NO.	2003-2012		SW. CAPA 2012	DEMAND 2012	SUPPLY 2012	INST. COST (X1000 \$)	REMARKS
				REMOVE	EXPAND					
0 1001	MONGU	1,000	0	0	0	1,000	1,800	739	0.0	TLS
0 1002	KALABO	128	9	-128	200	200	315	129	122.9	
0 1003	KAOMA	256	9	-256	200	200	393	161	122.9	
5 1004	LUKULU	192	9	-192	100	100	207	85	87.1	
0 1005	SENANGA	256	9	-256	300	300	237	176	158.8	
5 1006	LIMULUNGA	100	0	0	0	100	63	26	0.0	
1000	WESTERN TOTAL	1,932		-832	800	1,900	3,015	1,316	491.7	
5 1101	SOLWEZI	1,400	9	0	1,200	2,600	3,789	2,126	541.0	TLS
5 1102	KABOMPO	300	9	0	300	600	761	427	127.1	
5 1103	KASEMPA	400	9	0	200	600	857	481	98.4	
0 1104	MUFUMBWE	96	9	-96	200	200	289	162	122.9	
5 1105	MWINILUNGA	400	9	0	300	700	978	549	127.1	
5 1106	ZAMBEZI	400	9	0	200	600	877	492	98.4	
1100	NORTHWEST TOTAL	2,996		-96	2,400	5,300	7,551	4,237	1,114.8	
	ZAMBIA TOTAL	168,524		-7,524	146,600	307,600	418,855	257,100	47,641.2	



Table 1-20 Transmission System Installation Plan (1/5)

EXCHANGE NAME	DESTINATION	EXISTING CAPACITY				END OF 1ST DECADE (2002)				END OF 2ND DECADE (2012)				REMARKS			
		CIRCUIT	2MB/S	SYSTEM	PRO.	EXPANSION		SYSTEM PRO.	2MB/S	CCT.	EXPANSION		2MB/S		CCT.		
						CCT.	2MB/S				CCT.	2MB/S					
INTS (LUSAKA)	MWEMBESHI STATION	344	12	6G, 960	2	583	20	583	20	155M	6	388	13	971	33	155M	IOR & AOR
LUSAKA (SC)	KITWE (SC)	300	10	6G, 1800	2	896	30	896	30	155M	6	419	14	1315	44	155M	
LUSAKA (SC)	NDOLA (SC)	230	8	6G, 1800	2	1015	34	1015	34	155M	6	418	14	1433	48	155M	
LUSAKA (SC)	SOLWEZI (PC)	55	2	6G, 960	3	114	4	114	4	155M	7	56	2	170	6	155M	
	MONGU (PC)	122	5	6G, 960	4	139	5	139	5	155M	8	19	1	158	6	155M	
	LIVINGSTONE (PC)	140	5	6G, 960	4	300	10	300	10	155M	8	290	10	590	20	155M	
	CHOMA (PC)	100	4	6G, 960	4	213	8	213	8	6G, 960	8	208	15	421	15	155M	
	KABWE (PC)	146	5	6G, 960	2	169	6	169	6	155M	6	86	3	255	9	155M	
	CHIPATA (PC)	91	4	6G, 960	4	192	7	192	7	6G, 960	8	244	15	436	15	155M	
	KASAMA (PC)	73	3	6G, 960	3	134	5	134	5	6G, 960	7	125	8	259	9	155M	
	MANSA (PC)	35	2	2G, 960	4	103	4	103	4	6G, 960	8	108	8	211	8	155M	
LUSAKA (PC, TDM)	CHELSTON (LE)	112	4	800M, 120	2	325	11	325	11	34M	6	193	7	518	18	34M	
	CHINIKA (LE)	188	7	PCM	5	36	2	224	8	PCM	9	262	9	262	9	34M	OF
	EMASDALE (LE)	298	10	PCM	--	--	--	298	10	PCM	7	328	11	328	11	34M	OF
	INT. AIRPORT (LE)	50	2	800M, 120	3	52	2	102	4	800M, 120	7	196	7	196	7	17M	
	MAKENI (LE)	117	4	PCM	5	79	3	196	7	PCM	7	404	14	404	14	34M	OF
	RIDGEWAY (LE)	288	9	Cable	5	6	1	274	10	Cable	7	702	24	702	24	34M	OF
	ROMA (LE)	248	9	PCM	--	--	--	240	8	PCM	7	624	21	624	21	34M	OF
	WOODLANDS (LE)	265	9	PCM	3	251	9	516	18	PCM	7	1010	34	1010	34	34M	OF
	CHILANGA (LE)	42	2	800M, 120	4	60	2	102	4	800M, 120	8	149	5	149	5	34M	
	CHIRUNDU (LE)	11	1	800M, 120	5	14	1	25	1	800M, 120	9	44	2	44	2	34M	
	CHISAMBA (LE)	20	1	800M, 24	--	--	--	20	1	800M, 24	8	44	2	44	2	8M	
	CHONGWE (LE)	10	1	800M, 120	5	19	1	29	1	800M, 120	9	41	2	41	2	8M	
	KAFUE (LE)	90	3	2G, 960	3	281	10	381	13	2G, 960	7	218	20	599	20	155M	
	LUANGWA (LE)	11	1	800M, 120	5	19	1	30	1	800M, 120	9	41	2	41	2	8M	
	MUNBA (LE)	24	1	800M, 120	4	19	1	43	2	800M, 120	8	65	3	65	3	34M	
	NAMALUNDU G (LE)	10	1	2G, 120	5	25	1	35	2	2G, 120	9	48	2	48	2	8M	
	NAMPUNDE (LE)	11	1	900M, 120	--	--	--	11	1	900M, 120	8	25	1	25	1	2M	
	SIAYONGA (LE)	30	1	800M, 120	5	15	1	45	2	800M, 120	8	100	4	100	4	34M	

Table 1-20 Transmission System Installation Plan (2/5)

EXCHANGE NAME	DESTINATION	EXISTING CAPACITY						END OF 1ST DECADE (2002)						END OF 2ND DECADE (2012)						REMARKS		
		CIRCUIT		SYSTEM		EXPANSION		CCT.		2MB/S		SYSTEM		EXPANSION		CCT.		2MB/S			SYSTEM	
		240	8	6G,1800	2	339	12	339	12	339	12	155M	6	132	4	471	16	155M				
KITWE (SC)	NDOLA (SC)	240	8	6G,1800	2	339	12	339	12	339	12	155M	6	132	4	471	16	155M				
KITWE (SC)	SOLWEZI (PC)	62	3	2G,960	3	72	3	72	3	155M	--	--	--	--	81	3	155M					
	LIVINGSTONE (PC)	36	2	6G,960	4	63	3	63	3	155M	8	54	2	117	4	155M						
	KABWE (PC)	70	3	6G,1800	2	79	3	79	3	155M	--	--	--	--	86	3	155M					
	CHIFATA (PC)	20	1	2G,960	4	53	2	53	2	2G,960	8	56	4	109	4	155M						
	KASAMA (PC)	32	2	6G,960	3	71	3	71	3	6G,960	7	48	4	119	4	155M						
	MANSA (PC)	48	2	2G,960	5	59	2	59	2	2G,960	9	46	4	105	4	34M						
	CHOMA (PC)	--	--	--	4	63	3	63	3	155M	8	53	2	116	4	155M						
	MONGU (PC)	--	--	--	5	22	1	22	1	155M	--	--	--	--	26	1	155M					
KITWE (PC)	CHAMBESHI (LE)	120	4	2G,34M	--	--	--	120	4	2G,34M	8	74	3	194	7	2G,34M						
	CHILILABOMBE (LE)	320	11	2G,960	3	20	1	340	12	2G,960	8	20	1	360	12	2G,34M						
	CHINGOLA (LE)	140	5	6G,1800	3	354	12	494	17	155M	7	842	12	842	29	155M						
	ITIMPI (LE)	120	4	2G,34M	--	--	--	120	4	2G,34M	8	51	2	171	6	2G,34M						
	XALULUSHI (LE)	372	13	2G,34M	--	--	--	372	13	2G,34M	9	25	1	397	14	2G,34M						
	MUFULIRA (LE)	160	6	6G,1800	3	358	12	518	18	155M	7	886	12	886	30	155M						
	MINDOLO (LE)	360	12	2G,34M	--	--	--	360	12	2G,34M	8	3	1	363	13	2G,34M						

Table 1-20 Transmission System Installation Plan (3/5)

EXCHANGE NAME	DESTINATION	EXISTING CAPACITY						END OF 1ST DECADE (2002)						END OF 2ND DECADE (2012)						REMARKS							
		CIRCUIT		2MB/S		SYSTEM		EXPANSION		CCT.		2MB/S		SYSTEM		PRO.		EXPANSION			CCT.		2MB/S		SYSTEM		
		NO.	TYPE	NO.	TYPE	NO.	TYPE	PRO.	CCT.	2MB/S	NO.	TYPE	NO.	TYPE	NO.	TYPE	NO.	TYPE	NO.		TYPE	NO.	TYPE	NO.	TYPE	NO.	TYPE
NDOLA (SC)	LIVINGSTONE (PC)	20	1	6G, 960	3	24	1	44	2	155M	7	23	1	67	3	155M											
	KABWE (PC)	28	1	6G, 960	2	7	1	35	2	155M	6	7	1	42	2	155M											
	CHIPATA (PC)	12	1	2G, 960	4	26	1	38	2	6G, 960	8	25	3	63	3	155M											
	KASAWA (PC)	16	1	6G, 960	3	17	1	33	2	2G, 960	7	16	2	49	2	155M											
	MANSA (PC)	23	1	2G, 960	5	12	1	35	2	2G, 960	9	7	2	42	2	155M											
	CHOMA (PC)			6G, 960	4	35	2	35	2	155M	8	34	2	69	3	155M											
	SOLWEZI (PC)			6G, 960	3	15	1	15	1	155M	7	15	1	30	1	155M											
NDOLA (PC)	IND. NORTH (LE)	240	8	PCM	5	58	2	298	10	PCM	7	358	12	358	12	34M	OF										
	IND. SOUTH (LE)	120	4	PCM	--	--	--	120	4	PCM	7	123	5	123	5	34M	OF										
	KABUSHI (LE)	120	4	PCM	3	271	10	391	14	PCM	7	668	23	668	23	34M	OF										
	KANSENSHI (LE)	240	8	PCM	5	36	2	276	10	PCM	7	474	16	474	16	34M	OF										
	NORTHRISE (LE)	240	8	PCM	3	40	2	284	10	PCM	7	332	12	332	12	34M	OF										
	PAMOZI (LE)	120	4	PCM	3	75	3	195	7	PCM	7	334	12	334	12	34M	OF										
	MASAITI (LE)	11	1	900M, 24	5	12	1	23	1	900M, 24	7	33	2	33	2	8M											
	LUANSHA (LE)	40	2	6G, 960	3	210	7	250	9	6G, 960	7	426	15	426	15	155M											
	MANSA (PC)	KAWAMBWE (LE)	20	1	2G, 300	--	--	--	30	1	2G, 300	8	69	3	69	3	34M										
		MWENSE (LE)	13	1	2G, 300	5	12	1	25	1	2G, 300	8	41	2	41	2	34M										
NGCHELENGE (LE)		13	1	2G, 300	5	35	2	49	2	2G, 300	8	97	4	97	4	34M											
SAMFYA (LE)		17	1	2G, 300	5	28	1	47	2	2G, 300	8	92	4	92	4	8M											

Table 1-20 Transmission System Installation Plan (4/5)

EXCHANGE NAME	DESTINATION	EXISTING CAPACITY						END OF 1ST DECADE (2002)						END OF 2ND DECADE (2012)						REMARKS	
		CIRCUIT		2MB/S		SYSTEM		EXPANSION		2MB/S		SYSTEM		EXPANSION		2MB/S		SYSTEM			
		PRO.	CCT.	PRO.	CCT.	PRO.	CCT.	PRO.	CCT.	PRO.	CCT.	PRO.	CCT.	PRO.	CCT.	PRO.	CCT.	PRO.	CCT.		
CHOMA (PC)	GHEMBE (LE)	7	1	450M, 12	--	--	7	1	45M, 12	7	37	2	37	2	37	2	37	2	8M		
	ITEZHITZHI (LE)	11	1	800M, 120	5	10	1	21	1	800M, 120	7	37	2	37	2	37	2	37	2	8M	
	KALOMO (LE)	27	1	6C, 960	4	31	2	58	2	6C, 960	8	115	4	115	4	115	4	115	4	155M	
	MAMBABA (LE)	13	1	800M, 120	5	39	2	52	2	800M, 120	9	100	4	100	4	100	4	100	4	17M	
	MAZABUKU (LE)	24	1	6C, 960	4	105	4	129	5	6C, 960	8	279	10	279	10	279	10	279	10	155M	
	MONZE (LE)	32	2	6C, 960	4	83	3	115	4	6C, 960	9	244	9	244	9	244	9	244	9	155M	
	NAMWALA (LE)	11	1	800M, 120	5	14	1	25	1	800M, 120	9	37	2	37	2	37	2	37	2	34M	
	PEMBA (LE)	12	1	800M, 120	--	--	12	1	800M, 120	7	58	2	58	2	58	2	58	2	8M		
LIVINGSTONE (PC)	ZIMBA (M)	--	--	--	5	17	1	17	1	34M	8	9	1	26	1	26	1	26	1	34M	
	SESHEKE (M, LE)	--	--	--	4	24	1	24	1	34M	--	--	--	24	1	24	1	24	1	34M	
KASAMA (PC)	CHINSALI (LE)	15	1	800M, 120	5	12	1	27	1	800M, 120	9	58	2	58	2	58	2	58	2	34M	
	ISOXA (LE)	18	1	800M, 120	5	28	1	46	2	800M, 120	9	85	3	85	3	85	3	85	3	34M	
	LWINGU (LE)	17	1	2C, 960	--	--	17	1	2C, 960	9	46	2	46	2	46	2	46	2	46	2	34M
	MBALA (LE)	22	1	2C, 960	4	57	2	79	3	2C, 960	9	152	6	152	6	152	6	152	6	34M	
	MPIKA (LE)	35	2	6C, 960	4	59	2	94	4	6C, 960	9	184	7	184	7	184	7	184	7	155M	
	MPOROKOSO (LE)	18	1	2C, 300	--	--	18	1	2C, 300	9	54	2	54	2	54	2	54	2	54	2	34M
	MPULUNGU (LE)	9	1	2C, 300	5	22	1	31	2	2C, 300	9	56	2	56	2	56	2	56	2	34M	
	MUNGUJ (LE)	10	1	400M, 24	--	--	24	1	400M, 24	9	37	2	37	2	37	2	37	2	37	2	34M
	NAKONDE (LE)	12	1	6C, 960	5	11	1	23	1	6C, 960	9	79	3	79	3	79	3	79	3	155M	
	KAPUTA (LE)	1	1	R/T	4	29	1	29	1	34M	9	21	1	50	2	50	2	50	2	34M	
KABWE (PC)	CHIBOMBO (LE)	13	1	900M, 24	--	--	13	1	900M, 24	8	23	1	23	1	23	1	23	1	23	1	2M
	KAPIRI MPOSHI (LE)	43	2	800M, 120	--	--	43	2	800M, 120	8	61	3	61	3	61	3	61	3	61	3	8M
	MKUSHI (LE)	36	2	800M, 120	--	--	36	2	800M, 120	8	67	3	67	3	67	3	67	3	67	3	8M
	MUPEPETWE (LE)	12	1	450M, 24	--	--	12	1	450M, 24	9	17	1	17	1	17	1	17	1	17	1	2M
	SERENJE (LE)	23	1	800M, 120	--	--	23	1	800M, 120	8	63	3	63	3	63	3	63	3	63	3	8M
	CHALATA (M, LE)	1	1	R/T	5	9	1	9	1	2M	9	1	10	1	10	1	10	1	10	1	2M
	KANONA (M, LE)	1	1	R/T	5	9	1	9	1	2M	9	1	10	1	10	1	10	1	10	1	2M

Table 1-20 Transmission System Installation Plan (5/5)

EXCHANGE NAME	DESTINATION	EXISTING CAPACITY					END OF 1ST DECADE (2002)					END OF 2ND DECADE (2012)					REMARKS				
		CIRCUIT	2MB/S	SYSTEM	PRO.	CCT.	2MB/S	SYSTEM	PRO.	CCT.	2MB/S	SYSTEM	PRO.	CCT.	2MB/S	SYSTEM		2MB/S	CCT.	2MB/S	SYSTEM
CHIPATA (PC)	(LE)	10	1	400M, 24	4	39	2	39	2	400M, 24	8	45	3	84	3	8M					
	(LE)	13	1	2G, 300	5	16	1	29	1	2G, 300	9	60	2	60	2	8M					
	(LE)	22	1	2G, 960	4	26	1	48	2	2G, 960	8	106	4	106	4	8M					
	(LE)	27	1	2G, 960	--	--	--	27	1	2G, 960	8	104	4	104	4	8M					
	(LE)	11	1	2G, 300	5	10	1	21	1	2G, 300	8	35	2	35	2	8M					
	(LE)	10	1	400M, 24	4	27	1	27	1	400M, 24	8	56	2	56	2	8M					
MONGU (PC)	(LE)	22	1	2G, 960	4	36	2	58	2	2G, 960	8	129	5	129	5	34M					
	(LE)	10	1	400M, 24	--	--	--	10	1	400M, 24	8	31	2	41	2	8M					
	(LE)	13	1	800M, 120	--	--	--	13	1	800M, 120	9	23	1	23	1	2M					
	(LE)	14	1	6G, 960	--	--	--	14	1	6G, 960	9	27	1	27	1	34M					
SOLWEZI (PC)	(LE)	12	1	800M, 120	5	4	1	16	1	800M, 120	9	17	1	17	1	34M					
	(LE)	16	1	2G, 300	5	9	1	25	1	2G, 300	9	28	1	28	1	34M					
	(LE)	1	1	R/T	5	11	1	11	1	34M	--	--	--	11	1	34M					
	(LE)	13	1	2G, 300	5	22	1	35	2	2G, 300	8	83	3	83	3	34M					
	(LE)	13	1	2G, 300	5	25	1	38	2	2G, 300	8	92	4	92	4	34M					
MURUMBWE (LE)	(LE)	11	1	2G, 300	--	--	--	11	1	2G, 300	8	30	1	30	1	2M					
	(LE)	13	1	2G, 300	5	17	1	30	1	2G, 300	8	86	3	86	3	34M					
	(LE)	13	1	2G, 300	5	14	1	27	1	2G, 300	8	78	3	78	3	34M					



**SUPPORTING 2**

**PROJECT DIGEST  
(CASE 2)**





## Project Digest

1. **Project Title** : Package 1 (Urgent Program)
2. **Location** : Whole country
3. **Project Description**

Prior to starting major projects in the long-term development program, solving the imminent problems is required.

The imminent problems are;

- Program 1. Enhancement of external plant maintenance, elimination of waiting subscribers and subscriber's claim management  
External Plant: Local Cable 6,700 Pairs
- Program 2. Improvement in collection of charge, strengthening billing performance
- Program 3. Rehabilitation of existing vehicles, reviewing of criteria for vehicle replacement

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Program 1.	2.60	2.71
Program 2.	0.38	—
Program 3.	0.33	0.98
<b>TOTAL</b>	<b>3.31</b>	<b>3.69</b>
<b>GRAND TOTAL</b>	<b>7.00</b>	

5. **Implementation Time Schedule**

1994 - 1995 (24 Months)

6. **Target**

- Program 1. - Additional 18,222 Subscribers line
- Program 2. - Enhancement of charge collection rate to 70%
- Full utilization of national billing network system
- Program 3. - Improvement vehicle utilization rate to 70%

## Project Digest

1. **Project Title** : Package 2
2. **Location** : Lusaka, Kitwe and Kabwe  
(Exchange Name)
3. **Project Description**

Switching System

Expansion	:	Local	29,900 L.U.
		Trunk	4,800 L.U.
Removal	:	Local	31,000 L.U.
		Trunk	1,200 L.U.

Telex Switching System : Kitwe Exchange  
Local & Trunk 4,500 L.U.

Transmission System : Microwave System  
359 Sys, 5 Sec, 14 Hops

External Plant : Local Cable 10,200 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	12.28	1.51
Transmission System	21.28	2.90
External Plant	4.74	2.91
Telex	2.19	0.27
Consultant Fee	2.40	—
<b>TOTAL</b>	<b>42.89</b>	<b>7.59</b>
<b>GRAND TOTAL</b>	<b>50.48</b>	

5. **Implementation Time Schedule**

1995 - 1997 (36 Months)

6. **Extimated Subscriber Increaseament**

8,854 Subscribers

## Project Digest

1. **Project Title** : Package 3
2. **Location** : Airport Int., Roma, Woodland, Kafwe, Chingola, Mufulira,  
(Exchange Name) Ndola Main, Kabushi, North Rise, Pamozi, Luanshya,  
Kasama

3. **Project Description**

Switching System

Expansion : Local 39,400 L.U.  
Removal : Local 13,012 L.U.

Transmission System : Microwave System  
440 Sys, 14 Sec, 14 Hops

External Plant : Local Cable 26,500 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	11.79	1.46
Transmission System	23.91	3.24
External Plant	12.33	7.55
Consultant Fee	3.01	—
<b>TOTAL</b>	<b>51.04</b>	<b>12.25</b>
<b>GRAND TOTAL</b>	<b>63.29</b>	

5. **Implementation Time Schedule**

1997 - 1999 (24 Months)

6. **Estimated Additional Number of Subscriber**

19,993 Subscribers

## Project Digest

1. **Project Title** : Package 4
2. **Location** : Chilanga, Mumbwa, Choma, Kalomo, Mazabuka, Monze,  
(Exchange Name) Seshcke, Mbala, Mpika, Kaputa, Chipata, Chadiza,  
Ketete, Petauke

3. **Project Description**

Switching System

Expansion : Local 14,000 L.U.  
Removal : Local 8,726 L.U.  
Trunk 800 L.U.

Transmission System : Microwave System  
328 Sys, 16 Sec, 48 Hops

External Plant : Local Cable 4,600 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	8.91	1.10
Transmission System	15.41	2.10
External Plant	2.14	1.31
Consultant Fee	1.54	—
<b>TOTAL</b>	<b>28.00</b>	<b>4.51</b>
<b>GRAND TOTAL</b>	<b>32.51</b>	

5. **Implementation Time Schedule**

1999 - 2000 (24 Months)

6. **Estimated Additional Number of Subscriber**

5,080 Subscribers

## Project Digest

1. **Project Title** : Package 5
2. **Location** : Chilanga, Makeni, Ridgeway, Chirundu, Chongwe,  
(Exchange Name) Luangwa, Namalundu, Chililabombwe, Ind. North,  
Kansenshi, Masaiti, Mansa, Mwensek, Nchelenge,  
Samfya, Itezhi Tezhi, Maamba, Namuwala, Zimba,  
Chinsali, Isoka, Mpulungu, Nakonde, Mupepetwe,  
Chalata, Kanona, Chama, Mfuwe, Lukulu, Limulunga,  
Solwezi, Kabompo, Kasempa, Mwinilunga, Zambezi
3. **Project Description**

Switching System

Expansion : Local 12,108 L.U.  
Removal : Local 3,020 L.U.

Transmission System : Microwave System  
213 Sys, 34 Sec, 66 Hops

External Plant : Local Cable 9,900 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	8.35	1.04
Transmission System	15.06	2.47
External Plant	4.60	2.82
Consultant Fee	1.72	—
<b>TOTAL</b>	<b>29.73</b>	<b>6.33</b>
<b>GRAND TOTAL</b>	<b>36.06</b>	

5. **Implementation Time Schedule**

2000 - 2001 (24 Months)

6. **Estimated Additional Number of Subscriber**

7,897 Subscribers

## Project Digest

1. **Project Title** : Package 6
2. **Location** : Lusaka, Woodland, Kitwe, Chingola, Mufulira  
(Exchange Name)
3. **Project Description**

Switching System

Expansion : Local 46,900 L.U.  
Removal : Local 2,800 L.U.

Telex Switching System : Kitwe Exchange  
Local & Trunk 800 L.U.

Transmission System : Microwave System  
165 Sys, 5 Sec, 16 Hops

External Plant : Local Cable 43,300 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	11.73	1.45
Transmission System	19.91	2.71
External Plant	20.14	12.34
Telex	0.38	0.06
Public Telephone	0.48	0.72
Consultant Fee	3.43	—
<b>TOTAL</b>	<b>56.07</b>	<b>17.28</b>
<b>GRAND TOTAL</b>	<b>73.35</b>	

5. **Implementation Time Schedule**

2003 - 2004 (24 Months)

6. **Estimated Additional Number of Subscriber**

39,840 Subscribers

## Project Digest

1. **Project Title** : Package 7
2. **Location** : Chelstone, Chinika, Emmasdale, Airport Int., Makeni,  
(Exchange Name) Ridgeway, Roma, Ndola Main, Ind. North, Ind. South,  
Kabushi, Kansenshi, North Rise, Pamozi, Masaiti,  
Luanshya, Choma, Gwembe, Itezhi Tezhi, Namuwala,  
Pemba, Livingstone

3. **Project Description**

Switching System

Expansion : Local 49,100 L.U.  
Removal : Local 1,204 L.U.

Transmission System : Microwave System  
44 Sys, 16 Sec, 26 Hops

External Plant : Local Cable 48,500 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	12.37	1.53
Transmission System	22.59	3.08
External Plant	22.55	13.82
Public Telephone	0.45	0.69
Consultant Fee	3.80	—
<b>TOTAL</b>	<b>61.76</b>	<b>19.12</b>
<b>GRAND TOTAL</b>		<b>80.88</b>

5. **Implementation Time Schedule**

2005 - 2006 (24 Months)

6. **Estimated Additional Number of Subscriber**

41,528 Subscribers

## Project Digest

1. **Project Title** : Package 8
2. **Location** : Chilanga, Chirundu, Chisamba, Chongwe, Kafue,  
(Exchange Name) Luangwa, Mungwa, Nmalundu, Nampundwe, Siavonga,  
Chambishi, Chililabombwe, Itimpi, Mindolo, Mansa,  
Kawambwa, Mwense, Nchelenge, Samfa, Kabwe,  
Chibombo, Kapirimposhi, Mkushi, Serenje, Chipata,  
Chadiza, Chama, Katete, Lundazi, Mfuwe, Nyimba,  
Petauke, Sinda

3. **Project Description**

Switching System

- Expansion : Local 33,300 L.U.  
Removal : Local 4,688 L.U.

- Transmission System : Microwave System  
108 Sys, 22 Sec, 73 Hops

- External Plant : Local Cable 20,600 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	11.75	1.45
Transmission System	21.39	2.91
External Plant	9.58	5.87
Public Telephone	0.21	0.32
Consultant Fee	2.64	—
<b>TOTAL</b>	<b>45.57</b>	<b>10.55</b>
<b>GRAND TOTAL</b>	<b>56.12</b>	

5. **Implementation Time Schedule**

2007 - 2008 (24 Months)

6. **Estimated Additional Number of Subscriber**

25,076 Subscribers



## Project Digest

1. **Project Title** : Package 9
2. **Location** : Kalomo, Maamba, Mazabuka, Monze, Zimba, Kasama,  
(Exchange Name) Chinsali, Isoka, Luwingu, Mbala, Mpika, Mporokoso,  
Mpulungu, Mungwi, Nakonde, Kapta, Kalabo, Kaoma,  
Lukulu, Senanga, Solwezi, Kabompo, Kasempa,  
Mufumbwe, Mwinilunga, Zambezi
3. **Project Description**  
  
Switching System  
  
Expansion : Local 17,300 L.U.  
Removal : Local 1,632 L.U.  
  
Transmission System : Microwave System  
78 Sys, 18 Sec, 83 Hops  
  
External Plant : Local Cable 20,600 Pairs

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Switching System	6.66	0.82
Transmission System	12.14	1.66
External Plant	6.37	3.91
Public Telephone	0.10	0.16
Consultant Fee	1.58	—
<b>TOTAL</b>	<b>26.85</b>	<b>6.55</b>
<b>GRAND TOTAL</b>		<b>33.40</b>

5. **Implementation Time Schedule**  
  
2009 - 2010 (24 Months)
6. **Estimated Additional Number of Subscriber**  
  
25,076 Subscribers

## Project Digest

- 1. Project Title** : Package 10  
(Rural Telecommunication)
- 2. Location** : Lusaka Metro, Lusaka Province,  
Copperbelt Province,  
Luapula Province,  
Northern Province,  
Central Province

- 3. Project Description**

External Plant

MARS + Cable : 677 Sub  
MARS + Single Radio : 2,579 Sub

- 4. Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
External Plant	15.71	3.94
Consultant Fee	0.98	—
<b>TOTAL</b>	<b>16.69</b>	<b>3.94</b>
<b>GRAND TOTAL</b>		<b>20.63</b>

- 5. Implementation Time Schedule**

1995 - 1996 (24 Months)

- 6. Estimated Additional Number of Subscriber**

3,256 Subscribers

## Project Digest

1. **Project Title** : Package 11  
(Rural Telecommunication)

2. **Location** : Southern Province  
Eastern Province  
Western Province  
Northwestern Province

3. **Project Description**

External Plant

MARS + Cable : 640 Sub  
MARS + Single Radio : 2,481 Sub

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
External Plant	14.73	3.68
Consultant Fee	0.92	—
<b>TOTAL</b>	<b>15.65</b>	<b>3.68</b>
<b>GRAND TOTAL</b>		<b>19.33</b>

5. **Implementation Time Schedule**

1997 - 1998 (24 Months)

6. **Estimated Additional Number of Subscriber**

3,121 Subscribers

## Project Digest

1. **Project Title** : Package 12  
(Rural Telecommunication)
2. **Location** : Lusaka Metro, Lusaka Province,  
Copperbelt Province,  
Luapula Province,  
Northern Province,  
Central Province

3. **Project Description**

External Plant

MARS + Cable : 574 Sub  
MARS + Single Radio : 2,298 Sub

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
External Plant	13.17	3.28
Public Telephone	0.02	0.02
Consultant Fee	0.82	—
<b>TOTAL</b>	<b>14.01</b>	<b>3.30</b>
<b>GRAND TOTAL</b>		<b>17.31</b>

5. **Implementation Time Schedule**

2005 - 2006 (24 Months)

6. **Estimated Additional Number of Subscriber**

2,872 Subscribers

## Project Digest

1. **Project Title** : Package 13  
(Rural Telecommunication)

2. **Location** : Southern Province  
Eastern Province  
Western Province  
Northwestern Province

3. **Project Description**

External Plant

MARS + Cable : 743 Sub  
MARS + Single Radio : 2,971 Sub

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
External Plant	16.95	4.24
Public Telephone	0.02	0.03
Consultant Fee	1.06	—
<b>TOTAL</b>	<b>18.03</b>	<b>4.27</b>
<b>GRAND TOTAL</b>	<b>22.30</b>	

5. **Implementation Time Schedule**

2007 - 2008 (24 Months)

6. **Estimated Additional Number of Subscriber**

3,714 Subscribers

## Project Digest

1. **Project Title** : Package 14  
[Establishment of External Plant Maintenance Centers (EMPC) (1)]

2. **Location** : Lusaka, Kitwe

3. **Project Description**

The operation and maintenance work of the external plants in the areas covered by the above EPMCs is modernized and the maintenance of the external plants is improved through functions of the EPMC.

External Plant : Local Cable 74,400 Pairs in Lusaka  
(1997) 51,000 Pairs in Kitwe  
33,900 Pairs in Ndola

Supporting : To be provided in Lusaka Ex.  
(Building, Land) To be provided in Kitwe Ex.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
EPMC	0.65	0.08
Supporting	1.23	0.41
Consultant Fee	0.91	0.41
<b>TOTAL</b>	<b>2.79</b>	<b>0.90</b>
<b>GRAND TOTAL</b>		<b>3.69</b>

5. **Implementation Time Schedule**

1996 - 1997 (18 Months)

6. **Improvement of Maintenance**

Faults/Line/Year : 0.5 in 2002  
Maintenance Efficiency : 95.0% in 2002

## Project Digest

1. **Project Title** : Package 15  
[Establishment of External Plant Maintenance Centers (EMPC) (2)]

2. **Location** : Choma, Chipata, Kasama

3. **Project Description**

The operation and maintenance work of the external plants in the areas covered by the above EPMCs is modernized and the maintenance of the external plants is improved through functions of the EPMC.

External Plant : Local Cable 24,700 Pairs in Choma  
(2012) 15,000 Pairs in Chipata  
13,500 Pairs in Kasama

Supporting : To be provided in Choma Ex.  
(Building, Land) To be provided in Chipata Ex.  
To be provided in Kasama Ex.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
EPMC	1.00	0.13
Supporting	1.85	0.61
<b>TOTAL</b>	<b>2.85</b>	<b>0.74</b>
<b>GRAND TOTAL</b>		<b>3.59</b>

5. **Implementation Time Schedule**

2009 - 2010 (18 Months)

6. **Improvement of Maintenance**

Faults/Line/Year : 0.2 in 2012  
Maintenance Efficiency : 99.0% in 2012

## Project Digest

1. **Project Title** : Package 16  
(Establishment of Network Management System)
2. **Location** : Lusaka  
(Exchange Name)

3. **Project Description**

Centralized network management system is introduced to realize efficient nationwide management of network. The management integrated is for performances, faults, configurations, accounting and security. For the centralized network management, the network management center is provided in Lusaka. Supporting facilities are assumed to be provided in Lusaka Exchange and in Lusaka microwave maintenance center.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
NMC	3.20	0.13
Consultant Fee	0.17	—
<b>TOTAL</b>	<b>3.37</b>	<b>0.13</b>
<b>GRAND TOTAL</b>		<b>3.50</b>

5. **Implementation Time Schedule**

2003 - 2004 (24 Months)

6. **Improvement of Operation and Maintenance**

Staff efficiency : 22 staff/1000DEL in 2002

Availability : 99.9% microwave sys, Earth station, carrier system, Telex



## Project Digest

1. **Project Title** : Package 17  
(Strengthening of Motor Vehicle Fleet)
2. **Location** : Whole country
3. **Project Description**

Telecommunication Division owns 602 vehicles as of the end of Sept. 1992, however, only approx. 55% of them is utilizable, and the causes of non-runners are mostly due to shortage of spairs. Shortage of foreign currency reserve in Zambia also has imposed restriction to procurement of vehicles. Lack of vehicles will affect the operation and maintenance of the telecommunication network adversely.

To strengthen the motor vehicle fleet, new vehicles as given below are to be procured and delivered with necessary spares.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
300 vehicles pickups, station wagons, panel vans, trucks, cars, buses, inclusive	4.50	—
<b>TOTAL</b>	4.50	—
<b>GRAND TOTAL</b>	4.50	

5. **Implementation Time Schedule**

1997 (12 Months)

6. **Improvement Expected**

Utilization rate of vehicles is improved leading to enhancement of maintenance

## Project Digest

1. **Project Title** : Package 18  
(Strengthening of Motor Vehicle Fleet)
2. **Location** : Whole country
3. **Project Description**

Telecommunication Division owns 602 vehicles as of the end of Sept. 1992, however, only approx. 55% of them is utilizable, and the causes of non-runners are mostly due to shortage of spairs. Shortage of foreign currency reserve in Zambia also has imposed restriction to procurement of vehicles. Lack of vehicles will affect the operation and maintenance of the telecommunication network adversely.

To strengthen the motor vehicle fleet, new vehicles as given below are to be procured and delivered with necessary spares.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
300 vehicles pickups, station wagons, panel vans, trucks, cars, buses, inclusive	4.50	—
TOTAL	4.50	—
GRAND TOTAL		4.50

5. **Implementation Time Schedule**

2002 (12 Months)

6. **Improvement Expected**

Utilization rate of vehicles is improved leading to enhancement of maintenance

## Project Digest

1. **Project Title** : Package 19  
(Strengthening of Motor Vehicle Fleet)
2. **Location** : Whole country
3. **Project Description**

Telecommunication Division owns 602 vehicles as of the end of Sept. 1992, however, only approx. 55% of them is utilizable, and the causes of non-runners are mostly due to shortage of spairs. Shortage of foreign currency reserve in Zambia also has imposed restriction to procurement of vehicles. Lack of vehicles will affect the operation and maintenance of the telecommunication network adversely.

To strengthen the motor vehicle fleet, new vehicles as given below are to be procured and delivered with necessary spares.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
430 vehicles pickups, station wagons, panel vans, trucks, cars, buses, inclusive	6.50	—
TOTAL	6.50	—
GRAND TOTAL		6.50

5. **Implementation Time Schedule**

2007 (12 Months)

6. **Improvement Expected**

Utilization rate of vehicles is improved leading to enhancement of maintenance

## Project Digest

1. **Project Title** : Package 20  
(Strengthening of Motor Vehicle Fleet)
2. **Location** : Whole country
3. **Project Description**

Telecommunication Division owns 602 vehicles as of the end of Sept. 1992, however, only approx. 55% of them is utilizable, and the causes of non-runners are mostly due to shortage of spairs. Shortage of foreign currency reserve in Zambia also has imposed restriction to procurement of vehicles. Lack of vehicles will affect the operation and maintenance of the telecommunication network adversely.

To strengthen the motor vehicle fleet, new vehicles as given below are to be procured and delivered with necessary spares.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
430 vehicles pickups, station wagons, panel vans, trucks, cars, buses, inclusive	6.50	—
<b>TOTAL</b>	6.50	—
<b>GRAND TOTAL</b>		6.50

5. **Implementation Time Schedule**

2011 (12 Months)

6. **Improvement Expected**

Utilization rate of vehicles is improved leading to enhancement of maintenance

## Project Digest

1. **Project Title** : Package 21  
(Modernization of Routine Office  
Work by Personal Computers (PC))

2. **Location** : Headquarters

3. **Project Description**

For modernization of the headquarters office work, 30 sets of PC are provided.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Personal Computers with Peripherals equipment and software	0.24	0.01
<b>TOTAL</b>	0.24	0.01
<b>GRAND TOTAL</b>		0.25

5. **Implementation Time Schedule**

2004 (12 Months)

6. **Improvement of Staff Efficiency**

22 staff/1000DEL in 2012

## Project Digest

1. **Project Title** : Package 22  
(Modernization of Routine Office  
Work by Main Frame and Personal Computers)

2. **Location**

Main Frame Computer : Lusaka and Ndola  
Personal Computer (PC) : Headquarters

3. **Project Description**

For improving administrative and billing data processing two sets of main frame computers are provided to replace the old ICL computers. In addition to this, 30 sets of PC with necessary softwares are provided for daily work in finance, engineering planning, human resources management.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Main frame computer	0.94	0.05
Personal computers with Peripheral equipment and software	0.24	0.01
TOTAL	1.18	0.06
GRAND TOTAL		1.24

5. **Implementation Time Schedule**

1996 (12 Months)

6. **Improvement Expected**

Large amount of administrative and billing data can be processed efficiently to contribute to enhance the staff efficiency and to improve collection rate of telephone charges.

## Project Digest

1. **Project Title** : Package 23 (Earth Station)
2. **Location** : Mwembeshi I, Earth Station  
(Exchange Name)
3. **Project Description**

Earth Station:

Replacement of Satellite telecommunications equipment includes antenna, power system and other equipment for digitalization

Transmission System: 28 Sys, 1 Sec, 1 Hops

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Earth Station	15.16	—
Supporting	—	—
Consultant Fee	0.06	—
<b>TOTAL</b>	<b>15.22</b>	<b>—</b>
<b>GRAND TOTAL</b>		<b>15.22</b>

5. **Implementation Time Schedule**

1997 - 1999 (24 Months)

## Project Digest

1. **Project Title** : Package 24 (Public Call Office)
2. **Location** : Whole of Zambia
3. **Project Description**

Public Call Office:

This project is to provide additional Public Call Office (PCO) services. Installation work of these PCOs should be carried out in the area project package for convenience therefore, the cost is distributed to respective area project packages.

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Public Call Office	1.29	1.93
TOTAL	1.29	1.93
GRAND TOTAL		3.22

5. **Implementation Time Schedule**

2003 - 2010 (7 Years)

6. **Estimated Additional Number of Subscriber**

1,770 Public Call Offices



## Project Digest

1. **Project Title** : Package 25  
(Mobile Communication System)

2. **Location** : Lusaka

3. **Project Description**

Mobile System:

Mobile Switching : Lusaka  
Center (MSC) (with Gateway to PSTN and  
Mobile Control Station (MCS))

Base Station : 8 sites  
Subscriber (Spare) : 1,000 (100) sets

Supporting : To be prepared for 8 base stations  
(Land & Building)

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Mobile System	8.02	0.11
Supporting	—	0.80
Consultant Fee	0.41	—
<b>TOTAL</b>	<b>8.43</b>	<b>0.91</b>
<b>GRAND TOTAL</b>	<b>9.34</b>	

5. **Implementation Time Schedule**

2000 - 2001 (24 Months)

6. **Estimated Additional Number of Subscriber**

1,000 Mobile Subscribers

## Project Digest

1. **Project Title** : Package 26  
(Mobile Communication System)
2. **Location** : Kitwe, Ndola,  
Load between Kitwe and Ndola

3. **Project Description**

Mobile System:

- Mobile Switching Center (MSC) : Kitwe  
(with Gateway to PSTN and Mobile Control Station (MCS))
- Base Station : 4 (Kitwe), 3 (Ndola)  
3 (Load Kitwe - Ndola)
- Subscriber (Spare) : 1,300 (130) - Kitwe  
600 (60) - Ndola

Supporting (Land & Building) : To be prepared for 10 base stations

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Mobile System	10.53	0.13
Supporting Consultant Fee	—	1.00
	0.53	—
<b>TOTAL</b>	<b>11.06</b>	<b>1.13</b>
<b>GRAND TOTAL</b>		<b>12.19</b>

5. **Implementation Time Schedule**

2004 - 2006 (24 Months)

6. **Estimated Additional Number of Subscriber**

1,900 Mobile Subscribers

## Project Digest

1. **Project Title** : Package 27  
(Mobile Communication System)

2. **Location** : Lusaka, Kitwe and Ndola

3. **Project Description**

Mobile System:

Subscriber (Spare) : 700 (70) - Lusaka  
900 (90) - Kutwe  
400 (40) - Ndola

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Mobile System	4.49	0.03
Supporting	0.23	—
TOTAL	4.72	0.03
GRAND TOTAL		4.75

5. **Implementation Time Schedule**

2006 - 2008 (24 Months)

6. **Estimated Additional Number of Subscriber**

2,000 Subscribers

## Project Digest

1. **Project Title** : Package 28  
(Mobile Communication System)
2. **Location** : Road among Lusaka, Kitwe and Ndola

3. **Project Description**

Mobile System:

Base Station : 20 sites

Supporting (Land & Building) : To be prepared for 20 base stations

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Mobile System	12.93	0.46
Supporting	—	2.00
Consultant Fee	0.67	—
<b>TOTAL</b>	<b>13.60</b>	<b>2.46</b>
<b>GRAND TOTAL</b>		<b>16.06</b>

5. **Implementation Time Schedule**

2010 - 2011 (24 Months)

6. **Expansion of Service Area**

In addition to the three cities (Lusaka, Kitwe and Ndola), the mobile communication system will be in operation along the roads connecting Lusaka, Kitwe and Ndola.

## Project Digest

1. **Project Title** : Package 29  
(Radio-Paging System)

2. **Location** : Lusaka

3. **Project Description**

Radio-Paging System:

Radio-Paging Switching : 1 unit (Lusaka Exchange)  
Transmitter : 15 units  
Subscriber : 6,615 sets  
(including spares)

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Radio-Paging System	3.70	0.65
Consultant Fee	0.22	—
<b>TOTAL</b>	<b>3.92</b>	<b>0.65</b>
<b>GRAND TOTAL</b>		<b>4.57</b>

5. **Implementation Time Schedule**

2000 - 2001 (18 Months)

6. **Estimated Additional Number of Radio-Paging Subscriber**

6,615 Subscribers

## Project Digest

1. **Project Title** : Package 30  
(Radio-Paging System)

2. **Location** : Kitwe and Ndola

3. **Project Description**

Radio-Paging System:

Radio-Paging Switching : 1 unit (Kitwe Exchange)

Transmitter : 8 units (Kitwe)

5 units (Ndola)

Subscriber : 12,285 sets  
(including spares)

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Radio-Paging System	3.64	0.65
Consultant Fee	0.21	—
<b>TOTAL</b>	<b>3.85</b>	<b>0.65</b>
<b>GRAND TOTAL</b>		<b>4.50</b>

5. **Implementation Time Schedule**

2008 - 2009 (18 Months)

6. **Estimated Additional Number of Radio-Paging Subscriber**

12,285 Subscribers

## Project Digest

1. **Project Title** : Package 31  
(Packet System)
2. **Location** : Lusaka and Kitwe
3. **Project Description**

### Packet System

Packet Switching (PS) : 2 sys.  
Lusaka, Kitwe Exchange  
(This function will be installed and digital exchange.)  
Total Subscribers : 1,515 sets  
(Data Terminal Equipment)

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Packet System	3.24	0.70
Consultant Fee	0.20	—
<b>TOTAL</b>	<b>3.44</b>	<b>0.70</b>
<b>GRAND TOTAL</b>	<b>4.14</b>	

5. **Implementation Time Schedule**

2000 - 2001 (18 Months)

6. **Estimated Additional Number of Radio-Paging Subscriber**

Lusaka	650,	Kitwe	285	
Ndola	285	(To be connected Kitwe Exchange)		
Kabwe	55	(To be connected Lusaka Exchange)		
L/S	100	(To be connected Lusaka Exchange)		
Chingola	140	(To be connected Lusaka Exchange)		

## Project Digest

1. **Project Title** : Package 32  
(Packet System)
2. **Location** : Lusaka and Kitwe
3. **Project Description**

Packet System

Total Subscribers : 2,410 sets  
(Data Terminal Equipment)

4. **Project Cost**

(US\$ Million)

Sub System	Foreign Cost	Local Cost
Packet System	2.10	0.12
Consultant Fee	0.11	—
<b>TOTAL</b>		<b>2.33</b>

5. **Implementation Time Schedule**

2010 - 2011 (18 Months)

6. **Estimated Additional Number of Radio-Paging Subscriber**

Lusaka	800,	Kitwe	380
Ndola	380	(To be connected Kitwe Exchange)	
Kabwe	120	(To be connected Lusaka Exchange)	
L/S	80	(To be connected Lusaka Exchange)	
Chingola	160	(To be connected Lusaka Exchange)	
Choma	60	(To be connected Lusaka Exchange)	
Chipata	190	(To be connected Lusaka Exchange)	
Mansa	50	(To be connected Kitwe Exchange)	
Kasama	130	(To be connected Kitwe Exchange)	
Solwezi	40	(To be connected Kitwe Exchange)	
Mongu	20	(To be connected Lusaka Exchange)	





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