

Table 3.3.5 Livestock and Agriculture Improvement with ICT Supports and Desirable Phased Introduction

Sector Service	Issues	ICT Support Needs	ICT Support Measure	Introduction Phasing		
				Short	Medium	Long
Agri-business Management	<ul style="list-style-type: none"> To improve lack of prompt agri-business information (market, technology, and consumer, etc) 	<ul style="list-style-type: none"> Necessity of effectuating prompt and secure information about market trend, price, and new technology 	<ul style="list-style-type: none"> Telecommunication by voice service, web-service, e-mail 	○	●	
			<ul style="list-style-type: none"> Experts consultation by telephone / fax 	○	●	
	<ul style="list-style-type: none"> To improve producer's skill and technical knowledge to manage agri-business 	<ul style="list-style-type: none"> Necessity of offering adequate, current and forehanded advises and consultation for agri-business 	<ul style="list-style-type: none"> Consultation by as still and motion pictures by E-mail, fax, telephone 	○	◎	●
	<ul style="list-style-type: none"> To reform lack and insufficient promotion system to consumers 	<ul style="list-style-type: none"> Necessity of secure and attractive sales promotion of products 	<ul style="list-style-type: none"> Product portal web-site for promotion 	○	●	
Land and Resource Management	<ul style="list-style-type: none"> To improve urgent communication for natural disasters, disease prevention in remote farmers, herders 	<ul style="list-style-type: none"> Necessity of effectuating frequent and secure contact between local people and meteorological, administrative office 	<ul style="list-style-type: none"> Emergent telecommunication by radio connecting with telephony 	●		
			<ul style="list-style-type: none"> Emergent telecommunication by WLL, Mobile, etc 	◎	●	
	<ul style="list-style-type: none"> To control ill-management of pasture land and arable land 	<ul style="list-style-type: none"> Necessity of integrated management of land with scientific information 	<ul style="list-style-type: none"> GIS management system for pasture and arable land with satellite remote-sensing database 	—	○	●
	<ul style="list-style-type: none"> To improve ill-management of agriculture database for agri-administration 	<ul style="list-style-type: none"> Necessity of establishing sufficient and effective agriculture database 	<ul style="list-style-type: none"> Database system of livestock and agriculture GIS management system for pasture and arable land control and utilization 	◎	●	
Research & Development	<ul style="list-style-type: none"> To prevent animal and food disease from endemic or murrain 	<ul style="list-style-type: none"> Necessity of offering or consulting latest and adequate medical care information 	<ul style="list-style-type: none"> E-mail, fax, telephone Telephone consulting 	◎	●	
			<ul style="list-style-type: none"> Veterinarian Info-web search 	—	○	●
	<ul style="list-style-type: none"> To promote new technology and system for livestock and agriculture 	<ul style="list-style-type: none"> Necessity of exchanging latest and adequate information in cooperation with institutions and related organization 	<ul style="list-style-type: none"> E-mail, fax, telephone Voice guidance Livestock and agriculture technological database Info-web 	○	●	
	<ul style="list-style-type: none"> To research marketable product development 	<ul style="list-style-type: none"> Necessity of obtaining consumers market trend and information 	<ul style="list-style-type: none"> E-mail, fax, telephone Market info-web site gathering consumers voices 	◎	●	
				—	○	●

Legend: ● = full-scale, ◎ = partial, ○ = experimental, — = not applicable,

Source: JICA study team

On the other hand, those supporting systems by ICT of livestock and agriculture above mentioned need to be participated and organized by various stakeholders who are related with agri-business or processing industries, administration, research and development and consumer's organization in terms of effective and efficient mutual communication and knowledge exchange. According to the lesson learned from Dzud disaster in recent years, many non-professional herders lost their livestock without knowledge how to manage disaster conditions. It is necessary for herders and farmers to have knowledge about not only disaster management but new technological information and know-how for production in cooperation with experts such as officers, researchers.

Table 3.3.6 Information Communication Needs among Livestock and Agriculture Stakeholders

Service Category	Support Items	Capital UB		Aimag Centre				Inter-Sum or Sum Centre				Bag		ICT Support Measures
		CM	CO	RM	LAC	PD	AM	RI	LAC	PD	AM	HF	HF	
Agri-business Management	Market information	●	◎	●	●	●	—	—	●	●	—	●	●	<ul style="list-style-type: none"> E-mail, fax, telephone Voice service
	Business transaction	●	—	●	●	●	—	—	●	●	—	◎	◎	<ul style="list-style-type: none"> EDI system E-commerce
	Product promotion	○	●	○	◎	●	—	◎	◎	●	—	○	○	<ul style="list-style-type: none"> Promotion portal web-site, e-mail
	Business experts consultation	—	◎	—	●	●	—	●	●	●	—	●	●	<ul style="list-style-type: none"> Consultation by E-mail, fax, telephone
Land and Resource Management	Emergency Communication	—	—	—	●	—	●	◎	●	—	●	●	●	<ul style="list-style-type: none"> Emergency contact by radio-telephone
	Management System	—	—	—	●	—	●	●	●	—	●	●	●	<ul style="list-style-type: none"> E-mail, fax, telephone of info
		—	—	—	◎	—	●	●	◎	—	●	○	○	<ul style="list-style-type: none"> GIS digital database exchange, web-site
Agricultural Database	—	—	—	○	—	●	●	○	—	●	○	○	<ul style="list-style-type: none"> Digital database exchange, web-site 	
Research & Development	Animal and food disease control	—	—	—	●	○	●	●	●	○	●	●	●	<ul style="list-style-type: none"> Consultation by E-mail, fax, telephone Veterinarian web-site search
	Advanced technology development	—	—	—	●	○	●	●	●	○	●	●	●	<ul style="list-style-type: none"> Consultation by E-mail, fax, telephone
		—	—	—	○	◎	●	●	○	◎	●	○	○	<ul style="list-style-type: none"> Technological database web-site
Marketable product development	—	—	—	○	●	◎	◎	○	●	◎	○	○	<ul style="list-style-type: none"> Consultation by E-mail, fax, telephone 	

Legend: ICT support needs among organizations linked to each other by degree of: ●= necessary, ◎= desirable, ○= in case of possible or necessary, — = not suitable

Note: CM = Central Market, CO = Consumers Organization, RM = Regional Market Centre, LAC = Livestock and Agriculture Cooperatives, PDC = Processing and Distribution Centre, AM = Administration and Meteorological Office, RI = Livestock and Agriculture Research Institution or Organization, HF= Herders and Farmers

Source: JICA study team

3.3.4 Tourism Development with Telecommunication Support

(1) Government Programmes for Tourism Service Improvement

The tourism takes up important position in the government policies of rural development in order to develop Mongolian tourist assets and maximize the contribution to national and regional development and widen participation in the industry throughout the country. The medium term objectives based on the master plan of are described as follows.

- Create a Mongolian tourism destination image based on unique combination of land and people and unspoiled nature.
- Facilitate the development of an internationally competitive industry with facilities and services that do justice to the tourist assets.
- Facilitate the role of tourism to diversify and strengthen the base for regional growth.

Recently, the government has put higher priority to ecotourism and support strengthening the material basis of tourism and improvement of service quality, in parallel proposed new priority programmes of “Upgrading of Tourism Education” to meet current tourism demand and modern service quality needs, and of “Tourism Development in Mongolia” focusing on Ulaanbaatar as a gateway and Uvurkhangai with Kharakhorin.

(2) Possible ICT Support for Tourism Development and Improvement

Tourism is one of the most important sectors necessary to be supported by ICT system from basic communication by telephone and facsimile to e-commerce with booking and payment for business transaction between tourism suppliers and customers. Especially, for tourist services industries including travel agents, operators and tour guides operated mostly by small medium enterprises (SMEs) telecommunication or ICT is fundamental tools to manage tourism business. On the other hand, ICT such as tourism destination website gives also attractive opportunities of offering attractive and convenient travel information.

Mongol tourism business depends highly on tourist services enterprises in Ulaanbaatar where most tourist service industries except accommodations are concentrating on this capital city. Many agents complain inconvenient telecommunication system in rural area, because of difficult address to customer’s troubles or slow service due to poor telecommunication system. In order to encourage and promote rural tourism industry, ICT in rural area will play an essential role in nourishing SMEs in tourist service business.

Table 3.3.7 Tourism Development and Service Improvement with ICT Supports in Rural Area and Desirable Phased Introduction

Sector Service	Issues	ICT Support Needs	ICT Support Measure	Introduction Phasing		
				Short	Medium	Long
Tourist Service Business Management	<ul style="list-style-type: none"> To improve poor telecommunication system for tourist service management in rural destinations 	<ul style="list-style-type: none"> Necessity of securing communication system for prompt and efficient tourist services (booking, cancelling, arrangement, etc) 	<ul style="list-style-type: none"> Radio, fax, telephone, e-mail in every remote destination 	●		
			<ul style="list-style-type: none"> Mobile, online booking system (CRS) and arrangement in every remote destination 	⊙	●	
	<ul style="list-style-type: none"> To develop sales promotion system to consumers in the country and world 	<ul style="list-style-type: none"> Necessity of secure and attractive sales promotion of products by ICT to domestic and international market 	<ul style="list-style-type: none"> Portal web-site of rural travel service companies for tourism products promotion 	⊙	●	
	<ul style="list-style-type: none"> To improve conventional transaction system for tourism business 	<ul style="list-style-type: none"> Necessity of prompt and convenient transaction and trade for document, money 	<ul style="list-style-type: none"> E-mail, fax 	●		
			<ul style="list-style-type: none"> Electronic Data Interchange (EDI) or E-commerce system 	—	○	●
<ul style="list-style-type: none"> To improve urgent communication for tourist trouble, incidents in remote destinations 	<ul style="list-style-type: none"> Necessity of frequent and secure contact between local staff and head office in cooperation with security and hospital 	<ul style="list-style-type: none"> Emergent telecommunication by radio connecting with telephony 	●			
		<ul style="list-style-type: none"> Emergent telecommunication by WLL, Mobile, etc 	⊙	●		
Tourism Administration Management	<ul style="list-style-type: none"> To develop tourist information service centre in rural destinations 	<ul style="list-style-type: none"> Necessity of offering convenient tourist information for independent tourists in rural areas 	<ul style="list-style-type: none"> Fax, telephone, e-mail Voice service by telephone 	●		
			<ul style="list-style-type: none"> Portal web-site of local government tourism office 	⊙	●	
	<ul style="list-style-type: none"> To improve ill-management of tourism database of resources, tourist statistics, etc 	<ul style="list-style-type: none"> Necessity of establishing sufficient and effective tourism database 	<ul style="list-style-type: none"> Database system of tourism resources and tourist statistics 	⊙	●	
			<ul style="list-style-type: none"> GIS management system for tourism resources and tourist statistics 	—	○	●
<ul style="list-style-type: none"> To develop human resource for hospitality service 	<ul style="list-style-type: none"> Necessity of training and education for ICT of tourism business 	<ul style="list-style-type: none"> Tele-lecture by experts Tele-conference 	—	○	●	

Legend: ● = full-scale, ⊙ = partial, ○ = experimental, — = not applicable,

Source: JICA study team

Table 3.3.8 Information Communication Needs among Tourist Service Facilities

Service Category	Support Items	Capital UB		Aimag Centre			Sum Centre		Bag	ICT Support Measures
		TO	MTB	TO	TA	TIC	TO	TA	TC	
Tourist Service Business Management	Business transaction	●	◎	●	—	○	●	○	●	<ul style="list-style-type: none"> • EDI system • E-booking (CRS)
	Product Promotion	◎	●	◎	○	●	◎	◎	◎	<ul style="list-style-type: none"> • Promotional Portal web-site
	Market information	◎	●	◎	●	◎	◎	●	○	<ul style="list-style-type: none"> • E-mail, fax, telephone • Voice guidance
	Business experts consultation	◎	●	◎	○	●	◎	◎	◎	<ul style="list-style-type: none"> • E-mail, fax, telephone consultation
	Emergency Communication	●	○	●	●	—	●	●	○	<ul style="list-style-type: none"> • Emergency contact by radio / mobile
Tourism Administration Management	Public Information Service	○	●	○	◎	●	○	●	—	<ul style="list-style-type: none"> • E-mail, fax, telephone • Information web-site
	Tourism Database	○	●	○	●	◎	○	●	—	<ul style="list-style-type: none"> • E-mail, fax by picture, document databases
	Human Development	◎	●	◎	●	○	◎	●	◎	<ul style="list-style-type: none"> • Tele-lecture by expert • Tele-conference

Legend: ICT support needs among organizations linked to each other by degree of: ●= necessary, ◎= desirable, ○= in case of possible or necessary, — = not suitable

Note: TO = Travel Agents and Operators, MTB = Mongolia Tourism Board, TA = Tourism Administration, TIC = Tourism Information Centre, TC = Tourist Camp

Source: JICA study team

3.3.5 Community Development with Telecommunication Support

(1) Government Programmes for Community Improvement

Community development in rural area can be envisaged as collective efforts by the government programmes to improve rural areas with sectoral improvement programmes such as health, education, infrastructure, industries (livestock-agriculture, SME, etc) and environmental conservation, focusing on poverty alleviation projects. There are no specific programmes or policies entitled as community development in rural areas except some international donor’s projects.

(2) Possible ICT Support for Community Improvement

Community development aims at encouraging and empowering people’s activities in conjunction with daily life improvement from economic activities to social and cultural activities in rural community. Information and communication technologies (ICT) are a fundamental driver of increased productivities, social wealth creation and traditional society retaining. The followings are identified as major objectives of introduction of ICT into rural community development in conjunction with concept of *Universal Service*.

- To be a key input for economic development and growth of rural economic activities such as SME, cooperatives, enterprises, etc.
- To offer opportunities for regional and global integration while retaining the identity of traditional community's society
- To increase the economic and social well-being of poor people, and empower individuals and communities
- To enhance the effectiveness, efficiency, and transparency of the public sector including social service sector

However, rural areas in Mongolia face an essential problem of lack of infrastructure including telecommunication for community daily life and economic activities due to its dispersed settlement in the vast land bringing difficulties of development financial sources. According to the Participatory Living Standards Assessment (PLSA) 2000, ICT development is expected to be an important tool and step towards empowering rural communities to take control over their own lives together with better public access and business opportunities.

Sum centre or future inter-sum centre connecting with rural settlement of bags and khot-ails will be an important community base where rural people can communicate each other and enjoy urban services. In order to step up the universal service and mitigate the digital divide in rural areas, convenient local exchange as accessible facilities in inter-sum centre or sum centre will serve ICT services to rural communities.

An alternative approach can be to set up *IT-Spot* where rural community can access basic ICT services, proposed in Chapter 10.6 IT Services in detail, instead of concept of multipurpose community telecentre (MTC) because that own sectoral improvement for ICT such as education, health and trade business in livestock and agriculture and other industries have been already in process of them.

When IT Spot is designed, its function and facilities and technology should be concerned by local conditions of community's willingness to use ICT and demand, affordability, sufficient maintenance funding, situation of competitive other sector's ICT programmes and projects, etc so as to fit appropriate facilitation. The followings are suggestive objectives to introduce IT Spot concept into rural communities.

- To support rural community with affordable tariff policy utilizing Universal Fund financial aid taking account of poor people.
- To give the function of *Community Centre* to the facility where people can communicate each other through ICT interface
- To play a key role as a *Promotion Centre* in disseminating ICT to rural people with contemporary learning programme for adults

- To add on *sub-profit centre* with commercial facilities such as drug store, small supermarket, book store, etc. in order to screw out the finance of ICT equipment

Table 3.3.9 IT Spot for Community Development and Desirable Phased Introduction

Sector Service	Issues	ICT Support Needs	ICT Support Measure	Introduction Phasing		
				Short	Medium	Long
Basic Tele-communication Service	• To improve difficult communication with emergency cases in remote nomadic settlement	• Necessity of effectuating frequent and secure contact between local communities and necessary public services	• Emergent telecommunication system by radio or telephones	●		
			• Emergent telecommunication by WLL, Mobile, etc	⊙	●	
	• To improve difficult communication with others outside of community in rural settlement	• Necessity of offering effective, stable and safety telephony services • Necessity of offering advanced telecommunication system	• Telephone, facsimile services	●		
			• E-mail, web-search • Voice guidance • Tele-post as hybrid mail by remote printing post-mail • Video phone	⊙	●	
Public Information Service	• To enable to access central or aimag government administrative information & data	• Limited access and information for administrative information guide	• E-mail, fax, telephone • Voice guidance • E-government web search	⊙	●	
	• To enable to access social service information	• Difficult to obtain information about social service (health, education, culture, others)	• E-mail, fax, telephone • Voice guidance • E-government web search	⊙	●	
	• To enable to proceed with central or aimag administrative office documents	• Necessity of having opportunity to submit official document without visits office	• E-documentation of local government submission by internet	⊙	●	
ICT education	• To enable to give opportunity of learning basic ICT	• Necessity of developing the place where people learn new technologies of ICT and how to use	• Setting up for basic ICT learning course or school in IT Spot in coordination with public school	●		

Legend: ●= full-scale, ⊙= partial, ○= experimental, — = not applicable, Source: JICA study team

3.3.6 Recommendations for Rural Development in conjunction with ICT

Although rural development planning or projects is not direct subject of this rural telecommunication study and not direct responsible matter for PTA, desirable directions of rural development in conjunction with telecommunication development can be recommended as follows.

(1) Public Service Led Development for ICT Dissemination in Rural Area

Taking account of difficulties of partaking ICT development by private sector in rural area in terms of economic feasibility, important public sector including health, education, administrative service and infrastructure development should play a leading and promoting role in dissemination of ICT in rural communities while private sector seeks way to share gradually in profitable ICT project areas. MOI and PTA should make supportive efforts at promoting ICT dissemination by infrastructure provision and institutional framework.

(2) Add-on ICT Budget and Effective Coordination for Rural Development

Every improvement programme and project for social service and economic development in rural area should include the budget for ICT or related programme or project except telecommunication network projects in terms of stable financial sources acquirement (e.g. 2-3% of the project). MOI should make supportive efforts at promoting ICT budget acquisition in cooperation with other ministries and authorities in charge of rural development.

(3) Institutional Arrangement for ICT as a chain of Rural Development

ICT component in rural development requires a initial investment, in organizational planning, personnel development and information system for each sector, as well as for training skill to keep up with the constant evolution of ICT. Rural development of each sector should include those institutional arrangements for ICT abovementioned.

(4) Pilot Project Formulation

A pilot project allows for experimentation with new mechanisms through policy and regulatory arrangement, new financing scheme and new technology will be effective in raising ICT awareness over the country of Mongolia. A package project covering selective sectors in social and economic development with ICT development can be combined in suitable rural areas to demonstrate its potential and effectiveness. MOI and PTA should promote this kind of pilot

projects that are expected to contribute directly and indirectly to rural development. Some ideas for this pilot project can be listed as follows.

- IT-Spot development (this is proposed by the JICA study team) utilizing local exchange for rural telecommunication centre expanded to ICT station including telephones-facsimiles and PCs with internet and e-mail for rural communities
- ICT Room formulation where rural people can use or learn PCs after school time in secondary schools that have PCs for IT education curriculum at people's own charge contributing to operation and maintenance of ICT equipments
- Disaster Management Centre with ICT for natural disaster mitigation in cooperation with private organization of livestock or agriculture, security office and meteorological office by prior caution to avoid expansion of sufferings and well-organized ex-post administration to retrieve from sufferings.
- Tourist Information Centre with ICT in major tourism destination for international tourists where tourist can obtain information such as major attractions and tour routes, possible accommodations, transportation access by PC.
- ICT Micro-finance project aiming to incubate local ICT business of which supporting business for ICT in rural area is inevitable to promote sustainable ICT dissemination without heavy dependence on Ulaanbaatar business services.

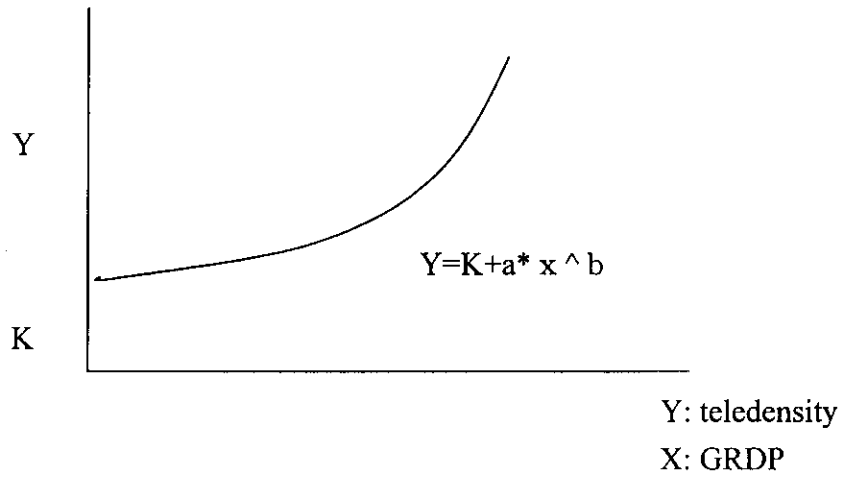
ANNEX 4

DEMAND FORECAST AND FULFILMENT PLAN

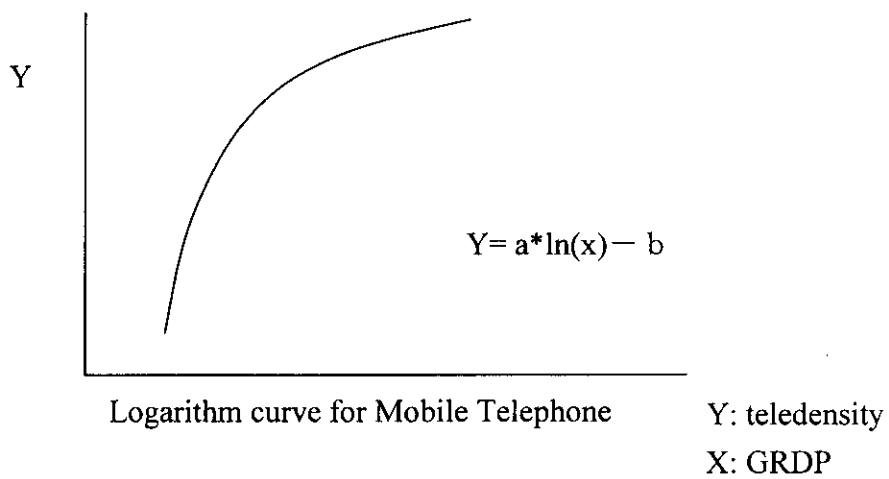
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Annex4.1 Estimation of Fixed Telephone and Mobile Telephone



Exponential Curve for Fix Telephone



Logarithm curve for Mobile Telephone

Annex 4.2 Estimation Method :

In contrast to Fixed Telephone increasing curve (Exponential Curve $y=k + a*x^b$; y; teledensity, x; GRDP per capita), an increasing curve for mobile telephone in Mongolia should be better to be an approximate Logarithm Curve. Because in case of Mongolian mobile telephone demand, the long-term forecasting for Aimag-Sums will continue so much increasing for a period of 10 –20 years (especially very much high in the years from 2000-2002), but the development trend will be gradually reduced beyond 2020.

Approximate Logarithm Curve

Therefore, it is recommendable to apply the Approximate Logarithm Curve($y= a*\ln(x)- b$, y; teledensity, x; GRDP per capita) for Mobile telephone in stead of Exponential Curve for Fix Telephone, as shown in the following figure.

Because, according to the actually supplied volume of the Mobile Telephone in the past time especially in 1999, 2000, 2001 and 2002, Mobicom, the major Mobile Telephone operator, installed 80,000 lines of mobile telephone lines and 22870 line by Skytel in 2000 and the total number of the mobile telephone reached at 210,000 lines in major large cities in Mongolia in 2001.(Refer to Study of the traffic fixed and mobile telecommunications network in Mongolia (1996-2000) Ulaabaatar2002” issued 02.04.2002 by ,PTA.

A number of mobile telephone for the end of 2002 will be at around 230,000 lines as the whole country basis.

Annex 4.3 Estimation Formula for Demand Forecast in Mongolia

4.3.1 Macroscopic Demand Forecast for Fix Telephone

- (1) Mongolia belongs to Asian Country group and the Mongolian economic growth rate has a similar trend to the average growth curve of Asian country group. Therefore, data (GDP per Capita and telephone density) of 45 countries in Asia are plotted in Logarithm graph of both axes.
- (2) Based on the plotted graph of Asian country group, an approximate equation can be obtained by using the Method of Least Squares in relation to GDP per Capita and telephone density. The obtained approximate equation of Asian country group is $y=0.0608x^{0.6536}$
- (3) The number of the fix telephones supplied in the past 5 years from 1996 to 2001 in Mongolia can be represented as the plotted data of marked ○ in the figure of "Fixed Telephone GDP and Density(Asia)" (Refer to Figure 8.3.1 of Chapter 8).
- (4) The plotted data of marked ○ is positioned already above the average growth curve of Asian countries and this position can be considered as a starting point of demand forecast equation.
- (5) The demand forecast equation that has a similar growth rate to the average growth curve of Asian country is considered as the Equation ②, as shown in the figure of Fixed Telephone GDP and Density(Asia). An estimating equation that has a lower growth trend than equation ② is taken for as the equation ①, while an estimating equation that has a higher growth trend is made equation ③. Obtained three equations are as follows;
 - ① Low Growth Curve (Equation)
 - ② Medium Growth Curve (Equation)
 - ③ High Growth Curve (Equation)
- (6) The above-mentioned approximate equations ①, ② and ③ are represented as;

$$y = a \cdot x^b,$$

where "y": Telephone density, "x": GDP per Capita and "a", "b" : constant.

Therefore, a and b can be obtained by using the following equations together certain two (2) points of (y1,x1) and (y2,x2) ;

$$b = \frac{\text{Log } y_1 - \text{Log } y_2}{\text{Log } x_1 - \text{Log } x_2}, \quad \text{log } a = \text{Log } y_1 - b * \text{log } x_1$$

$$a = 10^{(\text{Log } y_1 - b * \text{log } x_1)}$$

- (7) The calculated results of methods are shown in the attached filed of "Telephone density Calculation Formula for Fixed Telephone" as the Equation $y = ax^b$.
- (8) As for the equations of ①、② and ③, the value x (GDP per Capita) is inserted into the equations in order to calculate all demand forecast from 2001 to 2020.

4.3.2 Macroscopic Demand Forecast for Mobile Telephone

(1) The macroscopic demand forecast equation of mobile telephone in Mongolia is obtained by plotting data of GDP per Capita and telephone density of 43 Asian countries. In the case of the mobile telephone, the formula can be approximated as a Logarithm curve instead of a direct graph (both axes of Logarithm)

(2) The reasons of this approximation for the mobile telephone are follows;

Judging from the supplied records of the mobile telephone density and GDP per Capita (Refer to Mobile Telephone Density and GDP per Capita in Chapter 8), the plotted point of low GDP per Capita and telephone density goes rising very sharply. But beyond the point of GDP per Capita of several thousand dollars, the growth rate becomes rather gentle. Therefore, it is not appropriate to apply the estimated equation of the fix telephone for the mobile telephone growth curve in Mongolia.

(3) Calculation method of these equations are shown in the attached file of Equation and the approximate equation of Asian Countries can be obtained as follows;

$$y = 10.87\ln(x) - 66.483,$$

where "y" is telephone density and "x" is GDP per Capita.

- (4) The number of the mobile telephone supplied in the past 3 years from 1999 to 2001 in Mongolia can be represented as the plotted data of marked ○ in the Mobile Telephone Density and GDP per Capita (Refer to Figure 8.4.1 of Chapter 8; Mobile Telephone)
- (5) The demand forecast equation that has a similar growth rate to the average growth curve of Asian country is considered as the Equation ⑤ as shown in the figure of Mobile Telephone Density and GDP per Capita. An estimating equation that has a lower growth trend than equation ⑤ can be considered as equation ④, while an estimating equation that has a higher growth trend is taken for Equation⑥. Obtained three (3) equations are as follows;

- ④ Low Growth Curve (Equation)
- ⑤ Medium Growth Curve (Equation)
- ⑥ High Growth Curve (Equation)

- (7) The above-mentioned approximate equations④, ⑤ and ⑥ are represented as;

$$y = a \cdot \ln(x) - b,$$

where "y": Telephone density, "x": GDP per capita and "a", "b" : constant.

$$a = \frac{y_2 - y_1}{\ln(x_1) - \ln(x_2)}$$

$$b = a \cdot \ln(x_1) - y_1$$

- (8) The calculated results of methods are shown in the attached filed of "Telephone Density Calculation Formula for Cellular phone" as the Equation of $y = a \cdot \ln(x) - b$.
- (9) As for the equations of ④, ⑤ and ⑥, the value x (GDP per Capita) is inserted into the equations in order to calculate all demand forecast from 2001 to 2020.

Annex 4.4 Tendency of 45 Asian Countries for Fixed Telephone (ITU Book 2001.2)

Country	Year	GDP	Tele-Density
Afghanistan	[98]	523	0.13
Armenia		525	15.53
Azerbaijan		520	10.36
Bahrain		10,192	24.97
Bangladesh		279	0.34
Bhutan	[98]	624	1.80
Brunei Dar	[98]	13,724	24.59
Cambodia		175	0.26
China		782	8.58
D.P.R. Kor	[98]	440	4.64
Georgia		526	12.31
Hongkong SAR		23,611	58.06
India	[98]	435	3.20
Indonesia		675	3.14
Iran(I.R.)		3,802	14.90
Israel		16,228	46.25
Japan		34,377	55.75
Jordan		1,150	9.29
Kazakhstan		973	10.82
Korea(Rep.)		8,685	46.37
Kuwait		15,874	24.02
Kyrgyzstan		265	7.62
Lao P.D.R.		274	0.66
Lebanon		4,980	20.09
Macau SAR		14,079	39.80
Malaysia		3,607	21.07
Maldives	[98]	717	8.40
Mongolia		326	4.97
Myanmar		5,504	0.56
Nepal		222	1.16
Oman		6,418	8.88
Pakistan		458	2.22
Philippines		1,030	3.98
Qatar	[97]	16,157	26.77
Saudi Arabia		6,660	12.95
Singapore		21,881	48.45
Sri Lanka		846	4.06
Syria	[98]	1,134	10.35
Taiwan-China		13,392	56.80
Tajikistan		178	3.48
Thailand		2,038	8.57
Turkmenis	[98]	582	8.19
United Ara	[98]	19,750	41.79
Uzbekistan		608	6.58
Viet Nam		363	2.68
Yemen		384	1.67

Annex 4.5-1

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/Low GRDP)(1/3)

1 USD =448.61 Tg

No	Name of Aimags	GRDP (million Tg.)					GRDP (kilo USD)					Population				
		Y 2001	Y 2008	Y 2013	Y 2020	Y 2001	Y 2008	Y 2013	Y 2020	Y 2001	Y 2008	Y 2013	Y 2020			
		1	Arkhangai	15,350	19,366	23,224	33,116	34,217	43,169	51,789	73,819	97,343	95,551	99,609	108,675	
2	Bayan-Ulgii	12,152	14,152	16,971	24,200	27,088	31,546	37,830	53,944	95,926	110,235	122,414	138,801			
3	Bayankhongor	19,828	23,090	27,690	39,485	44,199	51,470	61,724	88,016	85,447	87,843	92,164	100,554			
4	Bulgan	12,792	14,897	17,864	25,474	28,515	33,207	39,821	56,784	60,836	62,765	65,085	71,008			
5	Govi-Altai	11,513	13,407	16,078	22,927	25,664	29,886	35,840	51,107	65,726	57,941	59,997	65,355			
6	Dornogovi	10,873	12,662	15,185	21,653	24,237	28,225	33,849	48,267	50,253	56,816	60,900	66,455			
7	Dornod	8,954	8,938	10,719	15,284	19,959	19,924	23,894	34,070	74,142	75,891	78,206	85,347			
8	Dundgovi	4,477	7,448	8,932	12,737	9,980	16,602	19,910	28,392	51,572	51,367	53,949	58,860			
9	Zavkhan	10,873	12,662	15,185	21,653	24,237	28,225	33,849	48,267	86,852	81,463	80,978	88,351			
10	Uvurkhangai	12,792	17,131	20,544	29,295	28,515	38,187	45,795	65,302	114,097	118,530	124,851	138,168			
11	Umnugovi	9,594	11,173	13,398	19,106	21,386	24,906	29,866	42,589	46,286	51,910	55,464	60,514			
12	Sukhbaatar	11,513	12,662	15,185	21,653	25,664	28,225	33,849	48,267	55,649	56,612	58,672	64,014			
13	Selenge	19,828	17,876	21,437	30,569	44,199	39,848	47,785	68,142	97,116	111,503	119,592	130,488			
14	Tuv	15,990	17,131	20,544	29,295	35,643	38,187	45,795	65,302	98,757	100,884	105,756	115,379			
15	Uvs	8,954	10,428	12,505	17,832	19,959	23,245	27,875	39,749	86,415	79,102	77,521	84,586			
16	Khovd	12,152	14,152	16,971	24,200	27,088	31,546	37,830	53,944	89,963	94,562	101,688	112,300			
17	Khovsgul	24,944	26,814	32,156	45,853	55,603	59,771	71,679	102,211	118,768	123,248	130,202	142,059			
18	Khentii	14,711	15,642	18,758	26,748	32,792	34,868	41,814	59,624	69,291	72,877	75,545	82,431			
19	Darkhan-Uul	11,513	13,407	16,078	22,927	25,664	29,886	35,840	51,107	86,033	100,100	110,537	123,923			
20	Orkhon	69,716	79,698	96,575	136,286	155,404	177,655	213,047	303,796	73,815	95,606	109,307	122,639			
21	Govisumber	2,558	2,235	2,680	3,821	5,702	4,982	5,974	8,517	12,331	14,263	15,337	16,737			
	Aimag Total/Average	321,077	364,971	437,679	624,114	715,715	813,560	975,634	1,391,217	1,616,618	1,699,059	1,797,674	1,976,644			
22	Nalaikh	9,635	11,490	13,779	19,648	21,477	25,613	30,715	43,799	24,084	29,467	32,719	36,457			
23	Baganuur	8,511	10,150	12,172	17,357	18,972	22,626	27,133	38,691	21,275	26,031	28,903	32,206			
	District Total/Average	18,146	21,640	25,951	37,005	40,450	48,239	57,848	82,489	45,360	55,498	61,622	68,663			
24	Ulaanbaatar	300,375	358,230	429,591	612,584	669,568	798,533	957,604	1,365,515	750,840	918,702	1,020,078	1,136,637			
	National Total/Average	639,598	744,841	893,221	1,273,703	1,425,733	1,660,331	1,991,086	2,839,221	2,412,818	2,673,259	2,879,374	3,181,944			

Annex 4.5-2

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/Low GRDP)(2/3)

No	Name of Aimag	GRDP/Capita (USD)			Weighted GRDP/Capita			Provisional Teledensity			Provisional Demand		
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013
1	Arkhangai	351.5	451.8	519.7	0.59487	0.72741	0.75158	3.961	5.037	5.663	3.856	4.813	5.642
2	Bayan-Ulgii	282.4	286.2	309.0	0.47789	0.46076	0.44691	3.182	3.191	3.368	3.053	3.518	4.123
3	Bayankhongor	517.3	585.9	669.7	0.87539	0.94340	0.96850	5.829	6.533	7.296	4.981	5.739	6.727
4	Bulgan	468.7	529.1	611.8	0.79322	0.85184	0.88478	5.282	5.899	6.667	3.214	3.703	4.340
5	Govi-Altai	390.5	515.8	598.4	0.66080	0.83047	0.86530	4.400	5.751	6.520	2.892	3.333	3.906
6	Dornogovi	482.3	496.8	555.8	0.81622	0.79885	0.80378	5.435	5.539	6.057	2.732	3.147	3.689
7	Dornod	269.2	262.5	305.5	0.45559	0.42270	0.44183	3.033	2.927	3.329	2.250	2.222	2.604
8	Dundgovi	193.5	323.2	369.1	0.32748	0.52039	0.53371	2.181	3.604	4.022	1.125	1.852	2.170
9	Zavkhan	279.1	346.5	418.0	0.47227	0.55792	0.60449	3.145	3.863	4.555	2.732	3.147	3.689
10	Uvurkhangai	249.9	322.2	368.8	0.42294	0.51872	0.53043	2.816	3.592	3.997	3.214	4.258	4.991
11	Umnugovi	462.0	479.8	538.5	0.78193	0.77250	0.77870	5.206	5.349	5.868	2.410	2.777	3.255
12	Sukhbaatar	481.2	498.6	576.9	0.78046	0.80273	0.83430	5.197	5.559	6.287	2.892	3.147	3.689
13	Selenge	455.1	357.4	399.6	0.77020	0.57539	0.57783	5.128	3.984	4.354	4.981	4.443	5.208
14	Tuv	360.9	378.5	433.0	0.61080	0.60945	0.62621	4.067	4.220	4.719	4.017	4.258	4.991
15	Uvs	231.0	293.9	359.6	0.39088	0.47314	0.52000	2.603	3.276	3.918	2.250	2.592	3.038
16	Khovd	301.1	333.6	372.0	0.50957	0.53713	0.53799	3.393	3.719	4.054	3.053	3.518	4.123
17	Khovsgul	468.2	485.0	550.5	0.79229	0.78083	0.79613	5.275	5.407	5.999	6.266	6.665	7.811
18	Khentii	473.3	478.4	553.5	0.80091	0.77033	0.80042	5.333	5.334	6.031	3.696	3.888	4.557
19	Darkhan-Uul	298.3	298.6	324.2	0.50483	0.48070	0.46888	3.361	3.329	3.533	2.892	3.333	3.906
20	Orkhon	2,105.3	1,658.2	1,949.1	3.56291	2.99165	2.81861	23.723	20.717	21.239	17.512	19.808	23.216
21	Govisumber	462.4	349.3	389.5	0.78256	0.56240	0.56329	5.211	3.894	4.245	643	556	651
	Aimag Total/Average	442.7	478.8	542.7	0.74924	0.77095	0.78485	4.989	5.339	5.914	80.661	90.717	106.326
22	Nalaikh	891.8	869.2	938.7	1.50915	1.39948	1.35756	10.049	9.691	10.230	2.421	2.856	3.347
23	Baganuur	891.8	869.2	938.8	1.50915	1.39945	1.35757	10.049	9.691	10.230	2.138	2.523	2.987
	District Total/Average	891.8	869.2	938.8	1.50915	1.39947	1.35756	10.049	9.691	10.230	4.559	5.379	6.304
24	Ulaanbaatar	891.8	869.2	938.8	1.50915	1.39947	1.35757	10.049	9.691	10.230	75.449	89.030	104.350
	National Total/Average	590.9	621.1	691.5	1.00000	1.00000	1.00000	6.658	6.925	7.535	160.669	185.126	216.980

National Macroscopic Teledensity

Annex 4.5-3

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/Low GRDP)(3/3)

No	Name of Aimag	Adjusted Demand			Adjusted Teledensity				
		y2001	y2008	y2013	y2020	y2001	y2008	y2013	y2020
1	Arkhangai	3,856	4,813	5,642	7,619	3.96	5.04	5.66	7.01
2	Bayan-Ulgii	3,053	3,518	4,123	5,568	3.18	3.19	3.37	4.01
3	Bayankhongor	4,981	5,739	6,727	9,084	5.83	6.53	7.30	9.03
4	Bulgan	3,214	3,703	4,340	5,861	5.28	5.90	6.67	8.25
5	Govi-Altai	2,892	3,333	3,906	5,275	4.40	5.75	6.52	8.07
6	Dornogovi	2,732	3,147	3,689	4,982	5.44	5.54	6.06	7.50
7	Dornod	2,250	2,250	2,604	3,517	3.03	2.96	3.33	4.12
8	Dundgovi	1,125	1,852	2,170	2,931	2.18	3.61	4.02	4.98
9	Zavkhan	2,732	3,147	3,689	4,982	3.15	3.86	4.56	5.64
10	Uvurkhangai	3,214	4,258	4,991	6,740	2.82	3.59	4.00	4.88
11	Umnugovi	2,410	2,777	3,255	4,396	5.21	5.35	5.87	7.26
12	Sukhbaatar	2,892	3,147	3,689	4,982	5.20	5.56	6.29	7.78
13	Selenge	4,981	4,981	5,208	7,033	5.13	4.47	4.35	5.39
14	Tuv	4,017	4,258	4,991	6,740	4.07	4.22	4.72	5.84
15	Uvs	2,250	2,592	3,038	4,103	2.60	3.28	3.92	4.85
16	Khovd	3,053	3,518	4,123	5,568	3.39	3.72	4.05	4.96
17	Khovsgul	6,266	6,665	7,811	10,549	5.28	5.41	6.00	7.43
18	Khentii	3,696	3,888	4,557	6,154	5.33	5.34	6.03	7.47
19	Darkhan-Uul	2,892	3,333	3,906	5,275	3.36	3.33	3.53	4.26
20	Orkhon	17,512	19,808	23,216	31,355	23.72	20.72	21.24	25.57
21	Govisumber	643	643	651	880	5.21	4.51	4.24	5.26
	Aimag Total/Average	80,661	91,370	106,326	143,594	4.99	5.38	5.91	7.26
22	Nalaikh	2,421	2,856	3,347	4,521	10.05	9.69	10.23	12.40
23	Baganuur	2,138	2,523	2,957	3,994	10.05	9.69	10.23	12.40
	District Total/Average	4,559	5,379	6,304	8,515	10.05	9.69	10.23	12.40
24	Ulaanbaatar	75,449	89,030	104,350	140,932	10.05	9.69	10.23	12.40
	National Total/Average	160,669	185,779	216,980	293,041	6.66	6.95	7.54	9.21

Annex 4.5-4

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/Medium GRDP)(1/3)

1 USD =448.61 Tg

No	Name of Aimag	GRDP (million Tg.)						GRDP (kilo USD)						Population																																																																																																																																																																																																																																																																																																																																									
		y 2001		y 2008		y 2013		y 2001		y 2008		y 2013		y 2001		y 2008		y 2013		y 2020																																																																																																																																																																																																																																																																																																																																			
1	Arkhangai	15,350	23,154	29,834	43,399	34,217	51,613	66,503	96,741	97,343	95,551	99,609	108,675	12,152	16,921	21,802	31,715	27,088	37,719	48,599	70,696	95,926	110,235	122,414	138,801	19,828	27,607	35,571	51,745	44,199	61,539	79,292	115,345	85,447	87,843	92,164	100,554	12,792	17,811	22,949	33,384	28,515	39,703	51,156	74,417	60,836	62,765	65,085	71,008	11,513	16,030	20,654	30,045	25,664	35,733	46,040	66,974	65,726	57,941	59,897	65,355	10,873	15,139	19,507	28,376	24,237	33,746	43,483	63,253	50,253	56,816	60,900	66,455	8,954	10,687	13,770	20,030	19,959	23,822	30,695	44,649	74,142	75,891	78,206	85,347	4,477	8,906	11,475	16,692	9,980	19,852	25,579	37,208	51,572	51,367	53,949	58,860	10,873	15,139	19,507	28,376	24,237	33,746	43,483	63,253	86,852	81,453	80,978	88,351	12,792	20,483	26,382	38,391	28,515	45,659	58,831	85,578	114,097	118,530	124,851	138,168	9,594	13,358	17,212	25,038	21,386	29,776	38,367	55,812	46,286	51,910	55,464	60,514	11,513	15,139	19,507	28,376	25,664	33,746	43,483	63,253	55,649	56,612	58,672	64,014	19,828	21,373	27,539	40,061	44,199	47,643	61,387	89,300	97,116	111,503	119,592	130,488	15,990	20,483	26,392	38,391	35,643	45,659	58,831	85,578	98,757	100,884	105,756	115,379	8,954	12,468	16,065	23,369	19,959	27,793	35,811	52,092	86,415	79,102	77,521	84,586	12,152	16,921	21,802	31,715	27,088	37,719	48,599	70,696	89,963	94,562	101,688	112,300	24,944	32,060	41,309	60,091	55,603	71,465	92,082	133,949	118,768	123,248	130,202	142,059	14,711	18,702	24,097	35,053	32,792	41,689	53,715	78,137	69,291	72,877	75,545	82,431	11,513	16,030	20,654	30,045	25,664	35,733	46,040	66,974	86,033	100,100	110,537	123,923	69,716	95,289	122,778	178,603	155,404	212,409	273,685	398,125	73,815	95,606	109,307	122,639	2,558	2,672	3,442	5,008	5,702	5,956	7,673	11,163	12,331	14,263	15,337	16,737	321,077	436,372	562,258	817,903	715,715	972,720	1,253,334	1,823,194	1,616,618	1,699,059	1,797,674	1,976,644	22	Nalaikh	9,635	13,738	17,701	25,749	21,477	30,623	39,458	57,398	24,084	29,467	32,719	36,457	8,511	12,136	15,637	22,746	18,972	27,052	34,856	50,704	21,275	26,031	28,903	32,206	18,146	25,874	33,338	48,496	40,450	57,675	74,313	108,102	45,360	55,498	61,622	68,663	24	Ulaanbaatar	300,375	428,308	551,868	802,790	669,568	954,745	1,230,174	1,789,506	750,840	918,702	1,020,078	1,136,637	639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944	National Total/Average		639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944
22	Nalaikh	9,635	13,738	17,701	25,749	21,477	30,623	39,458	57,398	24,084	29,467	32,719	36,457	8,511	12,136	15,637	22,746	18,972	27,052	34,856	50,704	21,275	26,031	28,903	32,206	18,146	25,874	33,338	48,496	40,450	57,675	74,313	108,102	45,360	55,498	61,622	68,663	24	Ulaanbaatar	300,375	428,308	551,868	802,790	669,568	954,745	1,230,174	1,789,506	750,840	918,702	1,020,078	1,136,637	639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944	National Total/Average		639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944																																																																																																																																																																																																																																																																										
24	Ulaanbaatar	300,375	428,308	551,868	802,790	669,568	954,745	1,230,174	1,789,506	750,840	918,702	1,020,078	1,136,637	639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944	National Total/Average		639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944																																																																																																																																																																																																																																																																																																																
National Total/Average		639,598	890,554	1,147,464	1,669,189	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944																																																																																																																																																																																																																																																																																																																																										

Annex 4.5-5

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/Medium GRDP)(2/3)

No	Name of Aimag	GRP/Capita (USD)			Weighted GRDP/Capita			Provisional Teledensity			Provisional Demand						
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2020			
1	Arkhangai	351.5	540.2	667.6	890.2	0.59487	0.72140	0.75157	0.76127	3.961	5.797	6.897	8.673	3.856	5.540	6.871	9.426
2	Bayan-Ulgii	282.4	342.2	397.0	509.3	0.47789	0.46077	0.44691	0.43557	3.182	3.872	4.101	4.962	3.053	4.049	5.021	6.888
3	Bayankhongor	517.3	700.6	860.3	1,147.1	0.87539	0.94339	0.96849	0.98097	5.829	7.519	8.888	11.176	4.981	6.605	8.192	11,238
4	Bulgan	468.7	632.6	786.0	1,048.0	0.79322	0.85183	0.88479	0.89623	5.282	6.789	8.120	10.211	3.214	4.262	5.285	7,251
5	Govt-Altai	390.5	616.7	768.7	1,024.8	0.66080	0.83048	0.86528	0.87636	4.400	6.619	7.941	9.984	2.892	3.836	4.757	6,526
6	Dornogovi	482.3	594.0	714.0	951.8	0.81622	0.79985	0.80377	0.81397	5.435	6.375	7.376	9.273	2.732	3.622	4.493	6,163
7	Dornod	269.2	313.9	392.5	523.1	0.45559	0.42271	0.44183	0.44738	3.033	3.369	4.055	5.097	2.250	2.557	3.171	4,351
8	Dundgovi	193.5	386.5	474.1	632.1	0.32748	0.52045	0.53374	0.54060	2.181	4.148	4.898	6.159	1.125	2.131	2.643	3,626
9	Zavkhan	279.1	414.3	537.0	715.9	0.47227	0.55792	0.60448	0.61225	3.145	4.447	5.547	6.975	2.732	3.622	4.493	6,163
10	Uvurkhangai	249.9	385.2	471.2	619.4	0.42294	0.51874	0.53044	0.52967	2.816	4.134	4.868	6.034	3.214	4.901	6.078	8,338
11	Umnugovi	462.0	573.6	691.8	922.3	0.78193	0.77245	0.77872	0.78873	5.206	6.156	7.146	8.966	2.410	3.196	3.964	5,438
12	Sukhbaatar	461.2	596.1	741.1	988.1	0.78046	0.80273	0.83429	0.84501	5.197	6.398	7.656	9.627	2.892	3.622	4.493	6,163
13	Selenge	455.1	427.3	513.3	684.4	0.77020	0.57539	0.57784	0.58525	5.128	4.586	5.303	6.668	4.981	5.114	6.342	8,701
14	Tuv	360.9	452.6	556.3	741.7	0.61080	0.60947	0.62622	0.63429	4.067	4.857	5.747	7.226	4.017	4.901	6.078	8,338
15	Uvs	231.0	351.4	461.9	615.8	0.39088	0.47314	0.52002	0.52666	2.603	3.771	4.772	6.000	2.250	2.983	3.700	5,076
16	Khovd	301.1	398.9	477.9	629.5	0.50957	0.53714	0.53800	0.53836	3.393	4.281	4.937	6.133	3.053	4.049	5.021	6,888
17	Khovsgul	468.2	579.8	707.2	942.9	0.79229	0.78084	0.79613	0.80636	5.275	6.223	7.306	9.187	6.266	7.671	9.513	13,051
18	Khentii	473.3	572.0	711.0	947.9	0.80091	0.77033	0.80042	0.81063	5.333	6.140	7.345	9.235	3.696	4.475	5.550	7,613
19	Darkhan-Uul	298.3	357.0	416.5	540.4	0.50483	0.48071	0.48887	0.48218	3.361	3.831	4.303	5.265	2.892	3.836	4.757	6,526
20	Orkhon	2,105.3	2,221.7	2,503.8	3,245.3	3.56291	2.99184	2.81859	2.77618	23,723	23,845	25,866	31,628	17,512	22,798	28,274	98,789
21	Govisumber	462.4	417.6	500.3	667.0	0.78256	0.56235	0.56316	0.57039	5.211	4.482	5.168	6.498	6.43	6.40	7.93	1,088
	Aimag Total/Average	442.7	572.5	697.2	922.4	0.74924	0.77096	0.78484	0.78879	4.989	6.145	7.202	8.966	60.661	104.410	129.489	177.641
22	Nalaikh	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39948	1.35756	1.34639	10,049	11,154	12,458	15,339	2.421	3.287	4.077	5,593
23	Baganuur	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39945	1.35757	1.34636	10,049	11,154	12,458	15,339	2,138	2,904	3,601	4,941
	District Total/Average	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39946	1.35756	1.34638	10,049	11,154	12,458	15,339	4,559	6,191	7,678	10,534
24	Ulaanbaatar	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39947	1.35757	1.34638	10,049	11,154	12,458	15,339	75.449	102.470	127.084	174.349
	National Total/Average	590.9	742.6	888.3	1,169.3	1.00000	1.00000	1.00000	1.00000	6.656	7.970	9.177	11.393	180.669	213.071	264.251	362.524

National Macroscopic Teledensity

Annex 4.5-6

Macroscopic Demand Forecast of Fixed Telephone (Medium GRDP/Medium Growth)(3/3)

No	Name of Aimags	Adjusted Demand			Adjusted Teledensity				
		y2001	y2008	y2013	y2020	y2001	y2008	y2013	y2020
1	Arkhangai	3,856	5,540	6,871	9,426	3.96	5.80	6.90	8.67
2	Bayan-Ulgii	3,053	4,049	5,021	6,888	3.18	3.67	4.10	4.96
3	Bayankhongor	4,981	6,605	8,192	11,238	5.83	7.52	8.89	11.18
4	Bulgan	3,214	4,262	5,285	7,251	5.28	6.79	8.12	10.21
5	Govi-Altai	2,892	3,836	4,757	6,526	4.40	6.62	7.94	9.99
6	Dornogovi	2,732	3,622	4,493	6,163	5.44	6.37	7.38	9.27
7	Dornod	2,250	2,557	3,171	4,351	3.03	3.37	4.05	5.10
8	Dundgovi	2,157	2,157	2,643	3,626	4.18	4.20	4.90	6.16
9	Zavkhan	2,732	3,622	4,493	6,163	3.15	4.45	5.55	6.98
10	Uvurkhangai	3,777	4,901	6,078	8,338	3.31	4.13	4.87	6.03
11	Umnugovi	2,410	3,196	3,964	5,438	5.21	6.16	7.15	8.99
12	Sukhbaatar	2,892	3,622	4,493	6,163	5.20	6.40	7.66	9.63
13	Selenge	4,981	5,114	6,342	8,701	5.13	4.59	5.30	6.67
14	Tuv	4,017	4,901	6,078	8,338	4.07	4.86	5.75	7.23
15	Uvs	2,265	2,983	3,700	5,076	2.62	3.77	4.77	6.00
16	Khovd	3,053	4,049	5,021	6,888	3.39	4.28	4.94	6.13
17	Khuvsgul	6,266	7,671	9,513	13,051	5.28	6.22	7.31	9.19
18	Khentii	3,696	4,475	5,550	7,613	5.33	6.14	7.35	9.24
19	Darkhan-Uul	7,045	8,771	10,718	14,491	8.19	8.76	9.70	11.69
20	Orkhon	17,512	22,798	28,274	38,789	23.72	23.85	25.87	31.63
21	Govisumber	792	792	793	1,088	6.42	5.55	5.17	6.50
	Aimag Total/Average	86,573	109,523	135,450	185,606	5.36	6.45	7.53	9.39
22	Nalaikh	2,421	3,287	4,077	5,593	10.05	11.15	12.46	15.34
23	Baganuur	3,144	3,144	3,601	4,941	14.78	12.08	12.46	15.34
	District Total/Average	5,565	6,431	7,678	10,534	12.27	11.59	12.46	15.34
24	Ulaanbaatar	75,449	102,470	127,084	174,349	10.05	11.15	12.46	15.34
	National Total/Average	167,587	218,424	270,212	370,489	6.95	8.17	9.38	11.64

Annex 4.5-7

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/High GRDP)(1/3)

1 USD =448.61 Tg

No	Name of Aimag	GRDP (million Tg.)				GRDP (kilo USD)				Population			
		y 2001	y 2008	y 2013	y 2020	y 2001	y 2008	y 2013	y 2020	y 2001	y 2008	y 2013	y 2020
1	Arkhangai	15,350	23,154	30,986	51,407	34,217	51,613	69,071	114,592	97,343	95,551	99,609	108,675
2	Bayan-Ulgii	12,152	16,921	22,643	37,567	27,088	37,719	50,474	83,741	95,926	110,235	122,414	138,801
3	Bayankhongor	19,828	27,607	36,945	61,293	44,199	61,539	82,354	136,629	85,447	87,843	92,164	100,554
4	Bulgan	12,792	17,811	23,835	39,544	28,515	39,703	53,131	88,148	60,836	62,765	65,085	71,008
5	Govi-Altai	11,513	16,030	21,452	35,589	25,664	35,733	47,819	79,332	65,726	57,941	59,897	65,355
6	Dornogovi	10,873	15,139	20,260	33,612	24,237	33,746	45,162	74,925	50,253	56,816	60,900	66,455
7	Dornod	8,954	10,687	14,301	23,726	19,959	23,822	31,878	52,888	74,142	75,891	78,206	85,347
8	Dundgovi	4,477	8,906	11,918	19,772	9,980	19,852	26,567	44,074	51,572	51,367	53,949	58,860
9	Zavkhan	10,873	15,139	20,260	33,612	24,237	33,746	45,162	74,925	86,852	81,453	80,978	88,351
10	Uvurkhangai	12,792	20,483	27,411	45,475	28,515	45,659	61,102	101,369	114,097	118,530	124,851	138,168
11	Umnugovi	9,594	13,358	17,876	29,658	21,386	29,776	39,848	66,111	46,286	51,910	55,464	60,514
12	Sukhbaatar	11,513	15,139	20,260	33,612	25,664	33,746	45,162	74,925	55,649	56,612	58,672	64,014
13	Selenge	19,828	21,373	28,602	47,453	44,199	47,643	63,757	105,778	97,116	111,503	119,592	130,488
14	Tuv	15,990	20,483	27,411	45,475	35,643	45,659	61,102	101,369	98,757	100,884	105,756	115,379
15	Uvs	8,954	12,468	16,685	27,681	19,959	27,793	37,193	61,704	86,415	79,102	77,521	84,586
16	Khovd	12,152	16,921	22,643	37,567	27,088	37,719	50,474	83,741	89,963	94,562	101,688	112,300
17	Khuvsdul	24,944	32,060	42,903	71,179	55,603	71,465	95,635	158,666	118,768	123,248	130,202	142,059
18	Khentii	14,711	18,702	25,027	41,521	32,792	41,689	55,788	92,555	69,291	72,877	75,545	82,431
19	Darkhan-Uul	11,513	16,030	21,452	35,589	25,664	35,733	47,819	79,332	86,033	100,100	110,537	123,923
20	Orkhon	69,716	95,289	127,518	211,559	155,404	212,409	284,251	471,588	73,815	95,606	109,307	122,639
21	Govisumber	2,558	2,672	3,575	5,932	5,702	5,956	7,969	13,223	12,331	14,263	15,337	16,737
	Aimag Total/Average	321,077	436,372	583,963	968,823	715,715	972,720	1,301,716	2,159,611	1,616,618	1,699,059	1,797,674	1,976,644
22	Nalaikh	9,635	13,738	18,384	30,501	21,477	30,623	40,981	67,989	24,084	29,467	32,719	36,457
23	Baganuur	8,511	12,136	16,240	26,944	18,972	27,052	36,201	60,060	21,275	26,031	28,903	32,206
	District Total/Average	18,146	25,874	34,625	57,444	40,450	57,675	77,182	128,049	45,360	55,498	61,622	68,663
24	Ulaanbaatar	300,375	428,308	573,173	950,922	669,568	984,745	1,277,665	2,119,707	750,840	918,702	1,020,078	1,136,637
	National Total/Average	639,598	890,554	1,191,761	1,977,189	1,425,733	1,985,141	2,656,564	4,407,367	2,412,818	2,673,259	2,879,374	3,181,944

Annex 4.5-8

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/High GRDP)(2/3)

No	Name of Aimag	GRDP/Capita (USD)			Weighted GRDP/Capita			Provisional Teledensity			Provisional Demand								
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2020					
1	Arkhangai	351.5	540.2	693.4	1,054.4	1,054.4	1,054.4	0.59487	0.72740	0.75158	0.76127	3.961	5.797	7.106	9.909	3.856	5.540	7.079	10.769
2	Bayan-Ulgii	282.4	342.2	412.3	603.3	603.3	603.3	0.47789	0.46077	0.44690	0.43557	3.182	3.672	4.225	5.670	3.053	4.049	5.173	7.870
3	Bayankhongor	517.3	700.6	893.6	1,358.8	1,358.8	1,358.8	0.87539	0.94339	0.96851	0.96057	5.829	7.519	9.157	12.769	4.981	6.605	8.440	12.840
4	Bulgan	468.7	632.6	816.3	1,241.4	1,241.4	1,241.4	0.79322	0.85183	0.89480	0.89623	5.282	6.789	8.365	11.666	3.214	4.262	5.445	8.284
5	Govi-Altai	390.5	616.7	798.4	1,213.9	1,213.9	1,213.9	0.66080	0.83048	0.86531	0.87636	4.400	6.619	8.181	11.407	2.892	3.836	4.901	7.456
6	Dornogovi	482.3	594.0	741.6	1,127.5	1,127.5	1,127.5	0.81622	0.79985	0.80377	0.81397	5.435	6.375	7.599	10.595	2.732	3.622	4.628	7.042
7	Domod	289.2	313.9	407.6	619.7	619.7	619.7	0.45589	0.42271	0.44181	0.44738	3.033	3.369	4.177	5.823	2.250	2.557	3.267	4.971
8	Dundgovi	193.5	386.5	492.4	748.8	748.8	748.8	0.32748	0.52045	0.53374	0.54060	2.181	4.148	5.046	7.037	1.125	2.131	2.723	4.142
9	Zavkhan	279.1	414.3	557.7	848.0	848.0	848.0	0.47227	0.55792	0.60448	0.61225	3.145	4.447	5.715	7.969	2.732	3.622	4.628	7.042
10	Uvurkhangai	249.9	385.2	489.4	733.7	733.7	733.7	0.42294	0.51874	0.53045	0.52968	2.816	4.134	5.015	6.895	3.214	4.901	6.262	9.527
11	Umnugovi	482.0	573.6	718.4	1,092.5	1,092.5	1,092.5	0.78193	0.77245	0.77870	0.78873	5.206	6.156	7.362	10.267	2.410	3.196	4.084	6.213
12	Sukhbaatar	481.2	596.1	769.7	1,170.4	1,170.4	1,170.4	0.78046	0.80273	0.83429	0.84501	5.197	6.398	7.888	10.999	2.892	3.622	4.628	7.042
13	Selenge	455.1	427.3	533.1	810.6	810.6	810.6	0.77020	0.57539	0.57783	0.58524	5.128	4.586	5.463	7.618	4.981	5.114	6.534	9.941
14	Tuv	360.9	452.6	577.8	878.6	878.6	878.6	0.61080	0.60947	0.62622	0.63429	4.067	4.857	5.921	8.256	4.017	4.901	6.262	9.527
15	Uvs	231.0	351.4	479.8	729.5	729.5	729.5	0.39088	0.47314	0.52001	0.52666	2.603	3.771	4.917	6.855	2.250	2.983	3.812	5.799
16	Khovd	301.1	398.9	496.4	745.7	745.7	745.7	0.50957	0.53714	0.53799	0.53836	3.393	4.281	5.086	7.008	3.053	4.049	5.173	7.870
17	Khovsgul	468.2	579.8	734.5	1,116.9	1,116.9	1,116.9	0.79229	0.78084	0.79612	0.80636	5.275	6.223	7.527	10.496	6.266	7.671	9.801	14.911
18	Khentii	473.3	572.0	738.5	1,122.8	1,122.8	1,122.8	0.80091	0.77033	0.80041	0.81063	5.333	6.140	7.567	10.552	3.696	4.475	5.717	8.698
19	Darkhan-Uul	298.3	357.0	432.6	640.2	640.2	640.2	0.50483	0.48071	0.46869	0.46218	3.361	3.831	4.433	6.016	2.892	3.836	4.901	7.456
20	Orkhon	2,105.3	2,221.7	2,600.5	3,845.3	3,845.3	3,845.3	3.56291	2.99184	2.81859	2.77618	23.723	23.845	26.649	36.137	17.512	22.798	29.129	44.318
21	Govisumber	482.4	417.6	519.6	790.0	790.0	790.0	0.78256	0.56235	0.56318	0.57038	5.211	4.482	5.325	7.425	643	640	817	1,243
	Aimag Total/Average	442.7	572.5	724.1	1,092.6	1,092.6	1,092.6	0.74924	0.77096	0.78484	0.78879	4.989	6.145	7.420	10.267	80.661	104.410	133.404	202.951
22	Nalaikh	891.8	1,039.2	1,252.5	1,864.9	1,864.9	1,864.9	1.50915	1.39948	1.35756	1.34639	10.049	11.154	12.835	17.526	2.421	3.287	4.200	6.390
23	Baganuur	891.8	1,039.2	1,252.5	1,864.9	1,864.9	1,864.9	1.50915	1.39945	1.35757	1.34638	10.049	11.154	12.835	17.525	2.138	2.904	3.710	5.845
	District Total/Average	891.8	1,039.2	1,252.5	1,864.9	1,864.9	1,864.9	1.50915	1.39946	1.35756	1.34638	10.049	11.154	12.835	17.525	4.599	6.191	7.910	12.035
24	Ulaanbaatar	891.8	1,039.2	1,252.5	1,864.9	1,864.9	1,864.9	1.50915	1.39947	1.35757	1.34638	10.049	11.154	12.835	17.525	75.449	102.470	130.929	199.201
	National Total/Average	590.9	742.6	922.6	1,385.1	1,385.1	1,385.1	1.00000	1.00000	1.00000	1.00000	6.658	7.970	9.455	13.017	160.669	213.071	272.243	414.197

National Macroscopic Teledensity

Annex 4.5-9

Macroscopic Demand Forecast of Fixed Telephone (Medium Growth/High GRDP)(3/3)

No	Name of Aimag	Adjusted Demand			Adjusted Teledensity				
		y2001	y2008	y2013	y2020	y2001	y2008	y2013	y2020
1	Arkhangai	3,856	5,540	7,079	10,769	3.96	5.80	7.11	9.91
2	Bayan-Ulgii	3,053	4,049	5,173	7,870	3.18	3.67	4.23	5.67
3	Bayankhongor	4,981	6,605	8,440	12,840	5.83	7.52	9.16	12.77
4	Bulgan	3,214	4,262	5,445	8,284	5.28	6.79	8.37	11.67
5	Govi-Altai	2,892	3,836	4,901	7,456	4.40	6.62	8.18	11.41
6	Dornogovi	2,732	3,622	4,628	7,042	5.44	6.37	7.60	10.60
7	Dornod	2,250	2,557	3,267	4,971	3.03	3.37	4.18	5.82
8	Dundgovi	1,125	2,131	2,723	4,142	2.18	4.15	5.05	7.04
9	Zavkhan	2,732	3,622	4,628	7,042	3.15	4.45	5.72	7.97
10	Uvurkhangai	3,214	4,901	6,262	9,527	2.82	4.13	5.02	6.90
11	Umnugovi	2,410	3,196	4,084	6,213	5.21	6.16	7.36	10.27
12	Sukhbaatar	2,892	3,622	4,628	7,042	5.20	6.40	7.89	11.00
13	Selenge	4,981	5,114	6,534	9,941	5.13	4.59	5.46	7.62
14	Tuv	4,017	4,901	6,262	9,527	4.07	4.86	5.92	8.26
15	Uvs	2,250	2,983	3,812	5,799	2.60	3.77	4.92	6.86
16	Khovd	3,053	4,049	5,173	7,870	3.39	4.28	5.09	7.01
17	Khovsgul	6,266	7,671	9,801	14,911	5.28	6.22	7.53	10.50
18	Khentii	3,696	4,475	5,717	8,698	5.33	6.14	7.57	10.55
19	Darkhan-Uul	2,892	3,836	4,901	7,456	3.36	3.83	4.43	6.02
20	Orkhon	17,512	22,798	29,129	44,318	23.72	23.85	26.65	36.14
21	Govisumber	643	643	817	1,243	5.21	4.51	5.33	7.43
	Aimag Total/Average	80,661	104,413	133,404	202,961	4.99	6.15	7.42	10.27
22	Nalaikh	2,421	3,287	4,200	6,390	10.05	11.15	12.84	17.53
23	Baganuur	2,138	2,904	3,710	5,645	10.05	11.16	12.84	17.53
	District Total/Average	4,559	6,191	7,910	12,035	10.05	11.16	12.84	17.53
24	Ulaanbaatar	75,449	102,470	130,929	199,201	10.05	11.15	12.84	17.53
	National Total/Average	160,669	213,074	272,243	414,197	6.66	7.97	9.45	13.02

Annex 4.6-1 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
1	ARKHANGAI Aimag Total	3,856	4,097	4,337	4,578	4,818	5,059	5,299	5,540	5,806	6,072	6,339	6,605	6,871	7,236	7,601	7,966	8,331	8,696	9,061	9,426
1	Total of Sum Centres	1,357	1,441	1,526	1,610	1,695	1,779	1,864	1,948	2,042	2,136	2,229	2,323	2,417	2,546	2,674	2,803	2,932	3,061	3,189	3,318
1	2 Batsengel	105	112	118	125	132	139	145	152	159	166	174	181	188	198	208	218	228	238	248	258
1	3 Bulgan	46	49	51	54	57	60	62	65	68	71	75	78	81	85	90	94	98	102	107	111
1	4 Zargalant	63	67	71	75	79	83	87	91	95	100	104	109	113	119	125	131	137	143	149	155
1	5 Ikhmir	95	101	107	113	118	124	130	136	143	149	156	162	169	178	187	196	205	214	223	232
1	6 Uglinuur	48	51	54	57	60	63	66	69	72	76	79	83	86	91	95	100	104	109	113	118
1	7 Ulziit	70	74	79	83	87	91	96	100	105	110	114	119	124	131	137	144	151	158	164	171
1	8 Undur-Ujaan	78	83	88	93	97	102	107	112	117	123	128	134	139	146	154	161	169	176	184	191
1	9 Tariat	87	93	98	104	109	115	120	126	132	138	144	150	156	164	173	181	189	197	206	214
1	10 Tuвшруулех	135	143	152	160	169	177	186	194	203	212	222	231	240	253	266	279	291	304	317	330
1	11 Tsakhir	40	42	45	47	50	52	55	57	60	63	65	68	71	75	78	82	86	90	93	97
1	12 Tsenskher	74	79	83	88	92	97	101	106	111	116	121	126	131	138	145	152	159	166	173	180
1	13 Tssetsereg	67	71	75	79	84	88	92	96	101	105	110	114	119	125	132	138	144	150	157	163
1	14 Chuluut	51	54	57	60	64	67	70	73	77	80	84	87	91	96	101	106	110	115	120	125
1	15 Khaikhan	101	107	114	120	126	132	139	145	152	159	166	173	180	190	199	209	218	228	237	247
1	16 Khangai	53	56	60	63	66	69	73	76	80	84	87	91	95	100	105	110	115	120	125	130
1	17 Khasheet	35	37	39	41	44	46	48	50	52	55	57	60	62	65	69	72	75	78	82	85
1	18 Khotont	108	115	121	128	135	142	148	155	162	170	177	185	192	202	213	223	233	243	254	264
1	19 Erdenemandal	101	107	114	120	126	132	139	145	152	159	166	173	180	190	199	209	218	228	237	247
2	BAYAN-ULGII Aimag Total	3,053	3,195	3,338	3,480	3,622	3,764	3,907	4,049	4,243	4,438	4,632	4,827	5,021	5,298	5,554	5,821	6,088	6,355	6,621	6,888
2	Total of Sum Centres	760	795	831	866	901	936	972	1,007	1,056	1,104	1,153	1,201	1,250	1,316	1,383	1,449	1,515	1,581	1,648	1,714
2	2 Altai	38	40	42	44	45	47	49	51	53	56	58	61	63	66	70	73	76	79	83	86
2	3 Altanuisugts	40	42	44	46	47	49	51	53	56	58	61	63	66	69	73	76	80	83	87	90
2	4 Baynuur	76	80	83	87	90	94	97	101	106	111	115	120	125	132	138	145	151	158	164	171
2	5 Bugat	40	42	44	46	47	49	51	53	56	58	61	63	66	70	73	77	80	84	87	91
2	6 Bulgan	50	52	55	57	60	62	65	67	70	73	77	80	83	87	92	96	101	105	110	114
2	7 Buyant	32	33	35	36	38	39	41	42	44	46	48	50	52	55	57	60	63	66	68	71
2	8 Deluun	59	62	64	67	70	73	75	78	82	86	89	93	97	102	107	112	118	123	128	133
2	9 Nogoonuur	76	79	83	86	90	93	97	100	105	110	114	119	124	131	137	144	150	157	163	170
2	10 Tolbo	45	47	49	51	54	56	58	60	63	66	69	72	75	79	83	87	91	95	99	103
2	11 Ulaankhus	63	66	69	72	75	78	81	84	88	92	96	100	104	110	115	121	126	132	137	143
2	12 Sagsai	63	66	69	72	74	77	80	83	87	91	95	99	103	108	114	119	125	130	136	141
2	13 Tsengel	66	69	72	75	78	81	84	87	91	95	100	104	108	114	119	125	131	137	142	148
2	14 Khotgor	35	37	38	40	41	43	44	46	48	50	53	55	57	60	63	66	70	73	76	79
2	15 Tsagaanuur	77	81	84	88	91	95	98	102	107	112	117	122	127	134	140	147	154	161	167	174

Annex 4.6-2 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
3	BAYANKHONGOR Aimag Total	4,981	5,213	5,445	5,677	5,909	6,141	6,373	6,605	6,922	7,240	7,557	7,875	8,192	8,627	9,062	9,497	9,933	10,368	10,803	11,238
3	Total of Sum Centres	1,542	1,613	1,695	1,756	1,828	1,899	1,971	2,042	2,140	2,238	2,337	2,435	2,533	2,668	2,802	2,937	3,071	3,206	3,340	3,475
3	2 Sharqulluut	19	20	21	22	22	23	24	25	26	27	29	30	31	33	34	36	38	40	41	43
3	3 Uziit	106	111	116	121	125	130	135	140	147	154	160	167	174	183	193	202	211	220	230	239
3	4 Jinst	50	52	55	57	60	62	65	67	70	73	77	80	83	87	92	96	101	105	110	114
3	5 Bogd	98	103	107	112	116	121	125	130	136	142	149	155	161	169	178	186	195	203	212	220
3	6 Bayanlig	84	88	92	96	99	103	107	111	116	121	127	132	137	144	152	159	166	173	181	188
3	7 Bayangobi	59	62	64	67	70	73	75	78	82	86	89	93	97	102	107	112	118	123	128	133
3	8 Baantsagaan	53	55	58	60	63	65	68	70	73	77	80	84	87	92	96	101	105	110	114	119
3	9 Bayantsagaan	132	138	144	150	157	163	169	175	184	192	201	209	218	229	241	252	264	275	287	298
3	10 Bayan-Undur	40	42	44	46	47	49	51	53	56	58	61	63	66	70	73	77	80	84	87	91
3	11 Shinejinst	40	42	44	46	47	49	51	53	55	58	60	63	65	69	72	76	79	83	86	90
3	12 Bumbugur	45	47	49	51	53	55	57	59	62	65	68	71	74	78	82	86	89	93	97	101
3	13 Buutsagaan	151	158	165	172	179	186	193	200	210	219	229	238	248	261	274	287	301	314	327	340
3	14 Khuremjaral	132	138	144	150	157	163	169	175	183	192	200	209	217	229	240	252	263	275	286	298
3	15 Bayanbulag	51	53	56	58	61	63	66	68	71	74	78	81	84	88	93	97	102	106	111	115
3	16 Gurbanbulag	52	54	57	59	62	64	67	69	72	76	79	83	86	91	95	100	104	109	113	118
3	17 Zag	61	64	67	70	72	75	78	81	85	89	92	96	100	105	111	116	122	127	133	138
3	18 Jargalant	147	154	161	168	174	181	188	195	204	213	223	232	241	254	267	280	292	305	318	331
3	19 Galluut	80	84	87	91	95	99	102	106	111	116	122	127	132	139	146	153	159	166	173	180
3	20 Bayan-Oboo	60	63	65	68	71	74	76	79	83	87	90	94	98	103	109	114	119	124	130	135
3	21 Erdensotsogt	62	66	69	73	77	81	84	88	93	97	101	104	108	113	118	124	129	134	141	148
4	BULGAN Aimag Total	3,214	3,364	3,513	3,663	3,813	3,963	4,112	4,262	4,467	4,671	4,876	5,080	5,285	5,566	5,847	6,128	6,408	6,689	6,970	7,251
4	Total of Sum Centres	1,735	1,815	1,896	1,976	2,056	2,136	2,217	2,297	2,407	2,518	2,628	2,739	2,849	3,000	3,152	3,303	3,454	3,605	3,757	3,908
4	2 Bayan-Agt	80	84	87	91	95	99	102	106	111	116	121	126	131	138	145	152	159	166	173	180
4	3 Bayannuur	83	87	90	94	98	102	105	109	114	120	125	131	136	143	150	157	165	172	179	186
4	4 Bugat	43	45	47	49	51	53	55	57	60	63	65	68	71	75	79	83	86	90	94	98
4	5 Buregkhangai	84	88	92	96	99	103	107	111	116	122	127	133	138	145	153	160	167	174	182	189
4	6 Gurbanbulag	75	79	82	86	89	93	96	100	105	109	114	118	123	130	136	143	149	156	162	169
4	7 Dashinchilen	117	122	128	133	139	144	150	155	162	170	177	185	192	202	212	222	233	243	253	263
4	8 Mogod	54	56	59	61	64	66	69	71	75	78	82	85	89	94	98	103	108	113	117	122
4	9 Orkhon	65	68	71	74	77	80	83	86	90	94	99	103	107	113	118	124	129	135	140	146
4	10 Rashaant	138	144	151	157	163	169	176	182	191	200	208	217	226	238	250	262	274	286	298	310
4	11 Saikhan	132	138	144	150	157	163	169	175	183	192	200	209	217	229	240	252	263	275	286	298
4	12 Selenge	123	129	134	140	146	152	157	163	171	179	186	194	202	213	223	234	245	256	266	277
4	13 Teshig	78	82	85	89	92	96	99	103	108	113	118	123	128	135	141	148	155	162	168	175
4	14 Khangal	178	186	195	203	211	219	228	236	247	259	270	282	293	309	324	340	355	371	386	402
4	15 Khishi-Undur	130	136	142	148	154	160	166	172	180	188	197	205	213	224	236	247	259	270	282	293
4	16 Khutag	165	171	177	183	189	195	201	207	214	221	228	235	242	250	258	266	274	282	290	298
4	17 Khyaganat	170	178	186	194	201	209	217	225	236	247	257	268	279	294	308	323	338	353	367	382

Annex 4.6-3 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
5	GOBI-A, TAI, Aimag Total	2,892	3,027	3,162	3,297	3,431	3,566	3,701	3,836	4,020	4,204	4,389	4,573	4,757	4,941	5,125	5,309	5,493	5,677	5,861	
5	Total of Sum Centres	1,203	1,259	1,315	1,371	1,427	1,483	1,539	1,595	1,672	1,748	1,825	1,901	1,978	2,053	2,129	2,205	2,281	2,357	2,433	
5	2 Altai	52	54	57	59	62	64	67	69	72	76	79	83	86	90	95	104	108	113	117	
5	3 Bayan-Uul	109	114	119	124	129	134	139	144	151	158	165	172	179	188	198	207	217	226	236	
5	4 Bayan-ooroo	14	15	15	16	16	17	17	18	19	20	21	22	23	24	25	26	28	29	30	
5	5 Bigger	96	100	105	109	114	118	123	127	133	139	145	151	157	165	174	182	191	199	208	
5	6 Bugat	50	52	55	57	59	61	64	66	69	72	76	79	82	86	91	100	104	109	113	
5	7 Darvi	55	58	60	63	66	69	71	74	77	81	84	88	91	96	101	106	110	115	120	
5	8 Delger	100	105	109	114	119	124	128	133	139	146	152	159	165	174	182	191	200	209	217	
5	9 Jargalan	37	39	40	42	44	46	47	49	51	54	56	59	61	64	68	71	74	77	81	
5	10 Taisir	14	15	15	16	17	18	18	19	20	21	22	23	24	25	26	27	29	30	31	
5	11 Tonkhil	105	110	115	120	124	129	134	139	146	152	159	165	172	181	191	200	209	218	228	
5	12 Ugrug	46	48	51	53	55	57	60	62	65	68	70	73	76	80	84	88	93	97	101	
5	13 Khaliun	35	37	38	40	41	43	44	46	48	50	53	55	57	60	63	66	69	72	75	
5	14 Khukhmort	60	63	65	68	71	74	76	79	83	87	90	94	98	103	108	113	119	124	129	
5	15 Tsogt	157	164	172	179	186	193	201	208	218	228	238	248	258	272	285	299	313	327	340	
5	16 Tseel	38	40	42	44	45	47	49	51	53	56	58	61	63	66	70	73	76	79	83	
5	17 Chandmani	56	59	61	64	66	69	71	74	78	81	85	88	92	97	102	107	111	116	121	
5	18 Sharga	26	27	28	29	31	32	33	34	36	37	39	40	42	44	47	49	51	53	56	
5	19 Erdene	49	51	54	56	58	60	63	65	68	71	75	78	81	85	90	94	98	102	107	
5	20 Guulin	104	109	114	119	123	128	133	138	145	151	158	164	171	180	189	198	207	216	225	
6	DORNOGOVI Aimag Total	2,732	2,859	2,986	3,113	3,241	3,368	3,495	3,622	3,796	3,970	4,145	4,319	4,493	4,732	4,970	5,209	5,447	5,686	5,924	
6	Total of Sum Centres	1,248	1,306	1,365	1,423	1,481	1,539	1,598	1,656	1,735	1,815	1,894	1,974	2,053	2,162	2,272	2,381	2,490	2,599	2,709	
6	2 Airag	103	108	112	117	122	127	131	136	143	149	156	162	169	178	187	196	205	214	223	
6	3 Altanshiree	77	81	84	88	91	95	98	102	107	112	117	122	127	134	140	147	154	161	167	
6	4 Dalanjargalan	33	35	36	38	39	41	42	44	46	48	50	52	54	57	60	63	65	68	71	
6	5 Delgerekh	20	21	22	23	24	25	26	27	28	29	31	32	33	35	37	39	40	42	44	
6	6 Ikhkhet	78	82	85	89	93	97	100	104	109	114	119	124	129	136	143	150	156	163	170	
6	7 Mandakh	20	21	22	23	23	24	25	26	27	29	30	32	33	35	36	38	40	42	43	
6	8 Urgun	53	55	58	60	63	65	68	70	73	77	80	84	87	92	96	101	105	110	114	
6	9 Saikh-handulaan	12	13	13	14	14	15	15	16	17	17	18	18	19	20	21	22	24	25	26	
6	10 Ulaanbadrakh	21	22	23	24	25	26	27	28	29	30	32	33	34	36	38	40	41	43	45	
6	11 Khatanbulag	33	35	36	38	39	41	42	44	46	48	50	52	54	57	60	63	65	68	71	
6	12 Khuvsugul	18	19	19	20	21	22	22	23	24	25	27	28	29	31	32	34	35	37	38	
6	13 Erdene	73	76	80	83	87	90	94	97	102	106	111	115	120	126	133	139	146	152	159	
6	14 Zuunbayan	191	200	209	218	227	236	245	254	266	278	291	303	315	332	348	365	382	399	415	
6	15 Zarniin-Uud	458	479	501	522	544	565	587	608	637	666	696	725	754	794	834	874	914	954	994	
6	16 Zulegt	9	9	10	10	11	11	12	12	13	13	14	14	15	16	17	18	18	19	20	
6	17 Khajuulaan	40	42	44	46	47	49	51	53	56	58	61	63	66	69	73	76	80	83	87	
6	18 Sulinkheer	9	9	10	10	11	11	12	12	13	13	14	14	15	16	17	18	18	19	20	

Annex 4.6-4 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
7	DORNOD Aimag Total	2,250	2,284	2,338	2,382	2,425	2,469	2,513	2,557	2,600	2,603	2,925	3,048	3,171	3,340	3,508	3,677	3,845	4,014	4,182	4,351
7	Total of Sum Centres	488	498	507	517	527	537	546	556	563	610	636	663	690	727	764	801	837	874	911	948
7	2 Khaikhol	37	38	38	39	40	41	41	42	44	46	49	51	53	56	58	61	64	67	69	72
7	3 Matad	22	22	23	23	24	24	25	25	26	27	29	30	31	33	34	36	38	40	41	43
7	4 Khukhbuir	29	30	30	31	31	32	32	33	35	36	38	39	41	43	45	47	50	52	54	56
7	5 Bayantumen	19	19	20	20	21	21	22	22	23	24	25	26	27	29	30	32	33	35	36	38
7	6 Tsagaan-Ovoo	23	23	24	24	25	25	26	26	27	29	30	32	33	35	36	38	40	42	43	45
7	7 Bayan-uul	69	70	72	73	75	76	78	79	83	87	90	94	98	103	108	113	119	124	129	134
7	8 Bayandun	23	23	24	24	25	25	26	26	27	28	30	31	32	34	35	37	39	41	42	44
7	9 Dashbalbar	32	33	33	34	35	36	36	37	39	41	42	44	46	48	51	53	56	58	61	63
7	10 Gurbanzagal	24	24	25	25	26	26	27	27	28	30	31	33	34	36	38	40	41	43	45	47
7	11 Kherlen /Choibalsan/	50	51	52	53	53	54	55	56	59	62	64	67	70	74	77	81	85	89	92	96
7	12 Erentsav	99	101	103	105	107	109	111	113	118	124	129	135	140	147	155	162	170	177	185	192
7	13 Bulgan	34	35	35	36	37	38	38	39	41	43	44	46	48	51	53	56	58	61	63	66
7	14 Sergelen	22	22	23	23	24	24	25	25	26	27	28	29	30	32	33	35	37	39	40	42
7	15 Sumber	5	5	5	5	6	6	6	6	6	6	7	7	7	7	8	8	9	9	10	10
8	DUNDGObI Aimag Total	2,157	2,157	2,157	2,157	2,157	2,157	2,157	2,157	2,254	2,351	2,449	2,546	2,643	2,783	2,924	3,064	3,205	3,345	3,486	3,626
8	Total of Sum Centres	884	884	884	884	884	884	884	884	923	963	1,002	1,042	1,081	1,139	1,196	1,254	1,311	1,369	1,426	1,484
8	2 Adaatsag	55	55	55	55	55	55	55	55	57	60	62	65	67	71	74	78	81	85	88	92
8	3 Delgerisogt	59	59	59	59	59	59	59	59	62	64	67	69	72	76	80	84	87	91	95	99
8	4 Deren	92	92	92	92	92	92	92	92	96	100	104	108	112	118	124	130	136	142	148	154
8	5 Gobi-Ugtaal	85	85	85	85	85	85	85	85	89	93	96	100	104	109	115	120	126	131	137	142
8	6 Gurbansaikhan	50	50	50	50	50	50	50	50	52	54	57	59	61	64	68	71	74	77	81	84
8	7 Tsagaan-delger	48	48	48	48	48	48	48	48	50	52	54	56	58	61	64	67	71	74	77	80
8	8 Bayanjargalan	21	21	21	21	21	21	21	21	22	23	24	25	26	27	29	30	31	32	34	35
8	9 Undurshil	28	28	28	28	28	28	28	28	29	30	32	33	34	36	38	40	41	43	45	47
8	10 Ulzait	28	28	28	28	28	28	28	28	29	30	32	33	34	36	38	40	41	43	45	47
8	11 Khuuld	53	53	53	53	53	53	53	53	55	58	60	63	65	68	72	75	79	82	86	89
8	12 Luus	54	54	54	54	54	54	54	54	57	58	62	64	67	71	74	78	81	85	88	92
8	13 Saikhan-Ovoo	46	46	46	46	46	46	46	46	48	50	52	54	56	59	62	65	68	71	74	77
8	14 Delgerkhengai	55	55	55	55	55	55	55	55	58	60	63	65	68	72	75	79	82	86	89	93
8	15 Erdenedalai	210	210	210	210	210	210	210	210	219	229	238	248	257	271	284	298	312	326	339	353

Annex 4.6-5 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																				
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
9	ZAVKHAAN Aimag Total	2,732	2,859	2,986	3,113	3,241	3,368	3,495	3,622	3,796	3,970	4,145	4,319	4,493	4,732	4,970	5,209	5,447	5,686	5,924	6,163	
9	Total of Sum Centres	1,316	1,377	1,439	1,500	1,561	1,622	1,684	1,745	1,829	1,913	1,996	2,080	2,164	2,279	2,395	2,510	2,625	2,740	2,856	2,971	
9	2 Aldarkhaan	P-2	2007	80	87	90	94	97	101	106	111	115	120	125	132	138	145	152	159	165	172	
9	3 Asgat	P-4	2018	19	20	21	22	23	24	25	26	27	28	30	31	32	34	35	37	39	41	
9	4 Bayantes	P-1	2006	37	39	41	43	44	46	48	50	52	55	57	60	62	65	68	71	75	78	
9	5 Bayankhairkhan	P-4	2017	24	25	26	27	29	30	31	32	35	37	38	40	42	44	46	49	51	53	
9	6 Bulnai	P-1	2004	301	315	329	343	357	371	385	399	414	437	457	495	521	548	574	600	626	653	
9	7 Durvuzin	P-2	2010	24	25	26	27	29	30	31	32	34	35	37	38	40	42	44	46	49	51	
9	8 Zavkhanmandal	P-1	2006	33	35	36	38	39	41	42	44	46	48	51	53	55	58	61	64	66	69	
9	9 Idet	P-2	2008	54	57	59	62	64	67	72	75	79	82	86	89	94	98	103	108	113	117	
9	10 Ikh-Uul	P-2	2010	26	27	29	30	31	32	34	35	38	40	41	43	45	48	50	52	54	57	
9	11 Numug	P-2	2010	26	27	28	29	31	32	33	34	36	37	39	40	42	44	47	49	51	53	
9	12 Orhon	P-2	2009	35	37	38	40	41	43	44	46	48	50	53	57	60	63	66	69	72	75	
9	13 Santmargaz	P-4	2017	24	25	26	27	29	30	31	32	33	35	36	38	41	43	45	48	50	52	
9	14 Songino	P-1	2004	194	203	212	221	230	239	248	257	269	282	294	307	319	336	353	370	387	404	
9	15 Tudevtei	P-1	2005	97	101	106	110	115	119	124	128	134	140	147	153	159	168	176	185	193	202	
9	16 Tes	P-2	2007	86	90	94	98	102	106	110	114	119	125	130	136	141	149	156	164	171	179	
9	17 Telmen	P-2	2010	25	26	27	28	30	31	32	33	35	36	38	41	43	45	47	50	52	54	
9	18 Urgamal	P-2	2010	24	25	26	27	28	29	30	31	33	34	36	37	39	41	43	45	47	49	
9	19 Tsagaankharkhan	P-4	2016	29	30	32	33	34	35	37	38	40	42	43	45	47	50	52	55	57	60	
9	20 Tsagaanxhuluut	P-4	2019	16	17	17	18	19	20	20	21	22	23	24	25	26	27	29	30	32	33	
9	21 Tsetseuuul	P-3	2012	55	58	60	63	65	68	70	73	77	80	84	87	91	96	101	106	110	115	
9	22 ShituusteI	P-1	2008	56	59	61	64	66	69	71	74	78	81	85	88	92	97	102	107	111	116	
9	23 Erdenekhairkhan	P-2	2009	33	35	36	38	39	41	42	44	46	48	50	52	54	57	60	63	65	68	
9	24 Yanuu	P-4	2017	22	23	24	25	26	27	28	29	30	32	33	35	36	38	40	42	44	46	
10	UVURKHANGAI Aimag Total		3,777	3,938	4,098	4,259	4,419	4,580	4,740	4,901	5,136	5,372	5,607	5,843	6,078	6,401	6,724	7,047	7,369	7,692	8,015	8,338
10	Total of Sum Centres		2,014	2,099	2,184	2,269	2,355	2,440	2,525	2,610	2,736	2,862	2,987	3,113	3,239	3,411	3,583	3,755	3,928	4,100	4,272	4,444
10	2 Bayan-Undur	P-2	2010	22	23	24	25	26	27	28	29	30	32	33	35	36	38	40	42	43	45	47
10	3 Burd	P-1	2006	37	39	40	42	43	45	46	48	50	52	55	57	59	62	66	69	72	75	79
10	4 Bat-Ulzii	P-1	2005	94	98	102	106	110	114	118	122	128	134	140	146	152	160	168	176	184	192	200
10	5 BBS-Ujaan	P-4	2018	21	22	23	24	25	26	27	28	29	30	32	33	34	36	38	40	41	43	45
10	6 Bayangel	P-1	2008	56	58	61	63	66	68	71	73	76	80	83	87	90	95	99	104	109	114	118
10	7 Guchin-Uus	P-2	2008	53	55	57	59	62	64	66	68	71	75	78	82	85	89	94	98	103	107	111
10	8 Zvii	P-1	2005	80	83	87	90	94	97	101	104	109	114	119	124	129	136	143	150	156	163	170
10	9 Ulzii	P-2	2009	32	33	35	36	37	38	40	41	43	45	47	49	51	54	56	59	62	65	67
10	10 ZB Ujaan	P-1	2006	57	59	62	64	66	68	71	73	77	80	84	87	91	96	101	106	110	115	120
10	11 Bogd	P-2	2008	50	52	54	56	59	61	63	65	68	71	74	77	80	84	89	93	97	101	106
10	12 Nainiteel	P-1	2006	62	65	67	70	73	76	78	81	85	89	92	96	100	105	111	116	122	127	133
10	13 Sant	P-1	2006	43	45	46	48	48	50	52	53	55	58	61	63	66	69	73	76	80	83	87
10	14 Taragt	P-2	2009	43	45	46	48	48	50	52	53	55	58	61	63	66	69	73	76	80	83	87
10	15 Tugug	P-2	2009	36	37	39	40	42	43	45	46	48	50	53	55	57	60	63	66	70	73	76
10	16 Yanga	P-1	2004	145	151	157	163	170	176	182	188	197	206	215	224	233	245	258	270	283	295	308
10	17 Kharkhandulaan	P-4	2016	27	28	29	30	31	32	33	34	36	38	39	41	43	45	48	50	52	54	57
10	18 Khuzirt	P-1	2004	298	311	323	336	348	361	373	386	405	423	442	460	479	504	530	555	581	606	632
10	19 Kharkhorin	P-1	2004	849	885	921	957	994	1,030	1,066	1,102	1,155	1,208	1,261	1,314	1,367	1,440	1,512	1,585	1,657	1,730	1,802
10	20 Bayanteeg	P-4	2020	9	9	10	10	11	11	12	12	13	13	14	14	15	16	17	18	18	19	20

Annex 4.6-6 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																				
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
11	UMUNOGOVI Aimag Total	2,410	2,522	2,635	2,747	2,859	2,971	3,084	3,196	3,350	3,503	3,657	3,810	3,964	4,175	4,385	4,596	4,806	5,017	5,227	5,438	
11	Total of Sum Centres	596	624	652	680	708	736	764	792	829	867	904	942	979	1,031	1,083	1,135	1,188	1,240	1,292	1,344	
11 2	Bayandalai P-2	2009	34	36	37	39	40	42	43	45	47	49	51	53	55	58	61	64	67	70	73	76
11 3	Bayan-Ovoo P-2	2010	22	23	24	25	27	28	29	30	31	33	34	36	37	39	41	43	44	46	48	50
11 4	Bulgan P-2	2008	54	57	59	62	64	67	69	72	75	79	82	86	89	94	98	103	108	113	117	122
11 5	Gurbantes P-2	2008	57	60	62	65	67	70	72	75	79	82	86	89	93	98	103	108	113	118	123	128
11 6	Mandal-Ovoo P-3	2012	57	60	62	65	68	71	73	76	80	83	87	90	94	99	104	109	114	119	124	129
11 7	Manlai P-4	2015	32	33	35	36	38	39	41	42	44	46	48	50	52	55	58	61	63	66	69	72
11 8	Nongon P-1	2005	90	94	98	102	107	111	115	119	125	130	136	141	147	155	163	171	178	186	194	202
11 9	Noyon P-2	2009	37	39	40	42	44	46	47	49	51	53	56	58	60	63	67	70	73	76	80	83
11 10	Sevrei P-1	2006	29	30	32	33	35	36	38	39	41	43	44	46	48	51	53	56	58	61	63	66
11 11	Khanbogd P-2	2009	28	29	31	32	33	34	36	37	39	41	42	44	46	49	51	54	56	59	61	64
11 12	Khankhongor P-2	2008	50	52	55	57	60	62	65	67	70	73	77	80	83	87	92	96	100	104	109	113
11 13	Khurmen P-2	2010	25	26	27	28	30	31	32	33	35	36	38	39	41	43	45	47	50	52	54	56
11 14	Tsogt-Ovoo P-2	2010	21	22	23	24	25	26	27	28	29	31	32	34	35	37	39	41	42	44	46	48
11 15	Tsogtsetsii P-2	2009	30	31	33	34	36	37	39	40	42	44	45	47	49	52	54	57	59	62	64	67
11 16	Tavantolgoi P-1	2006	30	31	33	34	36	37	39	40	42	44	46	48	50	53	55	58	60	63	65	68
12	SUKHBAATAR Aimag Total		2,892	2,996	3,101	3,205	3,309	3,413	3,518	3,622	3,796	3,970	4,145	4,319	4,493	4,732	4,970	5,209	5,447	5,686	5,924	6,163
12	Total of Sum Centres		967	1,002	1,037	1,072	1,107	1,142	1,177	1,212	1,270	1,328	1,386	1,444	1,502	1,582	1,662	1,742	1,823	1,903	1,983	2,063
12 2	Dariganga P-2	2009	33	34	35	36	38	39	40	41	43	45	47	49	51	54	56	59	62	65	67	70
12 3	Naran P-4	2015	33	34	35	36	38	39	40	41	43	45	47	49	51	54	57	60	62	65	68	71
12 4	Ongon P-1	2005	99	103	106	110	113	117	120	124	130	136	142	148	154	162	170	178	187	195	203	211
12 5	Bayandelger P-2	2007	74	77	79	82	85	88	90	93	97	102	106	111	115	121	127	133	140	146	152	158
12 6	Khalzan P-3	2013	47	49	50	52	54	56	57	59	62	65	67	70	73	77	81	85	88	92	96	100
12 7	Uulbayan P-1	2005	94	97	101	104	107	110	114	117	123	129	134	140	146	154	161	169	177	185	192	200
12 8	Munkhkhagan P-1	2005	115	119	124	128	132	136	141	145	152	159	165	172	179	189	198	208	217	227	236	246
12 9	Sukhbaatar P-3	2013	47	49	50	52	54	56	57	59	62	65	67	70	73	77	81	85	89	93	97	101
12 10	Erdnetsagaan P-1	2004	134	139	144	149	153	158	163	168	176	184	192	200	208	219	230	241	252	263	274	285
12 11	Tumensogt P-1	2004	189	196	203	210	216	223	230	237	248	260	271	283	294	310	325	341	356	372	387	403
12 12	Tuvsinshiree P-1	2006	39	40	42	43	45	46	48	49	51	54	56	59	61	64	68	71	74	77	81	84
12 13	Asgat P-2	2008	48	50	51	53	55	57	58	60	63	66	68	71	74	78	82	86	90	94	98	102
12 14	Tabuiag (uurkhai) P-4	2020	15	16	16	17	17	18	18	19	20	21	21	22	23	24	26	27	28	29	31	32

Annex 4.6-7 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
13	SELENGE Aimag Total	4,981	5,000	5,019	5,038	5,057	5,076	5,095	5,114	5,136	5,160	5,185	5,210	5,235	5,260	5,285	5,310	5,335	5,360	5,385	5,410	5,435	5,460	5,485	5,510	5,535	5,560	5,585	5,610	5,635	5,660	5,685	5,710	5,735	5,760	5,785	5,810	5,835	5,860	5,885	5,910	5,935	5,960	5,985	6,010	6,035	6,060	6,085	6,110	6,135	6,160	6,185	6,210	6,235	6,260	6,285	6,310	6,335	6,360	6,385	6,410	6,435	6,460	6,485	6,510	6,535	6,560	6,585	6,610	6,635	6,660	6,685	6,710	6,735	6,760	6,785	6,810	6,835	6,860	6,885	6,910	6,935	6,960	6,985	7,010	7,035	7,060	7,085	7,110	7,135	7,160	7,185	7,210	7,235	7,260	7,285	7,310	7,335	7,360	7,385	7,410	7,435	7,460	7,485	7,510	7,535	7,560	7,585	7,610	7,635	7,660	7,685	7,710	7,735	7,760	7,785	7,810	7,835	7,860	7,885	7,910	7,935	7,960	7,985	8,010	8,035	8,060	8,085	8,110	8,135	8,160	8,185	8,210	8,235	8,260	8,285	8,310	8,335	8,360	8,385	8,410	8,435	8,460	8,485	8,510	8,535	8,560	8,585	8,610	8,635	8,660	8,685	8,710	8,735	8,760	8,785	8,810	8,835	8,860	8,885	8,910	8,935	8,960	8,985	9,010	9,035	9,060	9,085	9,110	9,135	9,160	9,185	9,210	9,235	9,260	9,285	9,310	9,335	9,360	9,385	9,410	9,435	9,460	9,485	9,510	9,535	9,560	9,585	9,610	9,635	9,660	9,685	9,710	9,735	9,760	9,785	9,810	9,835	9,860	9,885	9,910	9,935	9,960	9,985	10,010	10,035	10,060	10,085	10,110	10,135	10,160	10,185	10,210	10,235	10,260	10,285	10,310	10,335	10,360	10,385	10,410	10,435	10,460	10,485	10,510	10,535	10,560	10,585	10,610	10,635	10,660	10,685	10,710	10,735	10,760	10,785	10,810	10,835	10,860	10,885	10,910	10,935	10,960	10,985	11,010	11,035	11,060	11,085	11,110	11,135	11,160	11,185	11,210	11,235	11,260	11,285	11,310	11,335	11,360	11,385	11,410	11,435	11,460	11,485	11,510	11,535	11,560	11,585	11,610	11,635	11,660	11,685	11,710	11,735	11,760	11,785	11,810	11,835	11,860	11,885	11,910	11,935	11,960	11,985	12,010	12,035	12,060	12,085	12,110	12,135	12,160	12,185	12,210	12,235	12,260	12,285	12,310	12,335	12,360	12,385	12,410	12,435	12,460	12,485	12,510	12,535	12,560	12,585	12,610	12,635	12,660	12,685	12,710	12,735	12,760	12,785	12,810	12,835	12,860	12,885	12,910	12,935	12,960	12,985	13,010	13,035	13,060	13,085	13,110	13,135	13,160	13,185	13,210	13,235	13,260	13,285	13,310	13,335	13,360	13,385	13,410	13,435	13,460	13,485	13,510	13,535	13,560	13,585	13,610	13,635	13,660	13,685	13,710	13,735	13,760	13,785	13,810	13,835	13,860	13,885	13,910	13,935	13,960	13,985	14,010	14,035	14,060	14,085	14,110	14,135	14,160	14,185	14,210	14,235	14,260	14,285	14,310	14,335	14,360	14,385	14,410	14,435	14,460	14,485	14,510	14,535	14,560	14,585	14,610	14,635	14,660	14,685	14,710	14,735	14,760	14,785	14,810	14,835	14,860	14,885	14,910	14,935	14,960	14,985	15,010	15,035	15,060	15,085	15,110	15,135	15,160	15,185	15,210	15,235	15,260	15,285	15,310	15,335	15,360	15,385	15,410	15,435	15,460	15,485	15,510	15,535	15,560	15,585	15,610	15,635	15,660	15,685	15,710	15,735	15,760	15,785	15,810	15,835	15,860	15,885	15,910	15,935	15,960	15,985	16,010	16,035	16,060	16,085	16,110	16,135	16,160	16,185	16,210	16,235	16,260	16,285	16,310	16,335	16,360	16,385	16,410	16,435	16,460	16,485	16,510	16,535	16,560	16,585	16,610	16,635	16,660	16,685	16,710	16,735	16,760	16,785	16,810	16,835	16,860	16,885	16,910	16,935	16,960	16,985	17,010	17,035	17,060	17,085	17,110	17,135	17,160	17,185	17,210	17,235	17,260	17,285	17,310	17,335	17,360	17,385	17,410	17,435	17,460	17,485	17,510	17,535	17,560	17,585	17,610	17,635	17,660	17,685	17,710	17,735	17,760	17,785	17,810	17,835	17,860	17,885	17,910	17,935	17,960	17,985	18,010	18,035	18,060	18,085	18,110	18,135	18,160	18,185	18,210	18,235	18,260	18,285	18,310	18,335	18,360	18,385	18,410	18,435	18,460	18,485	18,510	18,535	18,560	18,585	18,610	18,635	18,660	18,685	18,710	18,735	18,760	18,785	18,810	18,835	18,860	18,885	18,910	18,935	18,960	18,985	19,010	19,035	19,060	19,085	19,110	19,135	19,160	19,185	19,210	19,235	19,260	19,285	19,310	19,335	19,360	19,385	19,410	19,435	19,460	19,485	19,510	19,535	19,560	19,585	19,610	19,635	19,660	19,685	19,710	19,735	19,760	19,785	19,810	19,835	19,860	19,885	19,910	19,935	19,960	19,985	20,010	20,035	20,060	20,085	20,110	20,135	20,160	20,185	20,210	20,235	20,260	20,285	20,310	20,335	20,360	20,385	20,410	20,435	20,460	20,485	20,510	20,535	20,560	20,585	20,610	20,635	20,660	20,685	20,710	20,735	20,760	20,785	20,810	20,835	20,860	20,885	20,910	20,935	20,960	20,985	21,010	21,035	21,060	21,085	21,110	21,135	21,160	21,185	21,210	21,235	21,260	21,285	21,310	21,335	21,360	21,385	21,410	21,435	21,460	21,485	21,510	21,535	21,560	21,585	21,610	21,635	21,660	21,685	21,710	21,735	21,760	21,785	21,810	21,835	21,860	21,885	21,910	21,935	21,960	21,985	22,010	22,035	22,060	22,085	22,110	22,135	22,160	22,185	22,210	22,235	22,260	22,285	22,310	22,335	22,360	22,385	22,410	22,435	22,460	22,485	22,510	22,535	22,560	22,585	22,610	22,635	22,660	22,685	22,710	22,735	22,760	22,785	22,810	22,835	22,860	22,885	22,910	22,935	22,960	22,985	23,010	23,035	23,060	23,085	23,110	23,135	23,160	23,185	23,210	23,235	23,260	23,285	23,310	23,335	23,360	23,385	23,410	23,435	23,460	23,485	23,510	23,535	23,560	23,585	23,610	23,635	23,660	23,685	23,710	23,735	23,760	23,785	23,810	23,835	23,860	23,885	23,910	23,935	23,960	23,985	24,010	24,035	24,060	24,085	24,110	24,135	24,160	24,185	24,210	24,235	24,260	24,285	24,310	24,335	24,360	24,385	24,410	24,435	24,460	24,485	24,510	24,535	24,560	24,585	24,610	24,635	24,660	24,685	24,710	24,735	24,760	24,785	24,810	24,835	24,860	24,885	24,910	24,935	24,960	24,985	25,010	25,035	25,060	25,085	25,110	25,135	25,160	25,185	25,210	25,235	25,260	25,285	25,310	25,335	25,360	25,385	25,410	25,435	25,460	25,485	25,510	25,535	25,560	25,585	25,610	25,635	25,660	25,685	25,710	25,735	25,760	25,785	25,810	25,835	25,860	25,885	25,910	25,935	25,960	25,985	26,010	26,035	26,060	26,085	26,110	26,135	26,160	26,185	26,210	26,235	26,260	26,285	26,310	26,335	26,360	26,385	26,410	26,435	26,460	26,485	26,510	26,535	26,560	26,585	26,610	26,635	26,660	26,685	26,710	26,735	26,760	26,785	26,810	26,835	26,860	26,885	26,910	26,935	26,960	26,985	27,010	27,035	27,060	27,085	27,110	27,135	27,160	27,185	27,210	27,235	27,260	27,285	27,310	27,335	27,360	27,385	27,410	27,435	27,460	27,485	27,510	27,535	27,560	27,585	27,610	27,635	27,660	27,685	27,710	27,735	27,760	27,785	27,810	27,835	27,860	27,885	27,910	27,935	27,960	27,985	28,010	28,035	28,060	28,085	28,110	28,135	28,160	28,185	28,210	28,235	28,260	28,285	28,310	28,335	28,360	28,385	28,410	28,435	28,460	28,485	28,510	28,535	28,560	28,585	28,610	28,635	28,660	28,685	28,710	28,735	28,760	28,785	28,810	28,835	28,860	28,885	28,910	28,935	28,960	28,985	29,010	29,035	29,060	29,085	29,110	29,135	29,160	29,185	29,210	29,235	29,260	29,285	29,310	29,335	29,360	29,385	29,410	29,435	29,460	29,485	29,510	29,535	29,560	29,585	29,610	29,635	29,660	29,685	29,710	29,735	29,760	29,785	29,810	29,835	29,860	29,885	29,910	29,935	29,960	29,985	30,010	30,035	30,060	30,085	30,110	30,135	30,160	30,185	30,210	30,235	30,260	30,285	30,310	30,335	30,360	30,385	30,410	30,435	30,460	30,485	30,510	30,535	30,560	30,585	30,610	30,635	30,660	30,685	30,710	30,735	30,760	30,785	30,810	30,835	30,860	30,885	30,910	30,935	30,960	30,985	31,010	31,035	31,060	31,085	31,110	31,135	31,160	31,185	31,210	31,235	31,260	31,285	31,310	31,335	31,360	31,385	31,410	31,435	31,460	31,485	31,510	31,535	31,560	31,585	31,610	31,635	31,660	31,685	31,710	31,735	31,760	31,785	31,810	31,835	31,860	31,885	31,910	31,935	31,960	31,985	32,010	32,035	32,060	32,085	32,110	32,135	32,160	32,185	32,210	32,235	32,260	32,285	32,310	32,335	32,360	32,385	32,410	32,435	32,460	32,485	32,510	32,

Annex 4.6-8 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
15	UVS Aimag Total	2,265	2,368	2,470	2,573	2,675	2,778	2,880	2,983	3,126	3,270	3,413	3,557	3,700	3,897	4,093	4,290	4,486	4,683	4,879	5,076
15	Total of Sum Centres	552	577	602	627	653	678	703	728	763	798	834	869	904	952	1,000	1,048	1,097	1,145	1,193	1,241
15	2 Barunтуруун	75	78	82	85	89	92	96	99	104	108	113	117	122	129	135	142	148	155	161	168
15	3 Bokhmurun	26	27	28	29	31	32	33	34	36	38	39	41	43	45	47	49	52	54	56	58
15	4 Davst	19	20	21	22	23	24	25	26	27	29	30	31	32	33	34	36	37	39	40	42
15	5 Zavkhan	27	28	30	31	32	33	35	36	38	40	41	43	45	47	50	52	54	56	59	61
15	6 Zuungobi	19	20	21	22	22	23	24	25	26	27	29	30	31	33	34	36	37	39	40	42
15	7 Zuurkhangai	22	23	24	25	25	26	27	28	29	31	32	34	35	37	39	41	42	44	46	48
15	8 Malchin	22	23	24	25	26	27	28	29	30	32	33	35	36	38	40	42	44	46	48	50
15	9 Naranbulag	26	27	29	30	31	32	34	35	37	38	40	41	43	45	48	50	52	54	57	59
15	10 Ulgi	17	18	19	20	20	21	22	23	24	25	26	27	28	30	31	33	34	36	37	39
15	11 Umnugobi	36	38	39	41	42	44	45	47	49	52	54	57	59	62	65	68	72	75	78	81
15	12 Undurkhangai	45	47	49	51	53	55	57	59	62	65	68	71	74	78	82	86	89	93	97	101
15	13 Sagii	24	25	26	27	29	30	31	32	34	35	37	38	40	42	44	46	48	50	52	54
15	14 Tarialan	61	64	67	70	72	75	78	81	85	89	92	96	100	105	111	116	122	127	133	138
15	15 Turgan	24	25	26	27	29	30	31	32	33	35	36	38	39	41	43	45	48	50	52	54
15	16 Tes	26	27	28	29	31	32	33	34	36	37	39	40	42	44	47	49	51	53	56	58
15	17 Kharhiraa	6	6	7	7	7	7	8	8	8	9	9	9	10	11	11	12	12	13	13	14
15	18 Khovd	12	13	13	14	14	15	15	16	17	18	18	19	20	21	22	23	25	26	27	28
15	19 Khyrgas	21	22	23	24	25	26	27	28	29	31	32	34	35	37	39	41	42	44	46	48
15	20 Tsagaankhairkhan	44	46	48	50	51	53	55	57	60	63	65	68	71	75	79	83	86	90	94	98
16	KHOVD Aimag Total	3,053	3,195	3,338	3,480	3,622	3,764	3,907	4,049	4,243	4,438	4,632	4,827	5,021	5,288	5,554	5,821	6,088	6,355	6,621	6,888
16	Total of Sum Centres	881	922	963	1,004	1,044	1,085	1,126	1,167	1,223	1,279	1,336	1,392	1,448	1,525	1,601	1,678	1,754	1,831	1,907	1,984
16	2 Altai	37	39	40	42	44	46	47	49	51	54	56	59	61	64	67	70	74	77	80	83
16	3 Bugan	170	178	186	194	202	210	218	226	237	248	258	269	280	295	310	325	339	354	369	384
16	4 Buyant	55	58	60	63	65	68	70	73	77	80	84	87	91	96	100	105	110	115	119	124
16	5 Davi	67	70	73	76	79	82	85	88	92	97	101	106	110	116	122	128	133	139	145	151
16	6 Durgun	53	55	58	60	63	65	68	70	73	77	80	84	87	92	96	101	105	110	114	119
16	7 Duit	20	21	22	23	23	24	25	26	27	28	30	31	32	34	36	38	39	41	43	45
16	8 Zereg	44	46	48	50	52	54	56	58	61	64	66	69	72	76	80	84	87	91	95	99
16	9 Mankhan	64	67	70	73	76	79	82	85	89	93	97	101	105	111	116	122	127	133	138	144
16	10 Munkkhaan	13	14	14	15	15	16	16	17	18	19	19	20	21	22	23	24	26	27	28	29
16	11 Must	59	62	65	68	70	73	76	79	83	87	90	94	98	103	108	113	119	124	129	134
16	12 Myngad	38	40	41	43	45	47	48	50	52	55	57	60	62	65	69	72	75	78	82	85
16	13 Uench	107	112	117	122	127	132	137	142	149	156	162	169	176	185	195	204	213	222	232	241
16	14 Khovd	35	37	38	40	42	44	45	47	49	51	54	56	58	61	64	67	70	73	76	79
16	15 Tsetseg	48	50	52	54	57	59	61	63	66	69	72	75	78	82	86	90	95	99	103	107
16	16 Chandman	35	37	38	40	41	43	44	46	48	51	53	56	58	61	64	67	70	73	76	79
16	17 Erdeneburen	36	38	39	41	43	45	46	48	50	52	55	57	59	62	65	68	72	75	78	81

Annex 4.6-9 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
17	KHUVSGUL Aimag Total	6,286	6,467	6,667	6,868	7,069	7,270	7,470	7,671	7,872	8,073	8,274	8,475	8,676	8,877	9,078	9,279	9,480	9,681	9,882	10,083
17	Total of Sum Centres	2,201	2,272	2,342	2,413	2,484	2,555	2,625	2,696	2,767	2,838	2,909	2,980	3,051	3,122	3,193	3,264	3,335	3,406	3,477	3,548
17	2 Alag-Erdene	60	62	64	66	67	69	71	73	75	77	79	81	83	85	87	89	91	93	95	97
17	3 Arbulag	95	98	101	104	107	110	113	116	119	122	125	128	131	134	137	140	143	146	149	152
17	4 Bayanzurkh	73	75	78	80	83	85	88	90	93	96	99	102	105	108	111	114	117	120	123	126
17	5 Burentogtokh	116	120	123	127	131	135	138	142	146	150	154	158	162	166	170	174	178	182	186	190
17	6 Burenkhaan	17	18	18	19	19	20	20	21	22	23	24	25	26	27	28	29	30	31	32	33
17	7 Galt	54	56	57	59	61	63	64	66	69	72	76	79	82	86	91	95	100	104	109	113
17	8 Jargalant	105	108	112	115	119	122	126	129	133	137	141	145	149	153	157	161	165	169	173	177
17	9 Jikh-Uul	124	128	132	136	140	144	148	152	156	160	164	168	172	176	180	184	188	192	196	200
17	10 Reshaant	81	84	86	89	91	94	96	99	104	109	113	118	123	129	136	142	149	155	162	168
17	11 Renchinkhumbе	81	84	86	89	91	94	96	99	104	109	113	118	123	129	136	142	149	155	162	168
17	12 Tarialan	286	295	304	313	323	332	341	350	360	370	380	390	400	410	420	430	440	450	460	470
17	13 Tosontsengel	81	84	86	89	91	94	96	99	104	109	113	118	123	129	136	142	149	155	162	168
17	14 Tumurbulag	73	75	78	80	83	85	88	90	94	98	103	107	111	117	123	129	134	140	146	152
17	15 Tunel	64	66	68	70	73	75	77	79	83	86	90	93	97	102	108	113	118	123	129	134
17	16 Ulaan-Uul	79	81	84	86	89	91	94	96	101	105	110	114	119	125	132	138	145	151	158	164
17	17 Khankh	73	75	78	80	82	84	87	89	93	97	102	106	110	116	122	128	133	139	145	151
17	18 Khatalgal	180	186	191	197	203	209	214	220	231	241	252	262	273	287	302	316	331	345	360	374
17	19 Tsagaanuur	48	50	51	53	54	56	57	59	62	65	67	70	73	77	81	85	88	92	96	100
17	20 Tsagaan-Uul	141	146	150	155	159	164	168	173	181	189	198	206	214	225	237	248	260	271	283	294
17	21 Tsagaan-uur	64	66	68	70	73	75	77	79	83	87	90	94	98	103	108	113	119	124	129	134
17	22 Tsetsenbag	81	84	86	89	91	94	96	99	104	109	113	118	123	130	136	143	149	156	162	169
17	23 Chandman Undur	85	88	90	93	96	99	101	104	109	114	119	124	129	136	143	150	156	163	170	177
17	24 Shine-Ider	70	72	75	77	79	81	84	86	90	94	99	103	107	113	118	124	130	136	141	147
17	25 Erdenebulgan	70	72	75	77	79	81	84	86	90	94	99	103	107	113	118	124	130	136	141	147
18	KHENTI Aimag Total	3,696	3,807	3,919	4,030	4,141	4,252	4,364	4,475	4,586	4,697	4,808	4,919	5,030	5,141	5,252	5,363	5,474	5,585	5,696	5,807
18	Total of Sum Centres	1,986	2,046	2,105	2,165	2,225	2,285	2,344	2,404	2,464	2,524	2,584	2,644	2,704	2,764	2,824	2,884	2,944	3,004	3,064	3,124
18	2 Galsar	27	28	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
18	3 Bayankhutaagt	55	57	58	60	61	63	64	66	69	72	76	79	82	86	91	95	100	104	109	113
18	4 Darkhan	29	30	31	32	32	33	33	34	35	37	38	40	41	43	45	48	50	52	54	57
18	5 Bayanmunkh	40	41	43	44	45	46	48	49	51	53	56	58	60	63	67	70	73	76	80	83
18	6 Delgerkhaan	57	59	60	62	63	65	66	68	71	75	78	82	85	89	94	98	103	107	112	116
18	7 Jargalkhaan	30	31	32	33	34	35	36	37	39	41	42	44	46	48	51	53	55	57	60	62
18	8 Tsenkhermandal	46	47	49	50	51	52	54	55	58	61	63	66	69	73	76	80	83	87	90	94
18	9 Munun	137	141	145	149	153	157	161	165	173	181	189	197	205	216	227	238	248	259	270	281
18	10 Umnudeger	50	52	53	55	56	58	59	61	64	67	69	72	75	79	83	87	91	95	99	103
18	11 Bayanadruga	86	89	91	94	96	99	101	104	109	114	118	123	128	135	142	149	155	162	169	176
18	12 Binder	43	44	46	47	48	49	51	52	55	57	60	62	65	68	72	75	79	82	86	89
18	13 Batshireet	43	44	46	47	48	49	51	52	55	57	60	62	65	68	72	75	79	82	86	89
18	14 Balmorov	43	44	46	47	48	49	51	52	55	57	60	62	65	68	72	75	79	82	86	89
18	15 Berkh	166	171	176	181	186	191	196	201	211	221	230	240	250	263	276	289	303	316	329	342
18	16 Bayan-Ovoo	28	29	30	31	31	32	33	34	36	38	39	41	43	45	48	50	52	54	57	59
18	17 Khajuu-Ulaan	86	89	91	94	97	100	102	105	110	115	120	125	130	137	144	151	157	164	171	178
18	18 Norovlin	47	48	50	51	53	54	56	57	60	63	65	68	71	75	79	83	86	90	94	98
18	19 Dadaal	69	71	73	75	78	80	82	84	88	92	96	100	104	110	115	121	126	132	137	143
18	20 Ulizit	56	58	59	61	63	65	66	68	71	74	78	81	84	89	93	98	102	107	111	116
18	21 Gurbambuleg	44	45	47	48	49	50	52	53	56	58	61	63	66	70	73	77	80	84	87	91
18	22 Bor-Undur	772	795	819	842	865	888	912	935	960	1,025	1,069	1,114	1,159	1,221	1,282	1,344	1,405	1,467	1,528	1,590

Annex 4.6-10 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
19	DARKHAN-UUL Aimag Total	7,045	7,292	7,538	7,785	8,031	8,278	8,524	8,771	9,160	9,550	9,939	10,329	10,718	11,257	11,796	12,335	12,874	13,413	13,952	14,491
19	Total of Sum Centres	945	963	980	998	1,015	1,033	1,050	1,068	1,116	1,163	1,211	1,258	1,306	1,372	1,437	1,503	1,568	1,634	1,699	1,765
19	P-2 2007	651	663	675	687	700	712	724	736	769	802	834	867	900	945	990	1,035	1,081	1,126	1,171	1,216
19	P-2 2008	176	179	183	186	189	192	196	199	208	217	225	234	243	255	268	280	292	304	317	329
19	P-2 2009	118	120	122	124	127	129	131	133	139	145	151	157	163	171	179	187	196	204	212	220
20	ORKHON Aimag Total	17,512	18,267	19,022	19,777	20,533	21,288	22,043	22,798	23,893	24,988	26,084	27,179	28,274	29,776	31,278	32,780	34,283	35,785	37,287	38,789
20	Total of Sum Centres	2,161	2,254	2,347	2,440	2,534	2,627	2,720	2,813	2,948	3,083	3,218	3,353	3,488	3,673	3,859	4,044	4,230	4,415	4,601	4,786
20	P-1 2004	2,161	2,254	2,347	2,440	2,534	2,627	2,720	2,813	2,948	3,083	3,218	3,353	3,488	3,673	3,859	4,044	4,230	4,415	4,601	4,786
20	Jarqalant	792	792	792	792	792	792	792	792	792	792	793	793	793	835	877	919	962	1,004	1,046	1,088
21	GOBISUMBER Aimag Total	217	217	217	217	217	217	217	217	217	217	217	217	217	229	240	252	263	275	286	298
21	Total of Sum Centres	217	217	217	217	217	217	217	217	217	217	217	217	217	229	240	252	263	275	286	298
21	P-1 2004	191	191	191	191	191	191	191	191	191	191	191	191	191	201	211	221	232	242	252	262
21	P-2 2010	26	26	26	26	26	26	26	26	26	26	26	26	26	27	29	30	32	33	35	36
22	NALAIKH Aimag Total	2,421	2,545	2,668	2,792	2,916	3,040	3,163	3,287	3,445	3,603	3,761	3,919	4,077	4,294	4,510	4,727	4,943	5,160	5,376	5,593
22	Total of Sum Centres	196	206	217	227	237	247	258	268	281	294	306	319	332	350	367	385	402	420	437	455
22	P-3 2011	120	126	133	139	145	151	158	164	172	180	187	195	203	214	224	235	246	257	267	278
22	P-4 2016	27	28	30	31	33	34	36	37	39	41	42	44	46	48	51	53	56	58	61	63
22	P-4 2016	27	28	30	31	33	34	36	37	39	41	42	44	46	48	51	53	56	58	61	63
22	P-4 2017	22	23	24	25	27	28	29	30	31	33	34	36	37	39	41	43	45	47	49	51
23	BAGANUUR Aimag Total	3,144	3,144	3,144	3,144	3,144	3,144	3,144	3,144	3,235	3,327	3,418	3,510	3,601	3,792	3,984	4,175	4,367	4,558	4,750	4,941
23	Total of Sum Centres	28,795	29,797	30,798	31,800	32,801	33,803	34,804	35,806	37,508	39,211	40,913	42,616	44,318	46,070	49,021	51,373	53,725	56,077	58,428	60,780
23	Total of Aimag/Districts	92,138	95,540	98,943	102,345	105,747	109,149	112,552	115,954	121,389	126,824	132,258	137,693	143,128	150,701	158,274	165,847	173,421	180,994	188,567	196,140
24	Ulaanbaatar	75,449	79,309	83,169	87,029	90,890	94,750	98,610	102,470	107,393	112,316	117,238	122,161	127,084	133,836	140,588	147,340	154,093	160,845	167,597	174,349
	National Total	167,587	174,849	182,112	189,374	196,637	203,899	211,162	218,424	228,782	239,139	249,497	259,854	270,212	284,537	298,863	313,188	327,513	341,838	356,164	370,489

Annex 4.6-11 Demand Forecast of Fixed Telephone for Sums (Medium Growth-Medium Rate)

		Demand																			
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
GDP	Aimag	442.7	461.243	479.786	498.329	516.871	535.414	553.957	572.5	597.44	622.38	647.32	672.26	697.2	729.371	761.543	793.714	825.886	858.057	890.229	922.4
	Ulaanbaatar	891.8	912.857	933.914	954.971	976.029	997.086	1018.14	1039.20	1072.56	1105.92	1139.28	1172.64	1206.00	1272.91	1339.83	1406.74	1473.66	1540.57	1607.49	1674.40
	National Total	590.9	612.571	634.243	655.914	677.586	699.257	720.929	742.6	771.74	800.88	830.02	859.16	888.3	928.443	968.586	1008.73	1048.87	1089.01	1129.16	1169.30
Pop.	Aimag	1616618	1628395	1640173	1651950	1663727	1675504	1687282	1699059	1718782	1738505	1758228	1777951	1797674	1823241	1848808	1874375	1899943	1925510	1951077	1976644
	Ulaanbaatar	750840	774820	798801	822781	846761	870741	894722	918702	938977	959252	979528	999803	1020078	1036729	1053381	1070032	1086683	1103334	1119986	1136637
	National Total	2412818	2450024	2487230	2524436	2561641	2598847	2636053	2673259	2714482	2755705	2796928	2838151	2879374	2922598	2965823	3009047	3052271	3095495	3138720	3181944
Telep.	Aimag	5.69943	5.86017	6.02091	6.18165	6.34238	6.50312	6.66386	6.8246	7.05205	7.2795	7.50695	7.7344	7.96184	8.24199	8.52214	8.80229	9.08244	9.36258	9.64273	9.92288
Densiti	Ulaanbaatar	10.0486	10.2065	10.3644	10.5223	10.6801	10.838	10.9959	11.1538	11.4147	11.6756	11.9365	12.1974	12.4583	12.8698	13.2813	13.6929	14.1044	14.5159	14.9275	15.339
	National Total	6.9457	7.1207	7.2957	7.4707	7.6457	7.8207	7.9957	8.1707	8.41344	8.65618	8.89892	9.14166	9.3844	9.70713	10.0299	10.3526	10.6753	10.998	11.3208	11.6435

Annex 4.7

Tendency of 43 Asian Countries for Mobile Telephone (ITU Year Book 2001.2)

	Name of Country	Year	GDP	Teledensity
Asia	1 Armenia		525	0.23
	2 Azerbaijan		520	5.56
	3 Bahrain		10,192	30.05
	4 Bangladesh		279	0.12
	5 Brunei Darussalam	[98]	13,724	20.52
	6 Cambodia		175	1.00
	7 China		782	6.67
	8 Georgia		526	1.88
	9 Hongkong SAR		23,611	63.61
	10 India	[98]	435	0.35
	11 Indonesia		675	1.73
	12 Iran(I.R.)		3,802	1.51
	13 Israel		16,228	70.18
	14 Japan		34,377	52.62
	15 Jordan		1,150	5.83
	16 Kazakhstan		973	0.30
	17 Korea(Rep.)		8,685	56.69
	18 Kuwait		15,874	15.82
	19 Kyrgyzstan		265	0.06
	20 Lao P.D.R.		274	0.23
	21 Lebanon		4,980	19.38
	22 Macau SAR		14,079	27.22
	23 Malaysia		3,607	15.48
	24 Maldives	[98]	717	2.63
	25 Mongolia		326	4.04
	26 Myanmar		5,504	0.06
	27 Nepal		222	0.04
	28 Oman		6,418	6.48
	29 Pakistan		458	0.21
	30 Philippines		1,030	8.36
	31 Qatar	[97]	16,157	19.96
	32 Saudi Arabia		6,660	4.00
	33 Singapore		21,881	68.38
	34 Sri Lanka		846	2.38
	35 Syria	[98]	1,134	0.17
	36 Taiwan-China		13,392	80.31
	37 Tajikistan		178	0.01
	38 Thailand		2,038	4.39
	39 Turkmenistan	[98]	582	0.09
	40 United Arab Emirates	[98]	19,750	58.51
	41 Uzbekistan		608	0.22
	42 Viet Nam		363	0.42
	43 Yemen		384	0.16

Annex 4.8-1

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/Low GRDP)(1/3)

1 USD =448.61 Tg

No	Name of Aimag	GRDP (million Tg.)			GRDP (kilo USD)			Population				
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2020	
1	Arkhangai	15,350	19,366	23,224	34,217	43,169	51,769	73,819	97,343	95,551	99,609	108,675
2	Bayan-Ulgii	12,152	14,152	16,971	27,088	31,546	37,830	53,944	95,926	110,235	122,414	138,801
3	Bayankhongor	19,828	23,090	27,690	44,199	51,470	61,724	88,016	85,447	87,843	92,164	100,554
4	Bulgan	12,792	14,897	17,864	28,515	33,207	39,821	56,784	60,836	62,765	65,085	71,008
5	Govi-Altai	11,513	13,407	16,078	25,664	29,886	35,840	51,107	65,726	57,941	59,897	65,355
6	Dornogovi	10,873	12,662	15,185	24,237	28,225	33,849	48,267	50,253	56,816	60,900	66,455
7	Dornod	8,954	8,938	10,719	19,959	19,924	23,894	34,070	74,142	75,891	78,206	85,347
8	Dundgovi	4,477	7,448	8,932	9,980	16,602	19,910	28,392	51,572	51,367	53,949	58,860
9	Zavkhan	10,873	12,662	15,185	24,237	28,225	33,849	48,267	86,852	81,453	80,978	88,351
10	Uvurkhangai	12,792	17,131	20,544	28,515	38,187	45,795	65,302	114,097	118,530	124,851	138,168
11	Umnugovi	9,594	11,173	13,398	21,386	24,906	29,866	42,589	46,286	51,910	55,464	60,514
12	Sukhbaatar	11,513	12,662	15,185	25,664	28,225	33,849	48,267	55,649	56,612	58,672	64,014
13	Selenge	19,828	17,876	21,437	44,199	39,848	47,785	68,142	97,116	111,503	119,592	130,488
14	Tuv	15,990	17,131	20,544	35,643	38,187	45,795	65,302	98,757	100,884	105,756	115,379
15	Uvs	8,954	10,428	12,505	19,959	23,245	27,875	39,749	86,415	79,102	77,521	84,586
16	Khovd	12,152	14,152	16,971	27,088	31,546	37,830	53,944	89,963	94,562	101,688	112,300
17	Khuvsgul	24,944	26,814	32,156	55,603	59,771	71,679	102,211	118,768	123,248	130,202	142,059
18	Khentii	14,711	15,642	18,758	32,792	34,868	41,814	59,624	69,291	72,877	75,545	82,431
19	Darkhan-Uul	11,513	13,407	16,078	25,664	29,886	35,840	51,107	86,033	100,100	110,537	123,923
20	Orkhon	69,716	79,698	95,575	155,404	177,655	213,047	303,796	73,815	95,606	109,307	122,639
21	Govisumber	2,558	2,235	2,680	5,702	4,982	5,974	8,517	12,331	14,263	15,337	16,737
	Aimag Total/Average	321,077	364,971	437,679	715,715	813,560	975,634	1,391,217	1,616,618	1,699,059	1,797,674	1,976,644
22	Nalaikh	9,635	11,490	13,779	21,477	25,613	30,715	43,799	24,084	29,467	32,719	36,457
23	Baganuur	8,511	10,150	12,172	18,972	22,626	27,133	38,691	21,275	26,031	28,903	32,206
	District Total/Average	18,146	21,640	25,951	40,450	48,239	57,848	82,489	45,360	55,498	61,622	68,663
24	Ulaanbaatar	300,375	358,230	429,591	669,568	798,533	957,604	1,365,515	750,840	918,702	1,020,078	1,136,637
	National Total/Average	639,598	744,841	893,221	1,425,733	1,660,331	1,991,086	2,839,221	2,412,818	2,673,259	2,879,374	3,181,944

Annex 4.8-2

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/Low GRDP)(2/3)

No	Name of Aimag	GRDP/Capita (USD)			Weighted GRDP/Capita			Provisional Teledensity			Provisional Demand			
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2020
1	Arkhangai	351.5	451.8	519.7	0.59487	0.72741	0.75158	5.130	6.803	8.210	4.994	6,501	8,178	12,123
2	Bayan-Ulgii	282.4	286.2	309.0	0.47789	0.46076	0.44691	4.121	4.309	4.882	3,954	4,751	5,977	8,859
3	Bayankhongor	517.3	585.9	669.7	0.87539	0.94340	0.96850	7.549	8.823	10.579	6,451	7,751	9,751	14,455
4	Bulgan	468.7	529.1	611.8	0.79322	0.85184	0.89478	6.840	7.967	9.665	4,162	5,001	6,291	9,326
5	Govi-Altai	390.5	515.8	598.4	0.66080	0.83047	0.86530	5.698	7.767	9.452	3,746	4,501	5,662	8,393
6	Dornogovi	482.3	496.8	555.8	0.81622	0.79985	0.80378	7.039	7.481	8.780	3,538	4,251	5,348	7,927
7	Dornod	269.2	262.5	305.5	0.45559	0.42270	0.44183	3.929	3.953	4.826	2,913	3,001	3,775	5,595
8	Dundgovi	193.5	323.2	369.1	0.32748	0.52039	0.53371	2.824	4.867	5.830	1,457	2,501	3,146	4,663
9	Zavkhan	279.1	346.5	418.0	0.47227	0.55792	0.60449	4.073	5.218	6.603	3,538	4,251	5,348	7,927
10	Uvurkhangai	249.9	322.2	366.8	0.42284	0.51872	0.53043	3.647	4.851	5.794	4,162	4,751	5,751	10,724
11	Umnugovi	462.0	479.8	538.5	0.78193	0.77250	0.77870	6.743	7.225	8.506	3,122	3,751	4,718	6,995
12	Sukhbaatar	461.2	498.6	576.9	0.78046	0.80273	0.83430	6.730	7.508	9.114	3,746	4,251	5,348	7,927
13	Selenge	455.1	357.4	399.6	0.77020	0.57539	0.57783	6.642	5.381	6.312	6,451	6,001	7,549	11,191
14	Tuv	360.9	378.5	433.0	0.61080	0.60945	0.62621	5.267	5.700	6.840	5,202	5,751	7,235	10,724
15	Uvs	231.0	293.9	359.6	0.39088	0.47314	0.52000	3.371	4.425	5.680	2,913	3,501	4,404	6,528
16	Khovd	301.1	333.6	372.0	0.50957	0.53713	0.53799	4.394	5.023	5.877	3,954	4,751	5,977	8,859
17	Khuvsgul	468.2	485.0	550.5	0.79229	0.78083	0.79613	6.832	7.303	8.697	8,115	9,001	11,324	16,786
18	Kheniti	473.3	478.4	553.5	0.80091	0.77033	0.80042	6.907	7.205	8.743	4,786	5,251	6,606	9,792
19	Darkhan-Uul	298.3	298.6	324.2	0.50483	0.48070	0.48888	4.353	4.496	5.122	3,746	4,501	5,662	8,393
20	Orkhon	2,105.3	1,858.2	1,949.1	3.56291	2.99185	2.81861	30.725	27.981	30.789	22,680	26,752	33,655	49,890
21	Govisumber	462.4	349.3	369.5	0.78256	0.58240	0.56329	6.748	5.280	6.153	833	751	944	1,399
	Aimag Total/Average	442.7	478.8	542.7	0.74924	0.77095	0.78485	6.461	7.210	8.573	104,463	122,522	154,133	228,476
22	Nalaikh	891.8	869.2	938.7	1.50915	1.39948	1.35756	13.014	13.089	14.829	3,135	3,857	4,853	7,193
23	Baganuur	891.8	869.2	938.8	1.50915	1.39945	1.35757	13.014	13.088	14.829	2,769	3,408	4,287	6,354
	District Total/Average	891.8	869.2	938.8	1.50915	1.39947	1.35756	13.014	13.088	14.829	5,904	7,265	9,140	13,547
24	Ulaanbaatar	891.8	869.2	938.8	1.50915	1.39947	1.35757	13.014	13.089	14.829	97,716	120,245	151,272	224,245
	National Total/Average	590.9	621.1	691.5	1.00000	1.00000	1.00000	8.623	9.352	10.924	208,083	250,032	314,545	466,268

National Macroscopic Teledensity

Annex 4.8-3

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/Low GRDP)(3/3)

No	Name of Aimag	Adjusted Demand			Adjusted Teledensity				
		y2001	y2008	y2013	y2020	y2001	y2008	y2013	y2020
1	Arkhangai	4,994	6,501	8,178	12,123	5.13	6.80	8.21	11.16
2	Bayan-Ulgii	3,954	4,751	5,977	8,859	4.12	4.31	4.88	6.38
3	Bayankhongor	6,451	7,751	9,751	14,455	7.55	8.82	10.58	14.38
4	Bulgan	4,162	5,001	6,291	9,326	6.84	7.97	9.67	13.13
5	Govi-Altai	3,746	4,501	5,662	8,393	5.70	7.77	9.45	12.84
6	Dornogovi	3,538	4,251	5,348	7,927	7.04	7.48	8.78	11.93
7	Dornod	2,913	3,001	3,775	5,595	3.93	3.95	4.83	6.56
8	Dundgovi	1,457	2,501	3,146	4,663	2.83	4.87	5.83	7.92
9	Zavkhan	3,538	4,251	5,348	7,927	4.07	5.22	6.60	8.97
10	Uvurkhangai	4,162	5,751	7,235	10,724	3.65	4.85	5.79	7.76
11	Umnugovi	3,122	3,751	4,718	6,995	6.75	7.23	8.51	11.56
12	Sukhbaatar	3,746	4,251	5,348	7,927	6.73	7.51	9.12	12.38
13	Selenge	6,451	6,451	7,549	11,191	6.64	5.79	6.31	8.58
14	Tuv	5,202	5,751	7,235	10,724	5.27	5.70	6.84	9.29
15	Uvs	2,913	3,501	4,404	6,528	3.37	4.43	5.68	7.72
16	Khovd	3,954	4,751	5,977	8,859	4.40	5.02	5.88	7.89
17	Khuvsgul	8,115	9,001	11,324	16,786	6.83	7.30	8.70	11.82
18	Khentii	4,786	5,251	6,606	9,792	6.91	7.21	8.74	11.88
19	Darkhan-Uul	3,746	4,501	5,662	8,393	4.35	4.50	5.12	6.77
20	Orkhon	22,680	26,752	33,655	49,890	30.73	27.98	30.79	40.68
21	Govisumber	833	833	944	1,399	6.76	5.84	6.16	8.36
	Aimag Total/Average	104,463	123,054	154,133	228,476	6.46	7.24	8.57	11.56
22	Nalaikh	3,135	3,857	4,853	7,193	13.02	13.09	14.83	19.73
23	Baganuur	2,769	3,408	4,287	6,354	13.02	13.09	14.83	19.73
	District Total/Average	5,904	7,265	9,140	13,547	13.02	13.09	14.83	19.73
24	Ulaanbaatar	97,716	120,245	151,272	224,245	13.01	13.09	14.83	19.73
	National Total/Average	208,083	250,564	314,545	466,288	8.62	9.37	10.92	14.65

Annex 4.8-4

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/Medium GRDP)(1/3)

1 USD =448.61 Tg.

No	Name of Aimag	GRDP (million Tg.)						GRDP (kilo USD)						Population							
		y 2001		y 2008		y 2013		y 2001		y 2008		y 2013		y 2001		y 2008		y 2013		y 2020	
1	Arkhangai	15,350	23,154	29,834	43,399	51,613	66,503	34,217	51,613	66,503	96,741	97,343	95,551	99,609	108,675						
2	Bayan-Ulgii	12,152	16,921	21,802	31,715	37,719	48,599	27,088	37,719	48,599	70,696	95,926	110,235	122,414	138,801						
3	Bayankhongor	19,828	27,607	35,571	51,745	61,539	79,292	44,199	61,539	79,292	115,345	85,447	87,843	92,164	100,554						
4	Bulgan	12,792	17,811	22,949	33,384	39,703	51,156	28,515	39,703	51,156	74,417	60,836	62,765	65,085	71,008						
5	Govi-Altai	11,513	16,030	20,654	30,045	35,733	46,040	25,664	35,733	46,040	66,974	65,726	57,941	59,897	65,355						
6	Dornogovi	10,873	15,139	19,507	28,376	33,746	43,483	24,237	33,746	43,483	63,253	50,253	56,816	60,900	66,455						
7	Dornod	8,954	10,687	13,770	20,030	23,822	30,695	19,959	23,822	30,695	44,649	74,142	75,891	78,206	85,347						
8	Dundgovi	4,477	8,906	11,475	16,692	19,852	25,579	9,980	19,852	25,579	37,208	51,572	51,367	53,949	58,860						
9	Zavkhan	10,873	15,139	19,507	28,376	33,746	43,483	24,237	33,746	43,483	63,253	86,852	81,453	80,978	88,351						
10	Uvurkhangai	12,792	20,483	26,392	38,391	45,659	58,831	28,515	45,659	58,831	85,578	114,097	118,530	124,851	138,168						
11	Umnugovi	9,594	13,358	17,212	25,038	29,776	38,367	21,386	29,776	38,367	55,812	46,286	51,910	55,464	60,514						
12	Sukhbaatar	11,513	15,139	19,507	28,376	33,746	43,483	25,664	33,746	43,483	63,253	55,649	56,612	58,672	64,014						
13	Selenge	19,828	21,373	27,539	40,061	47,643	61,387	44,199	47,643	61,387	89,300	97,116	111,503	119,592	130,488						
14	Tuv	15,990	20,483	26,392	38,391	45,659	58,831	35,643	45,659	58,831	85,578	98,757	100,884	105,756	115,379						
15	Uvs	8,954	12,468	16,065	23,369	27,793	35,811	19,959	27,793	35,811	52,092	86,415	79,102	77,521	84,586						
16	Khovd	12,152	16,921	21,802	31,715	37,719	48,599	27,088	37,719	48,599	70,696	89,963	94,562	101,688	112,300						
17	Khuvsgul	24,944	32,060	41,309	60,091	71,465	92,082	55,603	71,465	92,082	133,949	118,768	123,248	130,202	142,059						
18	Khentii	14,711	18,702	24,097	35,053	41,689	53,715	32,792	41,689	53,715	78,137	69,291	72,877	75,545	82,431						
19	Darkhan-Uul	11,513	16,030	20,654	30,045	35,733	46,040	25,664	35,733	46,040	66,974	86,033	100,100	110,537	123,923						
20	Orkhon	69,716	95,289	122,778	178,603	212,409	273,685	155,404	212,409	273,685	398,125	73,815	95,606	109,307	122,639						
21	Govisumber	2,558	2,672	3,442	5,008	5,956	7,673	5,702	5,956	7,673	11,163	12,331	14,263	15,337	16,737						
	Aimag Total/Average	321,077	436,372	562,258	817,903	972,720	1,253,334	715,715	972,720	1,253,334	1,823,194	1,616,618	1,699,059	1,797,674	1,976,644						
22	Nalaikh	9,635	13,738	17,701	25,749	30,623	39,458	21,477	30,623	39,458	57,398	24,084	29,467	32,719	36,457						
23	Baganuur	8,511	12,136	15,637	22,746	27,052	34,856	18,972	27,052	34,856	50,704	21,275	26,031	28,903	32,206						
	District Total/Average	18,146	25,874	33,338	48,496	57,675	74,313	40,450	57,675	74,313	108,102	45,360	55,498	61,622	68,663						
24	Ulaanbaatar	300,375	428,308	551,868	802,790	954,745	1,230,174	669,568	954,745	1,230,174	1,789,506	750,840	918,702	1,020,078	1,136,637						
	National Total/Average	639,598	890,554	1,147,464	1,669,189	1,985,141	2,557,821	1,425,733	1,985,141	2,557,821	3,720,802	2,412,818	2,673,259	2,879,374	3,181,944						

Annex 4.8-5

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/Medium GRDP)(2/3)

No	Name of Aimag	GRDP/Capita (USD)			Weighted GRDP/Capita			Provisional Tele-density			Provisional Demand						
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013				
1	Arkhangai	351.5	540.2	667.6	890.2	0.59487	0.72740	0.75157	0.76127	5.130	8.704	10.964	14.167	4.994	8.318	10.922	15.396
2	Bayan-Ulgii	282.4	342.2	397.0	509.3	0.47789	0.46077	0.44691	0.43557	4.121	5.514	8.520	8.106	3.954	6.079	7.981	11.251
3	Bayankhongor	517.3	700.6	860.3	1,147.1	0.87539	0.94339	0.96849	0.96097	7.549	11.289	14.128	18.255	6.451	9.917	13.022	18.357
4	Bulgan	466.7	632.8	786.0	1,048.0	0.79322	0.85193	0.88479	0.89623	6.840	10.193	12.907	16.678	4.162	6.398	8.401	11.843
5	Govi-Altai	390.5	616.7	768.7	1,024.8	0.66080	0.63048	0.66528	0.67636	5.688	9.938	12.623	16.308	3.746	5.759	7.561	10.659
6	Dornogovi	482.3	594.0	714.0	951.8	0.81622	0.79985	0.80377	0.81397	7.039	9.571	11.725	15.147	3.538	5.439	7.141	10.067
7	Dornod	269.2	313.9	392.5	523.1	0.45559	0.42271	0.44183	0.44738	3.929	5.058	6.445	8.325	2.913	3.839	5.041	7.106
8	Dundgovi	193.5	386.5	474.1	632.1	0.32748	0.52045	0.53374	0.54060	2.824	6.228	7.786	10.060	1.457	3.200	4.201	5.922
9	Zavkhan	279.1	414.3	537.0	715.9	0.47227	0.55792	0.60448	0.61225	4.073	6.876	8.818	11.393	3.598	5.439	7.141	10.067
10	Uvurkhangai	249.9	385.2	471.2	619.4	0.42294	0.51874	0.53044	0.52967	3.647	6.207	7.738	9.857	4.162	7.358	9.662	13.620
11	Umnugovi	462.0	573.6	691.8	922.3	0.78193	0.77245	0.77872	0.78873	6.743	9.243	11.360	14.678	3.122	4.799	6.301	8.883
12	Sukhbaatar	461.2	596.1	741.1	980.1	0.78046	0.80273	0.83429	0.84501	6.730	9.606	12.171	15.725	3.746	5.439	7.141	10.067
13	Selenge	455.1	427.3	513.3	684.4	0.77020	0.57539	0.57784	0.58525	6.642	6.885	8.429	10.891	6.451	7.678	10.081	14.212
14	Tuv	360.9	452.6	556.3	741.7	0.61080	0.60947	0.62622	0.63429	5.267	7.293	9.135	11.804	5.202	7.358	9.662	13.620
15	Uvs	231.0	351.4	461.9	615.8	0.39088	0.47314	0.52002	0.52666	3.371	5.662	7.586	9.801	2.913	4.479	5.881	8.291
16	Khovd	301.1	389.9	477.9	629.5	0.50957	0.53714	0.53800	0.53836	4.394	6.428	7.848	10.018	3.954	6.079	7.981	11.251
17	Khuvsgul	468.2	579.8	707.2	942.9	0.79229	0.78084	0.79613	0.80636	6.832	9.344	11.614	15.006	8.115	11.517	15.122	21.317
18	Khentii	473.3	572.0	711.0	947.9	0.80091	0.77033	0.80042	0.81063	6.907	9.218	11.676	15.085	4.786	6.718	8.822	12.435
19	Darkhan-Uul	298.3	357.0	416.5	540.4	0.50483	0.48071	0.46887	0.46218	4.353	5.752	6.840	8.601	3.746	5.759	7.561	10.659
20	Orkhon	2,105.3	2,221.7	2,503.8	3,246.3	3.56291	2.99184	2.81859	2.77618	30.725	35.802	41.118	51.663	22.680	34.229	44.945	63.959
21	Govisumber	462.4	417.6	500.3	667.0	0.78256	0.56235	0.56316	0.57039	6.748	6.729	8.215	10.615	833	960	1,260	1,777
	Aimag Total/Average	442.7	572.5	697.2	922.4	0.74924	0.77096	0.78484	0.78879	6.461	9.226	11.449	14.679	104.463	156.761	205.830	290.159
22	Nalaikh	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39948	1.35796	1.34639	13.014	16.747	19.804	25.055	3.135	4.935	6.480	9.135
23	Baganuur	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39948	1.35796	1.34636	13.014	16.746	19.804	25.055	2,769	4,360	5,725	8,070
	District Total/Average	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39946	1.35796	1.34638	13.014	16.747	19.804	25.055	5,904	9,295	12,205	17,205
24	Ulaanbaatar	891.8	1,039.2	1,206.0	1,574.4	1.50915	1.39947	1.35757	1.34638	13.014	16.747	19.804	25.055	97.716	153.852	202.019	284.787
	National Total/Average	580.9	742.6	888.3	1,169.3	1.00000	1.00000	1.00000	1.00000	8.623	11.966	14.586	18.609	208.083	319.908	420.054	592.151

National Macroscopic Tele-density

Annex 4.8-6

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/Medium GRDP)(3/3)

No	Name of Aimag	Adjusted Demand			Adjusted Teledensity				
		y2001	y2008	y2013	y2020	y2001	y2008	y2013	y2020
1	Arkhangai	4,994	8,318	10,922	15,396	5.13	8.71	10.96	14.17
2	Bayan-Ulgii	3,954	6,079	7,981	11,251	4.12	5.51	6.52	8.11
3	Bayankhongor	6,451	9,917	13,022	18,357	7.55	11.29	14.13	18.26
4	Bulgan	4,162	6,398	8,401	11,843	6.84	10.19	12.91	16.68
5	Govi-Altai	3,746	5,759	7,561	10,659	5.70	9.94	12.62	16.31
6	Dornogovi	3,538	5,439	7,141	10,067	7.04	9.57	11.73	15.15
7	Dornod	2,913	3,839	5,041	7,106	3.93	5.06	6.45	8.33
8	Dundgovi	1,457	3,200	4,201	5,922	2.83	6.23	7.79	10.06
9	Zavkhan	3,538	5,439	7,141	10,067	4.07	6.68	8.82	11.39
10	Uvurkhangai	4,162	7,358	9,662	13,620	3.65	6.21	7.74	9.86
11	Umnugovi	3,122	4,799	6,301	8,883	6.75	9.24	11.36	14.68
12	Sukhbaatar	3,746	5,439	7,141	10,067	6.73	9.61	12.17	15.73
13	Selenge	6,451	7,678	10,081	14,212	6.64	6.89	8.43	10.89
14	Tuv	5,202	7,358	9,662	13,620	5.27	7.29	9.14	11.80
15	Uvs	2,913	4,479	5,881	8,291	3.37	5.66	7.59	9.80
16	Khovd	3,954	6,079	7,981	11,251	4.40	6.43	7.85	10.02
17	Khovsgul	8,115	11,517	15,122	21,317	6.83	9.34	11.61	15.01
18	Khentii	4,786	6,718	8,822	12,435	6.91	9.22	11.68	15.09
19	Darkhan-Uul	3,746	5,759	7,561	10,659	4.35	5.75	6.84	8.60
20	Orkhon	22,680	34,229	44,945	63,359	30.73	35.80	41.12	51.66
21	Govisumber	833	960	1,260	1,777	6.76	6.73	8.22	10.62
	Aimag Total/Average	104,463	156,761	205,830	290,159	6.46	9.23	11.45	14.68
22	Nalaikh	3,135	4,935	6,480	9,135	13.02	16.75	19.81	25.06
23	Baganuur	2,769	4,360	5,725	8,070	13.02	16.75	19.81	25.06
	District Total/Average	5,904	9,295	12,205	17,205	13.02	16.75	19.81	25.06
24	Ulaanbaatar	97,716	153,852	202,019	284,787	13.01	16.75	19.80	25.06
	National Total/Average	208,083	319,908	420,054	592,151	8.62	11.97	14.59	18.61

Annex 4.8-7

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/High GRDP)(1/3)

1 USD =448.61 Tg.

No	Name of Aimag	GRDP (million Tg.)			GRDP (kilo USD)			Population				
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2020	
1	Arkhangai	15,350	23,154	30,986	34,217	51,613	69,071	114,592	97,343	95,551	99,609	108,675
2	Bayan-Ulgii	12,152	16,921	22,643	27,088	37,719	50,474	83,741	95,926	110,235	122,414	138,801
3	Bayankhongor	19,828	27,607	36,945	44,199	61,539	82,354	136,629	85,447	87,843	92,164	100,554
4	Bulgan	12,792	17,811	23,935	28,515	39,703	53,131	88,148	60,836	62,765	65,085	71,008
5	Govi-Altai	11,513	16,030	21,452	25,664	35,733	47,819	79,332	65,726	57,941	59,897	65,355
6	Dornogovi	10,873	15,139	20,260	24,237	33,746	45,162	74,925	50,253	56,816	60,900	66,455
7	Dornod	8,954	10,687	14,301	19,959	23,822	31,878	52,888	74,142	75,891	78,206	85,347
8	Dundgovi	4,477	8,906	11,918	9,980	19,852	26,567	44,074	51,572	51,367	53,949	58,860
9	Zavkhan	10,873	15,139	20,260	24,237	33,746	45,162	74,925	86,852	81,453	80,978	88,351
10	Uvurkhangai	12,792	20,483	27,411	28,515	45,659	61,102	101,369	114,097	118,530	124,851	138,168
11	Umnugovi	9,594	13,358	17,876	21,386	29,776	39,848	66,111	46,286	51,910	55,464	60,514
12	Sukhbaatar	11,513	15,139	20,260	25,664	33,746	45,162	74,925	55,649	56,612	58,672	64,014
13	Selenge	19,828	21,373	28,602	44,199	47,643	63,757	105,778	97,116	111,503	119,592	130,488
14	Tuv	15,990	20,483	27,411	35,643	45,659	61,102	101,369	98,757	100,884	105,756	115,379
15	Uvs	8,954	12,468	16,685	19,959	27,793	37,193	61,704	86,415	79,102	77,521	84,586
16	Khovd	12,152	16,921	22,643	27,088	37,719	50,474	83,741	89,963	94,562	101,688	112,300
17	Khuvsgul	24,944	32,060	42,903	55,603	71,465	95,635	158,666	118,768	123,248	130,202	142,059
18	Khentii	14,711	18,702	25,027	32,792	41,689	55,788	92,555	69,291	72,877	75,545	82,431
19	Darkhan-Uul	11,513	16,030	21,452	25,664	35,733	47,819	79,332	86,033	100,100	110,537	123,923
20	Orkhon	69,716	95,289	127,518	155,404	212,409	284,251	471,588	73,815	95,606	109,307	122,639
21	Govisumber	2,558	2,672	3,575	5,702	5,956	7,969	13,223	12,331	14,263	15,337	16,737
	Aimag Total/Average	321,077	436,372	583,963	715,715	972,720	1,301,716	2,159,611	1,616,618	1,699,059	1,797,674	1,976,644
22	Nalaikh	9,635	13,738	18,384	21,477	30,623	40,981	67,989	24,084	29,467	32,719	36,457
23	Baganuur	8,511	12,136	16,240	18,972	27,052	36,201	60,060	21,275	26,031	28,903	32,206
	District Total/Average	18,146	25,874	34,625	40,450	57,675	77,182	128,049	45,360	55,498	61,622	68,663
24	Ulaanbaatar	300,375	428,308	573,173	669,568	954,745	1,277,665	2,119,707	750,840	918,702	1,020,078	1,136,637
	National Total/Average	639,598	890,554	1,191,761	1,425,733	1,985,141	2,656,564	4,407,367	2,412,818	2,673,259	2,879,374	3,181,944

Annex 4.8-8

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/High GRDP)(2/3)

No	Name of Aimag	GRDP/Capita (USD)			Weighted GRDP/Capita			Provisional Teledensity			Provisional Demand				
		y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2001	y 2008	y 2013	y 2020	
1	Arkhangai	351.5	540.2	693.4	0.59487	0.72740	0.75158	5.130	8.704	11.381	16.053	4.994	8.318	11.337	17.446
2	Bayan-Ulgii	282.4	342.2	412.3	0.47789	0.46077	0.43557	4.121	5.514	6.767	9.185	3.954	6.079	8.284	12.749
3	Bayankhongor	517.3	700.6	893.6	0.87539	0.94339	0.96851	7.549	11.289	14.665	20.885	6.451	9.917	13.517	20.801
4	Bulgan	468.7	632.6	816.3	0.79322	0.85183	0.88480	6.840	10.193	13.398	18.988	4.162	6.398	8.720	13.420
5	Govi-Altai	390.5	616.7	798.4	0.66080	0.83048	0.86531	5.698	9.938	13.103	18.479	3.746	5.759	7.849	12.078
6	Dornogovi	482.3	594.0	741.6	0.81622	0.79985	0.80377	7.039	9.571	12.171	17.164	3.538	5.439	7.413	11.407
7	Dornod	269.2	313.9	407.6	0.45559	0.42271	0.44181	3.929	5.058	6.690	9.434	2.913	3.839	5.232	8.052
8	Dundgovi	193.5	386.5	492.4	0.32748	0.52045	0.53374	2.824	6.228	8.082	11.399	1.457	3.200	4.361	6.710
9	Zavkhan	279.1	414.3	557.7	0.47227	0.55792	0.60448	4.073	6.876	9.153	12.910	3.538	5.439	7.413	11.407
10	Uvurkhangai	249.9	385.2	489.4	0.42294	0.51874	0.53045	3.647	6.207	8.032	11.169	4.162	7.358	10.029	15.433
11	Umnugovi	462.0	573.6	718.4	0.78193	0.77245	0.77870	6.743	9.243	11.791	16.632	3.122	4.799	6.540	10.065
12	Sukhbaatar	461.2	596.1	769.7	0.78046	0.80273	0.83429	6.730	9.606	12.633	17.819	3.746	5.439	7.413	11.407
13	Selenge	455.1	427.3	533.1	0.77020	0.57539	0.57783	6.642	6.885	8.750	12.341	6.451	7.878	10.464	16.104
14	Tuv	360.9	452.6	577.8	0.61080	0.60947	0.62622	5.267	7.293	9.482	13.375	5.202	7.358	10.029	15.433
15	Uvs	231.0	351.4	479.8	0.39088	0.47314	0.52001	3.371	5.662	7.874	11.105	2.913	4.479	6.105	9.394
16	Khovd	301.1	398.9	496.4	0.50957	0.53714	0.53789	4.394	6.428	8.146	11.352	3.954	6.079	8.284	12.749
17	Khovsgul	468.2	579.8	734.5	0.79229	0.78084	0.79612	6.832	9.344	12.055	17.003	8.115	11.517	15.686	24.155
18	Khentii	473.3	572.0	738.5	0.80091	0.77033	0.80041	6.907	9.218	12.120	17.093	4.786	6.718	9.156	14.091
19	Darkhan-Uul	298.3	357.0	432.6	0.50483	0.48071	0.46889	4.353	5.752	7.100	9.746	3.746	5.759	7.849	12.078
20	Orkhon	2,105.3	2,221.7	2,600.5	3.56291	2.99184	2.81859	30.725	35.802	42.680	58.540	22.680	34.229	46.652	71.794
21	Govisumber	462.4	417.6	519.6	0.78256	0.56235	0.56318	6.748	6.729	8.528	12.028	833	960	1,308	2,014
	Aimag Total/Average	442.7	572.5	724.1	0.74924	0.77096	0.78484	6.461	9.226	11.864	16.633	104.463	156.761	213.651	328.787
22	Nalaikh	891.8	1,039.2	1,252.5	1.50915	1.39948	1.35756	13.014	16.747	20.556	28.391	3.135	4.935	6.726	10.351
23	Baganuur	891.8	1,039.2	1,252.5	1.50915	1.39945	1.35757	13.014	16.746	20.557	28.390	2.769	4.360	5.942	9.144
	District Total/Average	891.8	1,039.2	1,252.5	1.50915	1.39946	1.35756	13.014	16.747	20.556	28.391	5.904	9.295	12.668	19.495
24	Ulaanbaatar	891.8	1,039.2	1,252.5	1.50915	1.39947	1.35757	13.014	16.747	20.557	28.391	97.716	153.852	209.693	322.700
	National Total/Average	590.9	742.6	922.6	1.00000	1.00000	1.00000	8.623	11.966	15.142	21.087	208.083	319.908	436.012	670.982

National macroscopic telemetry

Annex 4.8-9

Macroscopic Demand Forecast of Mobile Telephone (Medium Growth/High GRDP)(3/3)

No	Name of Aimag	Adjusted Demand			Adjusted Teledensity			
		y2001	y2008	y2013	y2001	y2008	y2013	y2020
1	Arkhangai	4,994	8,318	11,337	5.13	8.71	11.38	16.05
2	Bayan-Ulgii	3,954	6,079	8,284	4.12	5.51	6.77	9.19
3	Bayankhongor	6,451	9,917	13,517	7.55	11.29	14.67	20.69
4	Bulgan	4,162	6,398	8,720	6.84	10.19	13.40	18.90
5	Govi-Altai	3,746	5,759	7,849	5.70	9.94	13.10	18.48
6	Dornogovi	3,538	5,439	7,413	7.04	9.57	12.17	17.16
7	Dornod	2,913	3,839	5,232	3.93	5.06	6.69	9.43
8	Dundgovi	1,457	3,200	4,361	2.83	6.23	8.08	11.40
9	Zavkhan	3,538	5,439	7,413	4.07	6.68	9.15	12.91
10	Uvurkhangai	4,162	7,358	10,029	3.65	6.21	8.03	11.17
11	Umnugovi	3,122	4,799	6,540	6.75	9.24	11.79	16.63
12	Sukhbaatar	3,746	5,439	7,413	6.73	9.61	12.63	17.82
13	Selenge	6,451	7,678	10,464	6.64	6.89	8.75	12.34
14	Tuv	5,202	7,358	10,029	5.27	7.29	9.48	13.38
15	Uvs	2,913	4,479	6,105	3.37	5.66	7.88	11.11
16	Khovd	3,954	6,079	8,284	4.40	6.43	8.15	11.35
17	Khovsgul	8,115	11,517	15,696	6.83	9.34	12.06	17.00
18	Khentii	4,786	6,718	9,156	6.91	9.22	12.12	17.09
19	Darkhan-Uul	3,746	5,759	7,849	4.35	5.75	7.10	9.75
20	Orkhon	22,680	34,229	46,652	30.73	35.80	42.68	58.54
21	Govisumber	833	960	1,308	6.76	6.73	8.53	12.03
	Aimag Total/Average	104,463	156,761	213,651	6.46	9.23	11.88	16.63
22	Nalaikh	3,135	4,935	6,726	13.02	16.75	20.56	28.39
23	Baganuur	2,769	4,360	5,942	13.02	16.75	20.56	28.39
	District Total/Average	5,904	9,295	12,668	13.02	16.75	20.56	28.39
24	Ulaanbaatar	97,716	153,852	209,693	13.01	16.75	20.56	28.39
	National Total/Average	208,083	319,908	436,012	8.62	11.97	15.14	21.09

Annex 4.9-1 Demand Forecast of Mobile Telephone for Sums (Medium Growth-Medium Rate)

		Demand																				
		2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
1	ARKHANGAI Aimag Total	4994	5469	5944	6419	6893	7368	7843	8318	8839	9360	9880	10401	10922	11561	12200	12839	13479	14118	14757	15396	
1	Total of Sum Centres	1757	1924	2092	2259	2426	2593	2761	2928	3111	3294	3477	3660	3843	4067	4292	4516	4741	4965	5190	5414	
1	2 Battseugel	P-1	137	150	163	176	189	202	215	228	242	256	271	285	299	316	334	351	369	386	404	421
1	3 Bulgan	P-2	59	65	70	76	81	87	92	98	104	110	117	123	129	137	144	152	159	167	174	182
1	4 Zargalant	P-1	82	90	98	106	113	121	129	137	145	154	162	171	179	190	200	211	221	232	242	253
1	5 Ikhnamir	P-1	123	135	146	158	169	181	192	204	217	230	242	255	268	284	299	315	331	347	362	378
1	6 Ugiinuur	P-2	63	69	75	81	86	92	98	104	111	117	124	130	137	145	153	161	169	177	185	193
1	7 Ulzit	P-1	90	99	107	116	125	134	142	151	160	170	179	189	198	210	221	233	244	256	267	279
1	8 Undur-Ulaan	P-1	101	111	120	130	140	150	159	169	180	190	201	211	222	235	248	261	273	286	299	312
1	9 Tanat	P-1	113	124	135	146	156	167	178	189	201	213	224	236	248	262	277	291	306	320	335	349
1	10 Tuvshruuleh	P-1	175	192	208	225	241	258	274	291	309	327	346	364	382	404	427	449	471	493	516	538
1	11 Tsakhir	P-2	51	56	61	66	71	76	81	86	91	97	102	108	113	120	126	133	139	146	152	159
1	12 Tsenkher	P-2	95	104	113	122	132	141	150	159	169	179	188	198	208	220	232	244	257	269	281	293
1	13 Tsetsenteg	P-2	86	94	103	111	119	127	136	144	153	162	171	180	189	200	211	222	233	244	255	266
1	14 Chuluut	P-3	66	72	79	85	91	97	104	110	117	124	131	138	145	153	162	170	179	187	196	204
1	15 Khairkhan	P-2	131	143	156	168	181	193	206	218	232	245	259	272	286	303	319	336	353	370	386	403
1	16 Khangai	P-3	69	75	82	88	95	101	108	114	121	128	136	143	150	159	168	177	185	194	203	212
1	17 Khashaat	P-2	45	49	54	58	62	66	71	75	80	85	89	94	99	105	110	116	122	128	133	139
1	18 Khotont	P-1	140	153	167	180	193	206	220	233	247	262	276	291	305	323	341	359	376	394	412	430
1	19 Eerdenemandal	P-1	131	143	156	168	181	193	206	218	232	245	259	272	286	303	319	336	353	370	386	403
2	Total of Sum Centres	3954	4258	4561	4865	5168	5472	5775	6079	6459	6840	7220	7601	7981	8448	8915	9382	9850	10317	10784	11251	
2	2 Altai	P-2	49	53	57	61	64	68	72	76	81	86	90	95	100	106	112	118	123	129	135	141
2	3 Atlantsugts	P-4	52	56	60	64	68	72	76	80	85	90	94	99	104	110	116	122	129	135	141	147
2	4 Baynnuur	P-3	98	106	113	121	128	136	143	151	160	170	179	189	198	210	221	233	245	257	268	280
2	5 Bugat	P-2	52	56	60	64	68	72	76	80	85	90	95	100	105	111	117	123	130	136	142	148
2	6 Bulgan	P-3	65	70	75	80	85	90	95	100	106	113	119	126	132	140	147	155	163	171	178	186
2	7 Buyant	P-4	41	44	47	50	54	57	60	63	67	71	74	78	82	87	92	97	101	106	111	116
2	8 Deluun	P-1	76	82	88	94	99	105	111	117	124	132	139	147	154	163	172	181	190	199	208	217
2	9 Nogoornuur	P-3	98	105	113	120	128	135	143	150	159	169	178	188	197	209	220	232	243	255	266	278
2	10 Tolbo	P-3	59	63	68	72	77	81	86	90	96	102	107	113	119	126	133	140	146	153	160	167
2	11 Ulaankhus	P-2	82	88	95	101	107	113	120	126	134	142	150	158	166	176	185	195	204	214	223	233
2	12 Sagasai	P-2	81	87	94	100	106	112	119	125	133	141	148	156	164	174	183	193	202	212	221	231
2	13 Tsengel	P-2	85	92	98	105	111	118	124	131	139	147	155	163	171	181	191	201	212	222	232	241
2	14 Khoigor	P-2	45	48	52	55	59	62	66	69	73	78	82	87	91	96	102	107	112	117	123	128
2	15 Tsagaanuur	P-2	100	108	115	123	131	139	146	154	164	173	183	192	202	214	225	237	249	261	272	284

Annex 4.9-2 Demand Forecast of Mobile Telephone for Sums (Medium Growth-Medium Rate)

	Demand																				
	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	
3 BAYANKHONGOR Aimag Total	6451	6946	7441	7936	8432	8927	9422	9917	10538	11159	11780	12401	13022	13784	14546	15308	16071	16833	17595	18357	
3 Total of Sum Centres	1995	2148	2301	2454	2606	2759	2912	3065	3257	3450	3642	3835	4027	4263	4498	4734	4970	5206	5441	5677	
3 2 Sharqaljiut	P-2	25	27	31	32	34	36	38	40	43	45	48	50	53	56	59	61	64	67	70	
3 3 Uziit	P-2	137	148	158	169	179	190	200	211	224	237	251	264	277	293	309	325	342	358	374	390
3 4 Jinst	P-3	65	70	75	80	85	90	95	100	106	113	119	126	132	140	147	155	163	171	178	186
3 5 Bogd	P-1	127	137	146	156	166	176	185	195	207	219	231	243	255	270	285	300	315	330	345	360
3 6 Bayanlig	P-2	108	116	125	133	141	149	158	166	176	187	197	208	218	231	244	257	269	282	295	308
3 7 Bayangobi	P-2	76	82	88	94	99	105	111	117	124	132	139	147	154	163	172	181	190	199	208	217
3 8 Baantsagaan	P-2	68	73	79	84	89	94	100	105	112	118	125	131	138	146	154	162	171	179	187	195
3 9 Bayantsagaan	P-1	171	184	197	210	224	237	250	263	280	296	313	329	346	366	386	406	427	447	467	487
3 10 Bayan-Undur	P-3	52	56	60	64	68	72	76	80	85	90	95	100	105	111	117	123	130	136	142	148
3 11 Shinejinst	P-2	52	56	60	64	67	71	75	79	84	89	94	99	104	110	116	122	129	135	141	147
3 12 Bumbugur	P-3	58	62	67	71	76	80	85	89	95	100	106	111	117	124	131	138	144	151	158	165
3 13 Buutsagaan	P-1	195	210	225	240	255	270	285	300	319	338	356	375	394	417	440	463	486	509	532	555
3 14 Khuremaral	P-3	171	184	197	210	224	237	250	263	279	296	312	329	345	365	385	405	426	446	466	486
3 15 Bayanbulag	P-2	66	71	76	81	87	92	97	102	108	115	121	128	134	142	149	157	165	173	180	188
3 16 Gurbanbulag	P-2	68	73	78	83	89	94	99	104	111	117	124	130	137	145	153	161	169	177	185	193
3 17 Zag	P-3	79	85	91	97	103	109	115	121	129	136	144	151	159	168	178	187	197	206	216	225
3 18 Jargalant	P-1	190	205	219	234	248	263	277	292	310	329	347	366	384	406	429	451	474	496	519	541
3 19 Galut	P-3	104	112	120	128	135	143	151	159	169	179	189	199	209	221	234	246	258	270	283	295
3 20 Bayan-Oboo	P-2	77	83	89	95	101	107	113	119	126	134	141	149	156	165	174	183	193	202	211	220
3 21 Erendetsogt	P-2	106	114	122	130	138	146	154	162	172	182	193	203	213	226	238	251	263	276	288	301
4 BULGAN Aimag Total	4162	4481	4801	5120	5440	5759	6079	6398	6799	7199	7600	8000	8401	8893	9384	9876	10368	10860	11351	11843	
4 Total of Sum Centres	2246	2418	2589	2761	2932	3104	3275	3447	3663	3879	4096	4312	4528	4793	5059	5324	5589	5854	6120	6385	
4 2 Bayan-Agt	P-1	104	112	120	128	135	143	151	159	169	179	189	199	209	221	234	246	258	270	283	295
4 3 Bayannuur	P-2	107	115	123	131	140	148	156	164	174	185	195	206	216	229	241	254	266	279	291	304
4 4 Bugat	P-2	56	60	65	69	73	77	82	86	91	97	102	108	113	120	126	133	139	146	152	159
4 5 Bureqkhangai	P-2	109	117	126	134	142	150	159	167	177	188	198	209	219	232	245	258	270	283	296	309
4 6 Gurbanbulag	P-1	97	104	112	119	127	134	142	149	158	168	177	187	196	208	219	231	242	254	265	277
4 7 Dashinchilen	P-1	151	163	174	186	197	209	220	232	247	261	276	290	305	323	341	359	376	394	412	430
4 8 Mogod	P-1	70	75	81	86	91	96	102	107	114	121	127	134	141	149	158	166	174	182	191	199
4 9 Orkhon	P-2	84	90	97	103	110	116	123	129	137	145	153	161	169	179	189	199	209	219	229	239
4 10 Rashaant	P-1	178	192	205	219	233	247	260	274	291	308	326	343	360	381	402	423	444	465	486	507
4 11 Saikhan	P-1	171	184	197	210	224	237	250	263	279	296	312	329	345	365	385	405	426	446	466	486
4 12 Selenge	P-1	159	171	183	195	208	220	232	244	259	275	292	308	321	340	359	378	396	415	434	453
4 13 Teshig	P-1	101	109	116	124	132	140	147	155	165	174	184	193	203	215	227	239	250	262	274	286
4 14 Khangai	P-2	231	249	266	284	301	319	336	354	376	398	421	443	465	492	520	547	574	601	629	656
4 15 Khishi-Undur	P-1	168	181	194	207	219	232	245	258	274	290	307	323	339	359	379	399	418	438	458	478
4 16 Khutag	P-1	240	258	277	295	314	332	351	369	392	415	438	461	484	512	541	569	597	625	654	682
4 17 Khyalganat	P-2	220	237	253	270	287	304	320	337	358	379	401	422	443	469	495	521	547	573	599	625