



## 5th World Telecommunication/ICT Indicators Meeting (Geneva, 2006)

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UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

**BUREAU DE DÉVELOPPEMENT  
DES TÉLÉCOMMUNICATIONS**

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5<sup>ÈME</sup> REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, GENEVE, 11-13 OCTOBRE 2006

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POUR INFORMATION

ORIGINE: ART, Togo

TITRE: Données du Togo

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# REUNION MONDIALE SUR LES INDICATEURS DU SECTEUR DES TELECOMMUNICATIONS / TIC

## DONNEES DU TOGO

### 1. Vue du secteur des télécommunications

La loi 98-005 sur les télécommunications du 11 février 1998 ouvre le secteur des télécommunications à la concurrence et détermine les différentes institutions chargées de l'animer. Il s'agit principalement du ministère, de l'Autorité de réglementation et des opérateurs.

#### Le ministère

- Il a pour missions, d'accorder des autorisations pour l'établissement des réseaux, installations et des stations radioélectriques pour les besoins civils ; et de les suspendre ou annuler par consentement mutuel ou en cas d'infraction ;
- il négocie et met en œuvre les accords, conventions et traités internationaux et donne des instructions à l'Autorité de Réglementation relatives aux grandes orientations de ses actions.

#### L'Autorité de Réglementation des secteurs de postes et de télécommunications (ART&P)

Etablissement public administratif à budget autonome, elle s'occupe de la régulation du secteur postal et de celui des télécommunications. Elle est placée sous la tutelle du ministère et a pour missions de :

- veiller à l'application de la législation et au respect des cahiers des charges qui accompagnent les autorisations données aux différents opérateurs ;
- assigner et contrôler les fréquences radioélectriques ;
- assurer le respect des règles de la concurrence et réglementer les tarifs des opérateurs exerçant une influence significative sur le marché ;
- régler les conflits entre opérateurs, puis entre opérateurs et leurs clients ;
- sanctionner les fraudes à la loi et les abus de position ;
- fixer les redevances des opérateurs ;
- assurer la coordination technique et opérationnelle avec les Etats voisins ;
- donner son avis au Ministre avant certaines décisions qui relèvent de la compétence de celui-ci ;

#### Les opérateurs et prestataires de réseaux et services de télécommunications

Ce sont des exploitants de réseaux ouverts au public ou privés, et des fournisseurs de produits et services. Ils sont soumis à deux types de régimes :

- régime d'autorisation ou de licence ;
- régime de déclaration.

Le marché des télécommunications compte plusieurs opérateurs en fonction des segments :

- téléphonie fixe : un opérateur (Togo Telecom) ;
- téléphonie mobile GSM : deux opérateurs (Togo Cellulaire et Telecel Togo) ;
- VoIP : un opérateur (Café Informatique)
- transmission de données (Internet) : 3 fournisseurs d'accès (Café Informatique, Togo Telecom, E-process) ; et plus d'une centaine de fournisseurs de services (ISP) ;
- prestataires de services téléphoniques : plus de 10 000 cabines privées.

## 2. L'ART&P (le régulateur) est chargée de la collecte des statistiques du secteur

### 3. Description de la collecte et difficultés

#### 3.1 Méthodes de collecte

##### a. Collecte périodique

L'ART&P collecte, auprès de chaque opérateur, à la fin de chaque année, les indicateurs-clés des télécommunications, illustrant leurs activités pour l'année considérée. L'ART&P procède ensuite à la synthèse des données par segment.

Certaines données sont aussi extraites des documents tels que les rapports d'activités et les rapports financiers que les opérateurs autorisés sont tenus de transmettre chaque année à l'ART&P.

Les données sont présentées dans le rapport annuel d'activités de l'Autorité qui est publié sur son site : [www.artp.tg](http://www.artp.tg).

Une base de données est en cours de conception pour stocker toutes les informations touchant au secteur.

##### b. Collecte ponctuelle

En fonction des besoins d'informations ou de données au cours de l'année, l'ART&P envoie aux opérateurs des questionnaires à remplir selon des délais indiqués.

##### c. Données issues d'enquêtes

L'ART&P fait mener également des enquêtes sur le terrain pour collecter des données.

Il s'agit essentiellement des données sur la couverture des localités, et des informations sur la qualité de service à recueillir auprès des consommateurs.

#### 3.2 Difficultés observées dans la collecte

Elles relèvent du fait que les opérateurs ne disposent pas d'une base de données à partir de laquelle extraire facilement les informations demandées par l'Autorité.

En plus, disposer des données fiables nécessite que l'Autorité et chaque opérateur s'entendent sur les définitions de chaque donnée à collecter, ainsi que sur le mode opératoire.

Faire tenir une base de données par les opérateurs et convenir sur les procédures de collecte sont deux défis que l'ART&P entend relever dans les années à venir.

## 4. Utilisateurs des données

Les principaux utilisateurs sont :

- le régulateur (ART&P) pour apprécier l'évolution du secteur et mener des études ;
- l'UIT dans le cadre de la fourniture périodique ou ponctuelle de données ;
- les opérateurs existants ;
- les opérateurs entrants ou potentiels dans le cadre de la prospection du marché ;
- Ministères et autres organismes internationaux tels que l'OMC, l'UEMOA, etc.

## 5. Principaux indicateurs 2005

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
Réseau de téléphonie fixe				
1	112	Lignes téléphoniques principales (fixes) en service	Une ligne principale est une ligne téléphonique qui relie l'équipement terminal de l'abonné au réseau public commuté et qui dispose d'un accès individualisé dans l'équipement de commutation téléphonique. Ce terme est synonyme de l'expression <i>poste principal</i> ou <i>ligne directe de central (DEL)</i> , termes couramment utilisés dans les documents relatifs aux télécommunications. Il n'est pas nécessairement identique aux termes "ligne d'accès" ou "abonné". Certains pays ajoutent le nombre de canaux RNIS; si tel est le cas, ce nombre doit être indiqué dans une note. Les abonnés à la téléphonie hertzienne fixe devraient également être comptabilisés.	62 831 dont RNIS : 686 <sup>ii</sup>
2	117	Capacité totale des commutateurs publics locaux	La capacité totale des commutateurs publics locaux correspond au nombre maximal de lignes principales qui peuvent y être connectées. Ce nombre inclut donc les lignes principales déjà connectées et les lignes principales disponibles pour de futurs raccordements, y compris celles utilisées pour l'exploitation technique du commutateur (numéros d'essai). La mesure devrait être la capacité effective du système et non son potentiel théorique une fois que le système aura été modernisé ou si une technique de compression lui a été appliquée.	92 750
3	1142	% de lignes principales raccordées à des centres numériques	Pour obtenir ce pourcentage, on divise le nombre de lignes principales raccordées à des centres téléphoniques numériques par le nombre total de lignes principales. L'indicateur ne mesure pas le pourcentage de centres qui sont numériques, le pourcentage de lignes entre les centres qui sont numériques ou le pourcentage de points de terminaison du réseau numérique. Les réponses devraient indiquer si les lignes principales incluses dans la définition représentent uniquement celles qui sont en service ou si elles correspondent à la capacité totale.	100%
4	116	% de lignes principales résidentielles	Pour obtenir ce pourcentage on divise le nombre de lignes principales desservant les ménages (c'est-à-dire celles qui ne sont pas utilisées pour les affaires, les services publics ou à d'autres fins professionnelles ou encore comme postes téléphoniques publics) par le nombre total de lignes principales. La définition du terme "ménages" utilisée dans cette rubrique devrait être indiquée dans les réponses.	n a
5	1162	% de lignes principales en zones urbaines	Pour obtenir ce pourcentage on divise le nombre de lignes principales dans les zones urbaines par le nombre total de lignes principales dans le pays. La définition du terme "urbain" utilisé par le pays devrait être indiquée.	n a
6	1163	Nombre de localités ayant	Les localités désignent des villes, agglomérations et	124

<sup>i</sup> Code utilisé par l'Union internationale des télécommunications (UIT) pour désigner l'indicateur. Ce code apparaît dans les questionnaires de l'UIT.

<sup>ii</sup> 666 lignes RNIS en accès de base et 20 lignes RNIS en accès primaire, soit  $666 \times 2 + 20 \times 30 = 1330$  lignes d'abonnés RNIS

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
		un service téléphonique	villages d'un pays donné. Cet indicateur correspond au nombre de localités ayant un service téléphonique. Pour accroître son utilité, il convient d'indiquer le nombre total de localités ainsi que le nombre d'habitants de ces localités qui disposent d'un service téléphonique.	
7	1112	Publiphones <sup>iii</sup>	Nombre total de téléphones publics de tout type, fonctionnant avec pièces ou avec cartes ainsi que les téléphones publics installés dans les bureaux d'appel. Les téléphones publics installés dans des lieux privés, de même que les téléphones mobiles publics devraient être inclus dans cette catégorie. Il convient de comptabiliser tous les téléphones publics, quelles que soient les possibilités qu'ils offrent (par exemple, ils peuvent assurer uniquement les communications locales ou nationales). Si la définition, au niveau national, des "publiphones" diffère de celle qui est donnée ci-dessus (par exemple, si elle ne tient pas compte des publiphones situés dans des lieux privés), elle doit être indiquée explicitement dans les réponses.	29 335
Réseau mobile				
8	271	Abonnés au téléphone mobile cellulaire (post-paiement et prépaiement)	Il s'agit des utilisateurs de téléphones portatifs abonnés à un service téléphonique mobile public automatique qui donne accès au réseau téléphonique public commuté (RTPC) et qui utilise une technologie cellulaire. On peut en outre faire la distinction entre systèmes analogiques et systèmes numériques cellulaires mais les abonnés aux systèmes non cellulaires ne devraient pas être pris en considération. De même, les abonnés aux services publics de données mobiles ou de radiomessagerie ne devraient pas être inclus dans la définition. Si ce service porte un nom, prière de l'indiquer dans une note ainsi que l'année de son entrée en exploitation.	435 979
8.1	271p	Abonnés à la téléphonie mobile cellulaire: carte prépayée	Nombre total d'abonnés à la téléphonie mobile cellulaire utilisant des cartes prépayées. Au lieu de payer un abonnement mensuel fixe, ces abonnés choisissent d'acheter des tranches horaires de temps d'utilisation. Seuls les abonnés prépayés actifs qui ont utilisé le système dans un délai raisonnable devraient être comptabilisés. Cette période (par exemple, 3 mois) devrait être indiquée dans une note.	434 260
9	2712	Abonnés aux systèmes mobiles cellulaires numériques	Nombre total d'abonnés aux systèmes cellulaires numériques (par exemple, GSM, D/AMPS (AMRT), AMRC). Les abonnés utilisant des cartes post-payées ou prépayées devraient en faire partie.	435 979
9.1	271h	Nombre total d'abonnés à des réseaux mobiles	271h = 271L+271G. Somme des abonnés à des réseaux mobiles à faible et à moyen débits et des abonnés aux IMT-2000 (3G). Si des abonnés au téléphone disposent de communications de données sans s'acquitter d'une redevance d'abonnement supplémentaire, les abonnés comptabilisés seraient ceux qui disposent de terminaux correctement équipés ET qui ont utilisé le service au	0

<sup>iii</sup> Il s'agit de 209 publiphones (cabines téléphoniques publiques installées par l'opérateur du fixe), de 25 952 cabines téléphoniques privées et de 3194 cabines privées GSM.

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
			moins une fois pendant une période donnée (par exemple, au cours des trois derniers mois).	
9.1.1	271L	Nombre d'abonnés à des réseaux mobiles à faible et à moyen débits	<p>Nombre d'abonnés à des réseaux mobiles à faible et à moyen débits (par exemple, GPRS, WAP, iMode, etc.) utilisant ou non des services multimédias, mais dotés d'une capacité pour des communications de données, via l'Internet. Dans ce contexte, l'expression "réseau mobile à faible et à moyen débits" signifie un débit inférieur à 144 kbit/s dans les deux sens.</p> <p>– Le <i>service général de radiocommunication en mode paquet</i> (GPRS) désigne une norme applicable à un système de communication mobile de type 2,5G qui est généralement adoptée par les opérateurs de téléphonie GSM comme étape de transition vers les systèmes 3G (W-CDMA).</p> <p>– Le <i>protocole d'application hertzienne</i> (WAP) est un protocole ouvert, non soumis à licence, applicable aux communications hertziennes, qui permet de créer des services de télécommunication de pointe et d'accéder à des pages de l'Internet à partir d'un téléphone mobile.</p> <p>– Le <i>iMode</i> est un support en mode paquets de transfert de données sans fil qui utilise le <i>Langage de balisage pour la téléphonie mobile compacte</i> (CWML) au lieu du langage WML du WAP pour l'affichage des données. Introduit en 1999, le i-Mode a été la première méthode disponible pour naviguer sur le web à partir d'un téléphone cellulaire.</p>	0 <sup>iv</sup>

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<sup>iv</sup> La commercialisation du GPRS a débuté en 2006

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
9.1.2	271G	Nombre d'abonnés à des réseaux mobiles à haut débit IMT-2000 (3G)	<p>Nombre d'abonnés à des réseaux mobiles à haut débit IMT-2000 (3G) (par exemple, CDMA2000 1X, WCDMA, CDMA2000 1xEV-DO, etc.) utilisant ou non des services multimédias mais dotés d'une capacité pour les communications de données, via l'Internet. Dans ce contexte, l'expression "réseau mobile à haut débit" signifie un débit égal ou supérieur à 144 kbit/s dans un sens au moins.</p> <ul style="list-style-type: none"> <li>– La technologie d'<i>accès multiple par répartition en code</i> (CDMA) 2000 1x est une technologie des réseaux mobiles IMT-2000 (3G), fondée sur la technologie CDMA, qui permet d'obtenir des débits de transmission de données à commutation par paquets pouvant atteindre 144 kbit/s.</li> <li>– La technologie d'<i>accès multiple par répartition en code à large bande</i> (W-CDMA) est une technologie des réseaux mobiles IMT-2000 (3G), fondée sur la technologie CDMA, qui permet d'obtenir actuellement des débits de transmission de données à commutation par paquets pouvant atteindre 384 kbit/s et jusqu'à 2 Mbit/s lorsqu'elle sera pleinement mise en oeuvre. En Europe, on parle de <i>Système de télécommunications mobiles universelles</i> (UMTS).</li> <li>– La technologie <i>CDMA2000 1xEV-DO</i> est une technologie des réseaux mobiles IMT-2000 (3G), fondée sur la technologie CDMA, qui permet d'obtenir des débits de transmission de données à commutation par paquets pouvant atteindre jusqu'à 2,4 Mbit/s.</li> <li>– La technologie des <i>débits binaires améliorés pour les futurs systèmes GSM</i> (EDGE) est une technologie intermédiaire qui permet de rapprocher la capacité des systèmes GSM de deuxième génération de celle des systèmes de troisième génération pour le traitement des débits de données pouvant atteindre 384 kbit/s.</li> </ul>	0
10	271land	Pourcentage de la couverture du réseau mobile cellulaire (territoire)	Pourcentage de la couverture mobile cellulaire du territoire. Pour obtenir ce pourcentage, on divise le territoire couvert par un signal mobile cellulaire par la totalité du territoire.	62%
11	271pop	Pourcentage de la couverture du réseau mobile cellulaire (population)	Pourcentage de la population couverte par les réseaux de téléphonie mobile cellulaire. Ce pourcentage n'est pas le même que celui de la densité d'abonnement à la téléphonie mobile ou que le taux de pénétration. Le pourcentage de la population couverte par un réseau de téléphonie mobile mesure le pourcentage d'habitants qui sont desservis par un signal mobile cellulaire, qu'ils soient abonnés ou non au service. Pour calculer ce pourcentage, on divise le nombre d'habitants desservis par un signal mobile cellulaire par la population totale.	85%
Réseau de transmission de texte/de données				
12	311	Lignes d'abonné télex	Par ligne d'abonné télex, on entend une ligne qui connecte l'équipement terminal de l'abonné au réseau télex public et qui dispose d'un accès individualisé	



	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
			dans l'équipement de commutation télex.	
13	412	Circuits loués à usage privé	Liaison bidirectionnelle à usage exclusif d'un abonné, quelle que soit son utilisation par celui-ci (par exemple, abonné commuté ou non, utilisation téléphonique ou pour données). Les circuits privés (que l'on appelle aussi lignes louées) peuvent être limités aux appels nationaux ou permettre des communications internationales. En communiquant cet indicateur, il convient d'indiquer seulement le nombre de lignes et non le nombre de points de terminaison de réseau.	
14	413	Nombre total d'abonnés aux réseaux publics pour données	Nombre d'abonnés aux réseaux publics pour données comprenant les réseaux à commutation par paquets, les réseaux à commutation de circuits et les réseaux de données par lignes commutées. Les pays devraient indiquer dans une note les types de réseau qu'ils comptabilisent.	
15	4213	Abonnés à l'Internet	Nombre d'abonnés à l'Internet ayant un accès par connexion téléphonique, lignes louées et large bande. Dans les pays où il n'existe pas de redevances d'abonnement pour l'accès à l'Internet, il convient d'établir une distinction entre les abonnés payants et ceux qui disposent d'un accès gratuit. Il serait également utile de recenser uniquement les abonnés actifs.	
15.1	4213d	Abonnés à l'Internet par connexion téléphonique	Nombre d'abonnés à l'Internet par connexion téléphonique. Cette connexion à l'Internet s'établit par l'intermédiaire d'un modem et d'une ligne téléphonique, de sorte que le modem doit composer un numéro téléphonique pour l'accès à l'Internet. Les débits des modems par connexion téléphonique sont généralement limités entre 28 kbit/s et 56 kbit/s.	
15.2	4213tb	Abonnés à l'Internet à large bande	Ces abonnés doivent payer pour disposer d'un accès haut débit à l'Internet public (connexion TCP/IP). Cet accès haut débit est défini comme étant égal ou supérieur à 256 kbit/s, somme de la capacité dans les deux sens. Cette donnée statistique est mesurée indépendamment du type d'accès ou du type de dispositif utilisé pour accéder à l'Internet ou encore du mode de paiement.	
15.2.1	4213cab	Abonnés Internet par câblomodem	Abonnés Internet utilisant des modems reliés aux réseaux de télévision par câble. Le débit devrait être égal ou supérieur à 256 kbit/s, somme de la capacité dans les deux sens.	
15.2.2	4213dsl	Abonnés Internet, technologie DSL	Abonnés à l'Internet utilisant la technologie de la ligne d'abonnés numérique (DSL). Cette technologie permet d'acheminer les informations à grande largeur de bande vers les foyers et les petites entreprises sur des lignes téléphoniques ordinaires en fils métalliques. Les débits devraient être égaux ou supérieurs à 256 kbit/s, somme de la capacité dans les deux sens.	0
15.2.3	4213ob	Autres abonnés à l'Internet large bande	Abonnés à l'Internet utilisant une technologie à haut débit autre que la technologie DSL et le câblomodem. Il s'agit notamment des technologies suivantes: Internet à large bande par satellite, accès Internet de la fibre jusqu'au domicile, réseau LAN Ethernet. Les débits devraient être égaux ou supérieurs à 256 kbit/s, somme de la capacité dans les deux sens.	
16	4212	Nombre estimatif	Prévision du nombre d'utilisateurs de l'Internet. Les	

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
		d'utilisateurs de l'Internet	pays sont de plus en plus nombreux à mesurer ce nombre à l'aide d'enquêtes régulières. Ces enquêtes portent généralement sur un pourcentage de la population correspondant à une certaine tranche d'âge (par exemple, de 15 à 74 ans). Le nombre total d'utilisateurs de l'Internet dans cette tranche d'âge devrait être indiqué mais pas le pourcentage d'utilisateurs de l'Internet dans cette tranche d'âge, multiplié par la totalité de la population. Lorsque les enquêtes ne sont pas disponibles, on peut obtenir une estimation à partir du nombre d'abonnés. La méthode utilisée devrait être indiquée, et faire référence notamment à la fréquence d'utilisation (par exemple, au cours du dernier mois).	
16.1	4212f	Pourcentage d'utilisatrices de l'Internet	Proportion de femmes dans le nombre total d'utilisateurs de l'Internet. Pour obtenir ce pourcentage, on divise le nombre d'utilisatrices de l'Internet par le nombre total d'utilisateurs de l'Internet et on multiplie le résultat par 100.	
16.2	4212f%f	Utilisatrices de l'Internet en pourcentage de la population féminine	Proportion d'utilisatrices de l'Internet par rapport au nombre total de femmes. Pour obtenir ce pourcentage, on divise le nombre d'utilisatrices de l'Internet par le nombre total de femmes et on multiplie le résultat par 100.	
17	424	Emplacements PWLAN	Nombre d'emplacements de <i>réseaux locaux publics hertziens</i> (PWLAN), c'est-à-dire des <i>points d'accès publics à l'Internet</i> . Les PWLAN sont fondés sur la norme IEEE 802.1b et désignés généralement par le terme Wi-Fi.	
18	28	Abonnés au RNIS	Nombre d'abonnés au réseau numérique à intégration de services (RNIS). On peut faire une distinction entre le service avec interface à débit de base (c'est-à-dire, 2B+D, Rec. UIT-T I.420) et le service assuré au débit primaire.	686
18.1	281	Abonnés au RNIS à débit de base	Nombre d'abonnés au service avec interface à débit de base.	666
18.2	282	Abonnés au RNIS à débit primaire	Nombre d'abonnés au service avec interface à débit primaire.	20
18.3	28c	Équivalents en canaux téléphoniques pour le RNIS	Les équivalents en canaux B convertissent le nombre de lignes d'abonné au RNIS en canaux téléphoniques équivalents et il s'agit de la somme des équivalents du débit de base et du débit primaire. Le nombre d'abonnés au débit de base est multiplié par deux et le nombre d'abonnés au débit primaire est multiplié par 23 ou par 30 selon la norme mise en oeuvre.	1330
19	4214	Largeur de bande Internet <sup>v</sup> internationale	Capacité totale de la largeur de bande Internet internationale en mégabits par seconde. Si la capacité est asymétrique (c'est-à-dire que la capacité de réception est plus grande que la capacité d'émission), indiquer la capacité de réception.	14
19.1	4214og	Emission	Capacité totale d'émission de la largeur de bande Internet internationale en mégabits par seconde.	12
19.2	4214ic	Réception	Capacité totale de réception de la largeur de bande Internet internationale en mégabits par seconde.	14
Qualité de service				

<sup>v</sup> Correspond à la somme disponible pour les 2 grands fournisseurs d'accès

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
20	123	Liste d'attente pour une ligne principale	Demandes non satisfaites de raccordement au réseau téléphonique public commuté (RTPC), maintenues en suspens pour cause d'insuffisance des installations techniques (équipements, lignes, etc.). Spécifier le délai normal de réponse aux demandes de nouvelle ligne (par exemple, pas plus de deux semaines à compter de la date de la demande). Au besoin, utiliser les données fournies par le principal opérateur (sur la base du nombre de lignes principales).	
21	143	Dérangements pour 100 lignes principales par an	Nombre total de dérangements sur lignes téléphoniques principales signalés par an. Spécifier si les dérangements dus à des équipements terminaux défectueux chez l'abonné sont compris ou non dans cet indicateur. Les dérangements dont l'opérateur public n'est pas directement responsable devraient probablement être exclus du total, calculé en divisant le nombre total de dérangements signalés <i>pour l'année</i> par le nombre total de lignes principales en service, multiplié par 100. Au besoin, utiliser les données fournies par le principal opérateur (sur la base du nombre de lignes principales).	
22	141	Pourcentage de dérangements résolus le jour ouvrable suivant	Pourcentage de dérangements sur le RTPC qui ont été résolus le jour ouvrable suivant (non compris les jours fériés, c'est-à-dire week-end et jours chômés). Au besoin, utiliser les données fournies par le principal opérateur (sur la base du nombre de lignes principales).	
<b>Trafic</b>				
23	1311m	Trafic téléphonique local (minutes)	Le trafic téléphonique local correspond au trafic effectif (ayant abouti) échangé sur les lignes téléphoniques fixes de la zone locale de tarification à laquelle appartient la station appelante. Il s'agit de la zone à l'intérieur de laquelle les abonnés peuvent communiquer au prix de la taxe locale (lorsqu'elle est applicable). Cet indicateur doit être libellé en minutes. Si l'indicateur est libellé en communications ou en unités (impulsions), fournir une clé de conversion en minutes de trafic appropriée.	<b>139 879 045</b>
23.1	1313wm	Trafic des réseaux fixes vers les réseaux mobiles (minutes)	Total de minutes de trafic entrant à destination d'abonnés cellulaires et en provenance d'un réseau fixe.	<b>43 437 970</b>
23.2	1311im	Trafic Internet commuté (minutes)	Volume total, en minutes, des communications établies par commutation sur le réseau téléphonique public commuté pour accéder à l'Internet.	<b>71 617 348</b>
24	1312m	Trafic téléphonique interurbain national (minutes)	Le trafic interurbain national correspond au trafic téléphonique fixe national effectif (ayant abouti), échangé avec une station extérieure à la zone locale de tarification de la station appelante. Cet indicateur doit être libellé en minutes de trafic.	<b>54 546 142</b>
25	132mb	Trafic téléphonique international d'arrivée et de départ (minutes)	Somme du trafic international d'arrivée et du trafic international de départ (i132m + i132mi).	<b>234 093 957</b>
25.1	132m	Trafic téléphonique international de départ (minutes)	Correspond au trafic effectif (ayant abouti) acheminé, émanant d'un pays donné et reçu en des points de destination extérieurs à ce pays. Cet indicateur doit	<b>22 362 404</b>

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
			être libellé en minutes de trafic.	
25.2	132mi	Trafic téléphonique international d'arrivée (minutes)	Trafic effectif (ayant abouti) acheminé, provenant de l'extérieur du pays, les points de destination étant à l'intérieur du pays. Cet indicateur doit être libellé en minutes de trafic.	111 731 553
26		Trafic de données public (non Internet)	Trafic provenant de services de données publics (X.25, relais de trame ...) (mais à l'exclusion du trafic Internet), mesuré en mégaoctets par seconde.	
27	133wm	Minutes de trafic mobile de départ	Nombre total de minutes de trafic provenant d'abonnés mobiles (minutes de trafic à destination d'abonnés fixes et minutes à destination d'autres abonnés mobiles).	16 606 536
27.1.1	1331wm	Minutes de trafic mobile de départ ou d'arrivée entre stations situées dans un même réseau mobile	Nombre de minutes de trafic entre abonnés mobiles d'un même réseau.	100 364 041
27.1.2	1332wm	Minutes à l'arrivée/au départ, échangées entre réseaux mobiles	Nombre de minutes de trafic entre abonnés à des réseaux mobiles.	8 592 137
27.1.3	1333wm	Minutes à l'arrivée/au départ, échangées entre des réseaux mobiles et un réseau international	Nombre de minutes mobiles au départ d'un pays donné, avec destination extérieure à ce pays.	10 284 331
27.1.4	1334wm	Minutes de trafic itinérant sortant (abonnés du réseau d'origine)	Nombre de minutes de trafic imputables aux abonnés du réseau mobile considéré, pour l'établissement ou la réception de communications en dehors de la zone de service du réseau de rattachement, par exemple, lors de déplacements à l'étranger.	na
27.1.5	1332wmf	Minutes de trafic mobile sortant à destination de réseaux fixes	Nombre de minutes de trafic sortant dans le sens abonné mobile - réseau fixe.	5 559 635
27.2.1	1335 <sup>vi</sup> wm	Minutes de trafic international d'arrivée à destination d'un réseau mobile	Nombre de minutes de trafic entrant (fixe et mobile) reçu en provenance des réseaux mobiles d'un autre pays.	
27.2.2	1336wm	Minutes de trafic itinérant entrant (abonnés étrangers)	Nombre de minutes de trafic imputables à des abonnés étrangers, pour l'établissement et la réception de communications en dehors de la zone de service du réseau de rattachement.	na
27.3	133sms	SMS envoyés	Nombre total de messages SMS envoyés.	na
27.4	133mms	MMS envoyés	Nombre total de messages MMS envoyés.	na
28	22	Télégrammes internationaux sortants	Nombre de télégrammes sortants à plein tarif ayant pour origine un pays donné et une destination extérieure à ce pays. Indiquer le nombre de télégrammes plutôt que le nombre de mots.	
<b>Barèmes</b> Du fait qu'il existe désormais dans la plupart des pays une certaine forme de concurrence, tout au moins sur une partie du marché, il n'existe pas nécessairement de barème normalisé. De surcroît, dans un même service, les barèmes ne sont pas toujours uniformes (par exemple, les redevances d'abonnement au téléphone peuvent varier d'une région du pays à l'autre). Les lignes directrices suivantes pourront être utiles. Il est préférable				

<sup>vi</sup> Observations : Le nom de l'indicateur ne semble pas conforme avec la définition

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
d'utiliser les barèmes appliqués par l'opérateur qui dispose de la part de marché la plus importante (en abonnés ou en minutes). Il est préférable d'utiliser les barèmes applicables à la majorité des consommateurs (par exemple, si la plupart des consommateurs résident en milieu urbain, utiliser la tarification correspondant au milieu urbain). Il est préférable d'inclure les taxes et d'ajouter une note spécifiant si les taxes sont incluses, et à quel taux. Il vaut mieux se référer régulièrement au même opérateur, chaque année, de façon à améliorer les possibilités de comparaison chronologique. Il est préférable d'indiquer les barèmes en monnaie nationale. Lorsque tel n'est pas le cas, le préciser dans une note. <sup>vii</sup>				
31.1			<b>Tarification du service téléphonique local fixe - résidentiel</b>	
31.1.1	151	Redevance d'installation, service téléphonique résidentiel	La redevance d'installation (ou de connexion) s'entend de la redevance forfaitaire appliquée à toute demande de service téléphonique de base résidentiel. Lorsque la redevance varie d'une zone de central à l'autre, il convient d'utiliser celle qui s'applique à la plus grande zone urbaine et de le préciser dans une note.	59 000
31.1.2	152	Abonnement mensuel téléphonique, résidentiel	Par redevance mensuelle d'abonnement, on entend la redevance fixe périodique d'abonnement au RTPC. Cette redevance devrait couvrir la location de la ligne mais non pas celle de l'équipement terminal (par exemple, l'appareil téléphonique) lorsque le marché des équipements terminaux est libéralisé. Des redevances distinctes devraient être mentionnées, le cas échéant, pour les abonnés résidentiels et pour les abonnés professionnels ou selon qu'il s'agit de la première ligne ou de lignes supplémentaires. Lorsque la redevance de location tient compte d'une taxation réduite ou nulle des communications, il convient de le préciser. Lorsque les redevances diffèrent selon la zone de central, il convient de se référer à la plus grande zone urbaine et de le préciser dans une note.	3481
31.1.3	153	Prix d'un appel local de trois minutes (fixe, heures de pointe)	Un appel local correspond à une communication de trois minutes au tarif d'heures de pointe dans la zone de central dans laquelle est utilisé l'équipement terminal de l'abonné (autrement dit, à l'exclusion des appels provenant d'un téléphone public).	118
31.1.4	153o	Prix d'un appel local de trois minutes (heures creuses)	Le prix de la communication locale correspond ici au prix d'une communication de trois minutes en heures creuses, dans la zone de central dans laquelle est utilisé l'équipement terminal de l'abonné (autrement dit, à l'exclusion des appels provenant d'un téléphone public).	59
31.2			<b>Tarification du service téléphonique local fixe - professionnel</b>	
31.2.1	151b	Redevance d'installation, service téléphonique professionnel	La redevance d'installation (ou de raccordement) s'entend de la taxe forfaitaire appliquée lors d'une demande de service téléphonique de base professionnel. Lorsqu'il existe différentes redevances en fonction de la zone de central, il convient d'utiliser celle qui s'applique à la plus grande zone urbaine et de le préciser dans une note.	59 000

<sup>vii</sup> Tous les Montants (pages 11 à 15) sont exprimés en Fcfa TTC (incluant la TVA : 18%)

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
31.2.2	152b	Abonnement téléphonique mensuel, professionnel	La redevance d'abonnement mensuel s'entend de la redevance fixe périodique d'abonnement au RTPC. Cette redevance doit couvrir la location de la ligne, mais non pas celle de l'équipement terminal (par exemple, l'appareil téléphonique), lorsque le marché des équipements terminaux est libéralisé. Des redevances distinctes devraient être indiquées, le cas échéant, pour les abonnés résidentiels et pour les abonnés professionnels ou selon qu'il s'agit de la première ligne ou de lignes supplémentaires. Si la redevance de location tient compte d'une taxation réduite ou nulle des communications, il convient de le préciser. Si les redevances diffèrent selon la zone de central, il convient de se référer à la plus grande zone urbaine et de le préciser dans une note.	3481
32		Tarification des <sup>viii</sup> communications téléphoniques nationales	Coût d'une communication établie en mode automatique (c'est-à-dire, sans intervention d'une opératrice), d'une durée de 3 minutes, à l'intérieur du pays, mais en dehors de la zone du central local. Le cas échéant, la tarification correspondant aux heures de pointe et la tarification correspondant aux heures creuses seront spécifiées. Le coût devrait être indiqué en monnaie nationale, les taxes applicables étant précisées.	236
33		Tarification des appels téléphoniques internationaux	Coût d'une communication établie en mode automatique (c'est-à-dire, sans intervention d'une opératrice), d'une durée de 3 minutes, du pays vers une destination extérieure au pays. Le cas échéant, la tarification applicable aux heures de pointe et la tarification applicable aux heures creuses (réduite) seront indiquées. Le coût devrait être indiqué en monnaie nationale, les taxes applicables étant précisées. Si possible, la tarification internationale sera indiquée pour les différents pays, mais, en tout état de cause, il conviendra d'indiquer au minimum le coût d'une communication à destination des Etats-Unis d'Amérique (principale source et origine du trafic international).	Pays CEDEAO : 1200 F et 900 F Autres pays Afrique : 1800 F et 1350 F Europe et Amérique : 2100 F et 1575 F Reste du monde : 2970 F et 2227 F
			<b>Tarification du trafic cellulaire</b>	
34.1.1	151c	Taxe de raccordement au cellulaire	Redevance initiale, forfaitaire, pour un nouvel abonnement. Ne pas inclure les acomptes remboursables. La taxe de raccordement, qui parfois n'est pas appliquée par certains opérateurs, ne comprend pas le coût de la carte SIM ( <i>subscriber identify module</i> ). Le prix de la carte SIM devrait être compris dans la taxe de raccordement. Il est préférable d'appliquer la taxe de raccordement correspondant au service à prépaiement, pour faciliter la comparaison entre pays. Une note devrait indiquer si les taxes sont comprises (système préféré) ou non.	7 500 F pour Telecel et 15 000 F pour Togocel

<sup>viii</sup> Ceci correspond au trafic interurbain, taxé à 59 Fcfa tous les 45 secondes en heures de pointe et toutes les 56 secondes en heures creuses.

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
34.1.2	152c	Abonnement mensuel au service cellulaire <sup>ix</sup>	Pour ce qui est de la taxe d'abonnement mensuel au service cellulaire, il est préférable, en raison de la diversité des plans appliqués dans les divers pays, de recourir à un système de prépaiement. Dans ce cas, la taxe d'abonnement mensuel est nulle. Toutefois, dans certains pays, une redevance mensuelle d'utilisation des fréquences s'applique même au service à prépaiement. Dans ce cas, le montant doit en être indiqué. Une note devrait indiquer si les taxes sont incluses (système préféré) ou non. Cette note devrait par ailleurs préciser le nombre de minutes mensuelles gratuites, le cas échéant.	1740 F pour Telecel et 5 900 F pour Togocel
34.1.3	153c	Prix d'une communication locale de 3 minutes dans le service cellulaire (heures de pointe)	Dans le cas du prix d'une communication locale de trois minutes, en heures de pointe, établie à partir d'un téléphone cellulaire, et si les opérateurs pratiquent des prix différents selon la destination (par exemple, même réseau mobile, réseau fixe, autre réseau mobile), les différents tarifs devraient être indiqués séparément. Pour faciliter la comparaison entre pays, il est préférable d'utiliser le système à prépaiement. Une note devrait indiquer si les taxes sont incluses (système préféré) ou non.	<u>Telecel Togo</u> Interne : 481 F Vers réseau mobile : 839 Vers réseau fixe : 750 F <u>Togo cellulaire</u> Interne : 495 F Vers réseau mobile : 840 Vers réseau fixe : 750 F
34.1.4	153co	Prix d'une communication cellulaire locale de 3 minutes (heures creuses)	Pour ce qui est du prix d'une communication locale de trois minutes établie à partir d'un téléphone cellulaire, pendant les heures creuses, et si les opérateurs pratiquent des prix différents selon la destination (par exemple, même réseau mobile, réseau fixe, autre réseau mobile), les différents tarifs devraient être indiqués séparément. Pour faciliter la comparaison entre pays, il est préférable de recourir au prépaiement. Une note devrait préciser si les taxes sont incluses (système préféré) ou non.	<u>Telecel Togo</u> Interne : 241 F Vers réseau mobile : 793 Vers réseau fixe : 709 F <u>Togo cellulaire</u> Interne : 495 F Vers réseau mobile : 840 Vers réseau fixe : 750 F
34.1.5	153sms	Prix d'un SMS, service mobile cellulaire	Prix d'envoi (à l'intérieur du pays) d'un message SMS à partir d'un téléphone mobile.	<u>Telecel Togo</u> Interne : 35 F Vers autre réseau mobile : 50 F <u>Togo Cellulaire</u> Interne au réseau : 40 F Vers autre réseau mobile : 50 F
34.2	153m	Taxe de terminaison <sup>x</sup> mobile	De nombreux opérateurs de télécommunication extérieurs (au pays considéré) imposent désormais des redevances substantielles au titre de la terminaison des communications téléphoniques à destination de téléphones mobiles et d'autres équipements hertziens (radiorecherche, ordinateurs personnels, assistants personnels numériques). Pour couvrir ces redevances, l'opérateur établi dans le pays considéré ajoute une taxe de terminaison dans le service mobile à toutes les communications assurées à destination d'équipements hertziens dans les pays affectés. Le montant de cette	

<sup>ix</sup> Montant appliqué aux abonnés postpaiement

<sup>x</sup> Cette surtaxe n'existe pas au Togo. Toutefois, la taxe de terminaison ordinaire sur les appels entrants terminant sur réseaux mobiles existent, et sont imposés par l'opérateur fixe qui assure cette terminaison.

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
			surtaxe varie d'un pays à l'autre, et la taxe s'applique à toutes les communications à destination d'équipements hertziens.	
<b>Autres tarifs concernant les services de communication de données</b>				
35		Taxes applicables aux lignes louées	Redevance de raccordement et redevance mensuelle de location. Préciser les tarifs applicables aux différents débits (2,4; 4,8; 9,6; 19,2; 56/64 kbit/s et 1,5/2,0 Mbit/s) et aux différentes distances.	
36		Taxes de communication de données	Taxe de raccordement, taxe mensuelle de location et taxe d'établissement pour communications de données par commutation de paquets.	
37	<b>Tarifs Internet</b>		Taxe de raccordement, taxe mensuelle de location et <sup>xi</sup> taxe d'utilisation pour le service d'accès Internet, spécifiées aussi bien pour l'accès automatique que pour le service large bande (DSL et/ou cablômodem). Si des taxes additionnelles sont prévues pour l'utilisation du téléphone en commutation automatique, préciser les montants dans une note. Une note devrait indiquer si l'abonnement comporte des heures gratuites et/ou est de type forfaitaire.	<b><u>Mise en service:</u></b> Togo Telecom : 472 000 Café Informatique: 392 000 F E-process : 590 000 F <b><u>Redevance mensuelle:</u></b> Togo Telecom : 64 kbps : 413 000 F 128 kbps : 649 000 F Café Informatique: 64 kbps : 413 000 F 128 kbps : 708 000 F E-process : 64 kbps : 413 000 F
37.1	4213c	Taxe de raccordement à l'Internet	Taxe forfaitaire initiale pour un nouvel abonnement. Les acomptes remboursables ne doivent pas être compris. Une note devrait indiquer si les taxes sont comprises (système préféré) ou non.	0 <sup>xii</sup>
37.2	4213s	Abonnement mensuel Internet	Taxe mensuelle d'abonnement au service Internet. Une note devrait préciser si les taxes sont comprises (système préféré) ou non. La note devrait également spécifier le nombre d'heures mensuelles gratuites, le cas échéant.	5 000 F
37.3	4213p	Internet - Prix de la <sup>xiii</sup> connexion par minute (heures de pointe)	Coût, par minute (heures de pointe), de la connexion, lorsque les heures Internet gratuites comprises dans l'abonnement ont été utilisées. Une note devrait indiquer si les taxes sont comprises (système préféré) ou non.	5 F
	4213po	Internet - Prix de la connexion par minute (heures creuses)	Coût, par minute (heures creuses), de la connexion, lorsque les heures Internet gratuites comprises dans l'abonnement ont été utilisées. Une note devrait indiquer si les taxes sont comprises (système préféré) ou non.	5 F

<sup>xi</sup> Les montants mis ici concernent les frais des liaisons spécialisées Internet

<sup>xii</sup> C'est pratiquement gratuit lorsque les ISP viennent faire l'installation. Ce qui est exigé est la redevance mensuelle

<sup>xiii</sup> Il s'agit ici des tarifs les plus bas pratiqués dans les cybercafés. Les tarifs de la connexion à Internet par le dial-up s'élèvent à 14,75 F et 11,8 F respectivement aux heures de pointe et creuses.



	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
37.4	4213_t20	Tarif d'accès Internet (20 heures par mois)	Cet indicateur donne le prix le moins élevé pour 20 heures d'utilisation de l'Internet par mois. Il couvre les composantes tarifaires de la location mensuelle de la ligne, la taxe d'utilisation de la ligne et la taxe d'accès à l'Internet, ainsi que toute taxe éventuellement applicable (ce service étant utilisé à la fois par les particuliers et par les entreprises). Le tarif retenu pour un pays donné serait le forfait 20 heures par mois le moins cher, largement disponible (ou, dans le cas des fournisseurs de services régionaux, disponible dans la capitale), proposé au plus grand public sans restriction (donc à l'exclusion des offres réservées aux entreprises ou des offres à temps limité et des offres groupées avec d'autres services).	26 181 F <sup>xiv</sup>
<b>PERSONNEL</b>				
38	51	Total personnel des télécommunications à plein temps	Personnel employé à plein temps par les exploitants du réseau de télécommunication du pays pour la fourniture de services publics de télécommunication, y compris mobiles. Le personnel employé à mi-temps devrait être mentionné sur la base des équivalents à temps complet. Dans la mesure du possible, il convient de ne pas tenir compte des agents qui ne sont pas principalement affectés à la fourniture des services de télécommunication (par exemple, ceux qui travaillent dans les services postaux ou pour l'exploitation de la radiodiffusion).	1150 <sup>xv</sup>
38.1	51f	Personnel féminin des télécommunications	Personnel féminin des télécommunications, à plein temps.	
38.2	51w	Personnel des communications mobiles	Nombre total de personnel employé par les opérateurs des réseaux cellulaires mobiles. Cet indicateur se rapporte aux opérateurs mobiles d'infrastructure et pas au personnel employé par les revendeurs.	152 <sup>xvi</sup>
<b>RECETTES</b>				
39	75	Recettes des services de télécommunication	Total des recettes de télécommunication acquises. Ce total ne devrait pas comprendre les recettes provenant de services autres que les télécommunications. Les recettes (le chiffre d'affaires) se composent des gains des services de télécommunication pour l'exercice financier considéré. Elles ne devraient pas comprendre les fonds reçus au titre des recettes des exercices précédents, ni les entrées au titre de prêts de l'Etat ou d'investisseurs extérieurs, ni les fonds au titre de contributions ou d'acomptes remboursables des abonnés.	70 041 016 975 <sup>xvii</sup>
40	71	Recettes du service	Recettes de raccordement, d'abonnement et de	

<sup>xiv</sup> Il s'agit d'une connexion par ligne téléphonique : abonnement mensuel téléphonique 3481F + redevance mensuelle pour l'accès Internet : 5000 F + coût de la communication Internet 14, 75 F\*60 minutes \* 20 heures

<sup>xv</sup> Correspond au personnel employé à plein temps par les opérateurs de téléphonie classique : Togo Telecom, Togo Cellulaire et Telecel Togo

<sup>xvi</sup> Personnel employé par les deux opérateurs de réseaux mobiles cellulaires

<sup>xvii</sup> Valeur correspondant aux trois opérateurs : Togo Telecom, Togo Cellulaire et Telecel Togo

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
		téléphonique	communications, téléphonie fixe.	
40.1	711	Recettes des taxes de raccordement au téléphone	Recettes provenant des redevances de raccordement (d'installation) au service téléphonique. Peuvent inclure les taxes de transfert ou de cessation de service.	
40.2	712	Recettes des redevances d'abonnement au téléphone	Recettes correspondant aux redevances périodiques d'abonnement au RTPC et à la location des équipements le cas échéant.	
40.3	7131	Recettes des appels locaux	Recettes des appels locaux.	
40.4	7132	Recettes des appels nationaux interurbains	Recettes des appels nationaux interurbains.	
40.5	7133	Recettes des appels internationaux	Devraient englober les taxes imputées aux abonnés pour l'établissement de communications de départ, après déduction de la partie de ces recettes à verser à d'autres organisations au titre du trafic de télécommunication sortant (exploitants du pays de destination et le cas échéant des pays de transit) et après inclusion des recettes reçues d'exploitants étrangers au titre de la terminaison d'appels établis de l'étranger. Les entrées reçues d'exploitants étrangers et les sorties destinées à des exploitants étrangers devraient être indiquées séparément.	
41	731	Recettes de transmission de données	Recettes de services de données, par exemple communications de données (commutation par paquets) et accès Internet, mais à l'exclusion du service télégraphique ou du service télex.	
42	732	Recettes des circuits loués	Recettes au titre de la fourniture de lignes (circuits) loués.	
43	741	Recettes des communications mobiles	Recettes au titre de la fourniture de services de communication mobile de tous types: cellulaires, circuits radioélectriques de prolongement privés, radiorecherche.	
43.1	741d	Recettes des communications mobiles de données	Recettes de services de communication mobile de données: messagerie texte, accès à grand débit au réseau, utilisation du protocole d'application hertzienne (WAP), etc.	
43.1.1	741m	Recettes de messagerie texte et multimédia	Recettes de messagerie texte (SMS ...) et autre que texte, à savoir messages données multiples, par exemple taxes d'accès grand débit et utilisation WAP.	
44	74	Autres recettes	Toutes autres recettes non comptabilisées ailleurs, au titre de la fourniture de services de télécommunication publics. Il convient de préciser dans une note quelles sont les principales sources d'"autres" recettes de télécommunication.	
45		Valeur ajoutée dans le secteur des télécommunications	Correspond aux recettes générées par le secteur des services de télécommunication, déduction faite des traitements et rémunérations, du coût des investissements en capital et des charges financières, avant bénéfice.	36 404 732 339 <sup>xviii</sup>
<b>Investissements</b>				

<sup>xviii</sup> Valeur correspondant aux trois opérateurs : Togo Telecom, Togo Cellulaire et Telecel Togo

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
46	81	Investissement annuel dans les télécommunications	Investissements annuels affectés à l'acquisition de biens et d'installations de télécommunication (y compris service mobile). Le terme investissement désigne les dépenses qu'occasionne l'acquisition de biens (y compris de nature intellectuelle et incorporelle, par exemple, logiciels) et d'installations. Ces acquisitions peuvent porter sur des installations initiales ou sur le développement d'installations existantes devant être utilisées pendant une longue période. Il convient de noter que sa définition s'applique aux services de télécommunication offerts au public, à l'exclusion des investissements en logiciels ou équipements de télécommunication à usage privé. On parle également de <i>dépenses d'équipement</i> .	24 277 831 133 <sup>xix</sup>
46.1	83	Investissement dans le service téléphonique fixe	Total des investissements annuels en équipement de téléphonie fixe.	10 391 443 535
46.2	841m	Investissement dans le service des communications mobiles	Dépenses annuelles d'équipement dans les réseaux de communications mobiles.	13 886 367 598
46.3	841f	Investissement extérieur	Investissements annuels dans le secteur des télécommunications, provenant de sources étrangères.	
Indicateurs d'accès communautaire				
47	PIAC1	Pourcentage de localités dotées de centres publics d'accès Internet	Un centre public d'accès à l'Internet (PIAC, <i>public Internet access centre</i> ) est un emplacement, lieu, centre de formation où l'accès à l'Internet est offert au public, à plein temps ou à temps partiel. Il peut s'agir de télécentres, de centres numériques communautaires, de cafés Internet, de bibliothèques, de centres d'éducation, etc., dès lors que l'accès à l'Internet est proposé au grand public. Tous ces centres devraient être équipés d'au moins un ordinateur pour l'accès à l'Internet. Par localité, on désigne les villages et villes du pays. Le pourcentage de localités dotées de PIAC est calculé en divisant le nombre de localités comportant au moins un PIAC par le nombre total de localités du pays, le tout multiplié par 100. Cet indicateur devrait être ventilé par couches de population.	na <sup>xx</sup>
48	PIAC2	Pourcentage de la population ayant accès à un PIAC	Nombre d'habitants couverts par un PIAC en pourcentage du total de la population du pays. Lorsqu'une localité (village, ville ...) dispose d'au moins un PIAC, on considère que la totalité de la population vivant dans cette localité est desservie par ce PIAC.	na
49	PIAC3	Nombre de localités disposant d'un PIAC	Ensemble des localités (villages, villes) disposant au moins d'un centre public d'accès à l'Internet (PIAC, <i>public Internet access centre</i> ). Un PIAC est un emplacement, lieu, ou centre de formation où l'accès à l'Internet est offert au public, à plein temps ou à temps partiel.	na
50	PIAC4	Population cible pour les services DCC	Population potentielle (ensemble des habitants âgés de plus six ans) moins le nombre d'utilisateurs de l'Internet	na

<sup>xix</sup> Idem

<sup>xx</sup> Na : valeur non disponible nécessitant surtout une enquête

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
			non-membres de la communauté (les utilisateurs de l'Internet non-membres de la communauté sont par définition les habitants disposant d'un accès à l'Internet différent de l'accès proposé au niveau d'un PIAC, par exemple au domicile).	
51	PIAC5	Nombre total de PIAC	Nombre total de centres publics d'accès à l'Internet (PIAC). Un PIAC est un emplacement, lieu ou centre de formation où l'accès à l'Internet est offert au public, à plein temps ou à temps partiel. Exemple de PIAC: télécentres, centres communautaires numériques, cafés Internet, bibliothèques, centres d'éducation et établissements comparables, dès lors que l'accès à l'Internet y est mis à la disposition du grand public. Tous les centres doivent disposer d'au moins un ordinateur en service public pour l'accès à l'Internet.	na
51.1	PIAC6	Nombre total de DCC	Nombre total de centres numériques communautaires ( <i>digital community centres</i> ) du pays. Un DCC est un lieu où le public peut avoir accès aux services Internet à l'aide d'équipements terminaux mis à sa disposition. Un DCC est une structure publique d'accès universel. L'accès doit être équitable, universel et financièrement abordable. Pour qu'un centre public d'accès à l'Internet ( <i>public Internet access centre</i> - PIAC) puisse être considéré comme un DCC, un certain nombre de conditions minimales doivent être remplies. Un DCC doit être équipé d'au moins un ordinateur et une imprimante et disposer au minimum d'un débit de connexion de 64 kbit/s avec le fournisseur de services Internet. Les utilisateurs doivent par ailleurs bénéficier d'un appui, la maintenance doit être assurée sur site, et le centre doit être ouvert au moins 20 heures par semaine.	na
51.2	PIAC7	Nombre total d'autres PIAC	Nombre total d'autres centres publics d'accès à l'Internet (à l'exclusion des PIAC et des DCC): cybercafés, par exemple. Les centres d'éducation peuvent être classés comme DCC ou PIAC, selon les conditions remplies (cf. indicateurs 51 et 51.1).	
52	PIAC8	Nombre total d'ordinateurs disponibles dans les DCC	Nombre total d'ordinateurs disponibles dans l'ensemble des centres numériques communautaires (lieu où le public peut avoir accès aux services Internet à partir des équipements terminaux mis à sa disposition). cf. indicateur 51.1 pour la définition d'un DCC.	na
53	PIAC9	Pourcentage effectif d'utilisation des DCC	Pour calculer le pourcentage effectif d'utilisation des DCC, on divise le nombre effectif d'utilisateurs de DCC par la population cible des services DCC (définition: cf. indicateur 50), le tout étant multiplié par 100. Par définition, un utilisateur est une personne qui accède à l'Internet au moins une fois par mois.	na
<b>AUTRES INDICATEURS</b>				
54	955	Nombre de récepteurs radio	Nombre total de récepteurs radio, c'est-à-dire d'équipements capables de recevoir des signaux sonores radiodiffusés sur les principales gammes d'ondes (FM, AM, LW et SW). Un récepteur radio peut être un équipement indépendant ou être intégré à un autre équipement: Walkman, autoradio, radioréveil.	na
55	965	Nombre de récepteurs de	Nombre total de récepteurs de télévision. Un récepteur de télévision est un équipement capable de recevoir	na

	Code UIT <sup>i</sup>	Indicateurs	Définition	Montant
		télévision	les signaux de télévision radiodiffusés, par les moyens les plus courants: transmission hertzienne, transmission par câble, transmission par satellite. Un récepteur de télévision peut être un équipement indépendant ou intégré à un autre équipement (ordinateur, téléphone mobile). Il peut être utile d'établir une distinction entre la réception numérique et la réception analogique et entre les récepteurs de télévision ne recevant qu'un nombre limité de signaux (en général, par voie hertzienne) et les équipements disposant d'un grand nombre de canaux (réception par satellite/câble).	
56	965m	Nombre total d'abonnés à la télévision multicanal	965m=965c+965s. Nombre total d'abonnés à la télévision multicanal (de Terre et par satellite).	na
56.1	965c	Nombre d'abonnés à la télévision multicanal de Terre	Nombre total d'abonnés à la télévision multicanal de Terre. Télévision par câble, télévision numérique de Terre, système hyperfréquence de distribution multipoint (MMDS), réception collective de télévision par satellite (SMATV).	na
56.2	965s	Antennes de réception directe télévision par satellite	Nombre de paraboles installées chez les particuliers et permettant de recevoir les émissions de télévision directement à partir des satellites.	na
57	965cp	Ménages pouvant avoir accès à la télévision multicanal	Nombre de ménages disposant d'un raccordement à la télévision multicanal (de Terre ou par satellite), qu'ils soient abonnés ou non.	na
58	422	Nombre d'ordinateurs personnels	Nombre d'ordinateurs personnels (PC) en service dans le pays. Cet indicateur couvre les PC proprement dits, les portables, les assistants personnels, etc.; ne sont compris ni les terminaux raccordés à des ordinateurs principaux et les mini-ordinateurs essentiellement utilisés en partage, ni les téléphones "intelligents" ne disposant que d'une petite partie des fonctions d'un PC (non pourvus, par exemple, d'un clavier de dimensions normales, d'un grand écran, d'une connexion Internet, de lecteurs, etc.).	na

NB :

1. Les données non fournies pourront l'être pour l'avenir après cette réunion mondiale.
2. Les indicateurs sont présentés, comme indiqué plus haut, dans le rapport d'activités de l'ART&P



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**

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**5<sup>TH</sup> WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, GENEVA, 11-13 OCTOBER 2006**

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**FOR INFORMATION**

**SOURCE:** CRC, Bulgaria

**TITLE:** Data collection and dissemination process of Communications Regulation Commission,  
Bulgaria

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## **Data collection and dissemination process of Communications Regulation Commission, Bulgaria**

For the implementation of its regulatory functions the Communications Regulation Commission (CRC) collects and processes on a regular basis data on the national telecommunication activities. Information is requested directly from the operators via/on questionnaires (filled in by the licensed/registered telecommunications operators and the internet services providers, not subject to any authorization and providing services on a free regime). According to the license provisions every telecommunications operator is obliged to submit data on annual basis, while every fixed or mobile operator has to provide information twice per year (in a period of six months).

A set of different questionnaires for data collection is worked out to cover the following telecommunications activities:

- Provision of fixed telephone services
- Provision of fixed telephone service through public payphones
- Provision of mobile services (through NMT, GSM, UMTS and TETRA networks)
- Provision of leased lines
- Provision of data transmission services
- Provision of cable TV and communication services through cable distribution networks
- Provision of services through „point to point” networks in the fixed radio service
- Provision of services through satellite networks in the fixed radio service
- Broadcasting services (radio and TV)
- Provision of Internet access

On the basis of the information collected, database is maintained and updated by types of telecommunication activities. Regarding the current monitoring of the development of the national market different indicators, defined by CRC are being followed. Detailed revision of the indicators included in the questionnaires is made regular (annually) in order to verify that they bring relevant information.

At the moment, a new electronic (pdf) format of the questionnaires is being worked out and tested. The new format would facilitate the data collection process, including filling in of the questionnaire, data verification and processing.

The information gathered by the questionnaires is being used for the preparation of the Annual Report of the CRC (available on [www.crc.bg](http://www.crc.bg), section *annual reports*), as well for performance of the specific regulatory functions.

CRC also provides information to various international organizations and institutions - ITU, the European Commission, the European Regulators Group (ERG)/Independent Regulators Group (working groups and projects). Information is being gathered also within the range of Market Monitoring projects - Project for Monitoring of Telecommunication Markets in South East Europe “SEE Observatory” ([www.cullen-international.com](http://www.cullen-international.com)).

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**FOR INFORMATION**

**SOURCE:** NTC, Sudan

**TITLE:** Background paper on the ICT sector in Sudan

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**ITU World  
Telecommunication/ICT  
Indicators (WTI) Meeting  
Geneva, 2006**



**Background paper on the ICT sector in Sudan**

*prepared by:*

*Ola Hamdi Kamil Amin*

*October 2006*

## **Introduction:**

**Sudan** (officially the **Republic of the Sudan**) is the largest country by area in Africa, and the tenth largest country in the world by area. Its area is 2.5 million sq. km. (967,500 sq. mi.), it consists of 25 states, situated in Northern Africa. The capital is Khartoum. It is bordered by Egypt to the north, the Red Sea to the northeast, Eritrea and Ethiopia to the east, Kenya and Uganda to the southeast, Democratic Republic of the Congo and the Central African Republic to the southwest, Chad to the west, and Libya to the northwest.



## **People:**

- ♦ Nationality: Sudanese.
- ♦ Population (2005 est.): 35.1 million.
- ♦ Annual population growth rate (2003-2008): 2.53%.
- ♦ Ethnic groups: black 52%, Arab 39%, Beja 6%, foreigners 2%, other 1%

♦Religions: Islam (Sunni) 70% (in north), indigenous 25%, Christian 5% (mostly in south and Khartoum)

♦Languages: Arabic (official), , English

♦Local dialects like Nubian, Ta Bedawie, diverse dialects of Nilotic, Nilo-Hamitic, Sudanic languages

♦Education: Literacy rate: 61% (2003 est.)

♦Health: birth rate: 34.5/1000; infant mortality rate: 61.0/1000; life expectancy: 58.9; density per sq mi: 45

♦Economic : GDP (2005 est.)\$84.93 billion; per capita \$2,100. Real growth rate: 7.7%. Inflation: 11%. Unemployment: 18.7% (2002 est)

### **Telecom sector :**

◆Ministry of information and communication:

It supervises The National Telecom. Corporation (NTC) ,The Public Post and Telegram Corporation, The Sudanese Radio and Television Corporation , Sudan News Agency , The External Information Council, SUNA International Relations, Sudan Academy for Communications Sciences and The National Press Council.

◆National telecom. Corporation :

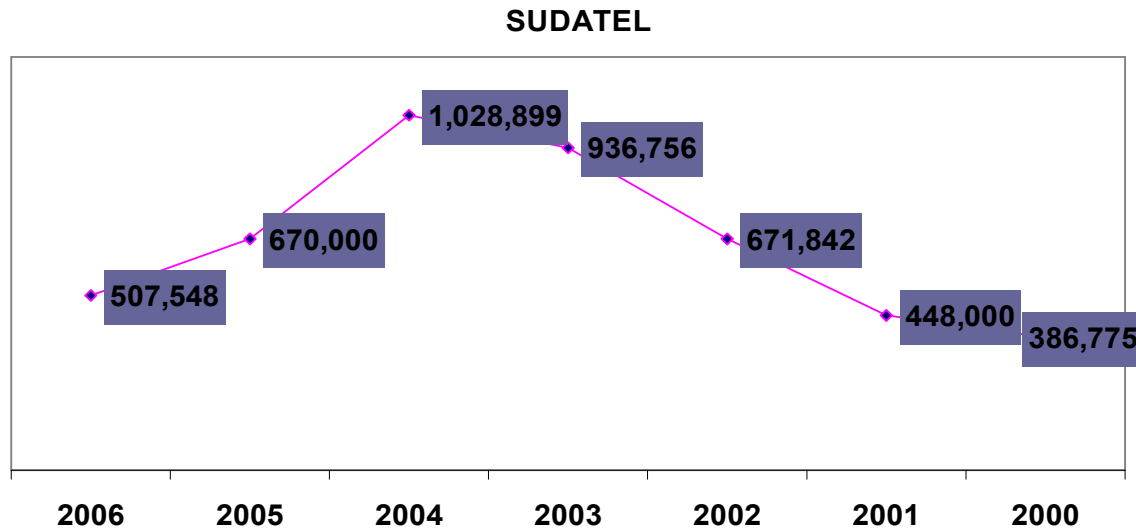
Established on 2001 to replace the national telecom council . in 2001 the telecom Act was issued. Its responsibilities include organizing the work of operators and service providers; the execution of the ministry politics; to improve the performance of telecom sector

### **Telecom. Market:**

Two fixed telephone operators:

◆**Sudatel:**

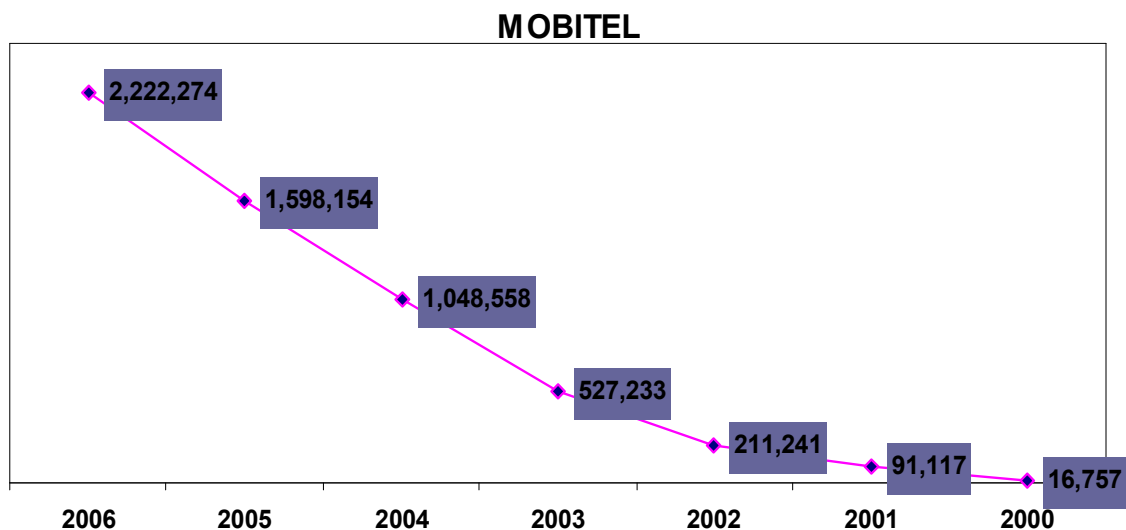
established on 1993; and started to provide its service on 1994. It had been the monopolist for long time now it has a competitor (canar); the no. of its subscribers is 507,584 which declined rapidly (1,028,899 in 2004 to 670,000 in 2005 ).



♦ Canar : established on 2005; started its commercial operation on 2006 . Now it has 71,636 subscriber.

♦ Three Public Cellular Mobile operators :

1. Mobitel: using GSM and GPRS technologies.



2. Areeba : started to provide the service in July 2005 , using GSM technology and 3G (planed)
3. Sudani recently established (2006), owned by Sudatel and using its infrastructure

- ♦ 23 Internet Service Providers.
- ♦ 20 Pre-paid For Fixed telephone Service Providers.
- ♦ 19 Value-added Service Providers. SMS, IVR,

## **The measurement of ICT indicators:**

The national telecom. Corporation is mainly responsible of data collection, estimation and forecasting sometimes. It could resort to other institutions to get the related information if any , but firstly we check the reliability of this information, actually there is no many institutions taking care of the ICT measurement .But recently many entities are getting more and more interested in these indicators to ensure the status of the technology , which becomes the most important indicator of the development, innovation and promotion .

The main beneficiaries are all the institutions, ministries , companies and banks. NTC can get the main indicators directly from the operators and service providers ( main telephone lines , no. of cellular mobile subscribers , .....etc) . but there are real difficulties in the measurement of more specific indicators ; such as no. of personal computers , internet access and usage , no of actual tv sets , ..... etc .

For all these difficulties NTC has a proposal for a survey to cover all Sudan in order to get the real indicators , that to be considered as a base to plan and forecast .

## **The ICT Indicators :**

Here the core indicators according to the ITU handbook :

No.	ITU code <sup>1</sup>	Indicator	Comments
<b>Fixed Telephone network</b>			
1	112	Main (fixed) telephone lines in operation	570,000
2	117	Total capacity of local public switching exchanges	1,491,826 (switch) 2,023,640 (network)
3	1142	Percent of main lines connected to digital exchanges	100%
4	116	Percent of main lines which are residential	NA
5	1162	Percent of main lines in urban areas	NA
6	1163	Number of localities with telephone service	244

No.	ITU code <sup>1</sup>	Indicator	Comments
7	1112	Public payphones	3669
<b>Mobile network</b>			
8	271	Mobile cellular telephone subscribers (post-paid + prepaid)	Mobitel : 1598154 Areeba : 229786 Total : 1827940
8.1	271p	Mobile cellular subscribers: prepaid	Mobitel : 1542610 Areeba : 225829 Total : 1768439
9	2712	Digital mobile cellular subscribers	1827940
9.1	271h	Total number of subscribers to mobile networks	1827940
9.1.1	271L	Number of subscribers to low and medium speed mobile networks	1827940
9.1.2	271G	Number of subscribers to IMT-2000 (3G) high-speed mobile networks	- CDMA 2000 1x established on 2006 (Sudani). - UMTS in under testing (Areeba)
10	271land	Percent coverage of mobile cellular network (land area)	N/A
11	271pop	Percent coverage of mobile cellular network (population)	5.22%

<b>Text/data network</b>			
12	311	Telex subscriber lines	Service stopped
13	412	Private leased circuits	1269
14	413	Total subscribers to public data networks	3169
15	4213	Internet subscribers	DSL : 1900 Dial up : 9 ISP
15.1	4213d	Dial-up Internet subscribers	N/A
15.2	4213tb	Broadband Internet subscribers	2026
15.2.1	4213cab	Cable modem Internet subscribers	Service not established

15.2.2	4213dsl	DSL Internet subscribers	1900
15.2.3	4213ob	Other broadband Internet subscribers	90 VSAT
16	4212	Estimated Internet users	1.14 million
16.1	4212f	Percent female Internet users	49.9 %
16.2	4212f%	Female Internet users as percent of female population	3.2 %
17	424	PWLAN locations	N/A
18	28	ISDN subscribers	400 (ITU Report) service stopped.
18.1	281	Basic rate ISDN subscribers	N/A
18.2	282	Primary rate ISDN subscribers	N/A
18.3	28c	ISDN voice channel equivalents	N/A
19	4214	International Internet bandwidth	20 Mbps
19.1	4214og	Outgoing	10 Mbps Uplinks
19.2	4214ic	Incoming	20 Mbps

### Quality of service

Quality of service Parameters and indicators are the most important indicators to monitoring telecom sector and the operator's performance.

QoS indicators must include some parameter regarding to customer complaint and users perceptions.

20	123	Waiting list for main lines	N/A
21	143	Faults per 100 main lines per year	95.5
22	141	Percent of telephone faults cleared by next working day	90%
*	*	General Complaints	544238 (Sudatel)

### Traffic

23	1311m	Local telephone traffic (minutes)	N/A
23.1	1313wm	Fixed to mobile traffic (minutes)	529,780,000
23.2	1311im	Internet Dial-up traffic (minutes)	40,55,34,696
24	1312m	National trunk telephone traffic (minutes)	512,000,000 Including 131 1m

25	132mb	International incoming and outgoing telephone traffic (minutes)	450,000,000
25.1	132m	International outgoing telephone traffic (minutes)	100,000,000
25.2	132mi	International incoming telephone traffic (minutes)	350,000,000
26		Public data traffic (non-Internet)	N/A
27	133wm	Outgoing mobile minutes	1,779,068,184
27.1.1	1331wm	Outgoing/originating mobile minutes to same mobile network	N/A
27.1.2	1332wm	Outgoing/originating mobile minutes to other mobile networks	N/A
27.1.3	1333wm	Outgoing/originating mobile minutes to international	64,504,884
27.1.4	1334wm	Roaming minutes out (own subscribers)	N/A
27.1.5	1332wmf	Outgoing mobile minutes to fixed networks	171,846,730 (local+ national)
27.2.1	1335wm	Incoming international minutes to mobile network	N/A
27.2.2	1336wm	Roaming minutes in (foreign subscribers)	N/A
27.3	133sms	SMS sent	N/A
27.4	133mms	MMS sent	N/A
28		International outgoing telegrams	N/A



Tariffs (SD)			
31.1			Fixed local telephone service tariffs –residential
31.1.1	151	Installation fee for residential telephone service	5,000
31.1.2	152	Monthly subscription for residential telephone service	585
31.1.3	153	Price of a 3-minute fixed telephone local call (peak rate)	15
31.1.4	153o	Price of a 3-minute fixed telephone local call (off-peak rate)	15
31.2			
31.2.1	151b	Installation fee for business telephone service	5,000
31.2.2	152b	Monthly subscription for business telephone service	585
32		National telephone call prices	16
33		International telephone call prices	110 (1 <sup>st</sup> group) 152 (2 <sup>nd</sup> group) 250 (3 <sup>rd</sup> group)
34.1.1	151c	Mobile cellular connection charge	40,000Business 20,000Regular Mobipaid 20,000 (16,750 credit) Salamat 7,500 (4.250 credit) Sawasana 12,500 (100 credit)
34.1.2	152c	Mobile cellular monthly subscription	Business 3,000 Regular 1,500 Mobipaid 750 Salamat 750 Sawasana 750

34.1.3	153c	Mobile cellular - price of 3 minute local call (peak)	Mobile – Own Mobile Business 18 Regular 21 Mobipaid 23 Salamat 23 Sawasana 23 Mobile-Local Business 16 Regular 18 Mobipaid 19 Salamat 19 Sawasana 19 Mobile-National Business 26 Regular 28 Mobipaid 29 Salamat 29 Sawasana 29 Mobile-Other mobile Business 22 Regular 22 Mobipaid 28 Salamat 28 Sawasana 28
34.1.4	153co	Mobile cellular - price of 3 minute local call (off-peak)	Mobile – Own Mobile Business 18 Regular 21 Mobipaid 23 Salamat 23 Sawasana 23 Mobile-Local Business 16 Regular 18 Mobipaid 19 Salamat 19 Sawasana 19 Mobile-National Business 26 Regular 28 Mobipaid 29 Salamat 29 Sawasana 29 Mobile-Other mobile Business 22 Regular 22 Mobipaid 28 Salamat 28 Sawasana 28
34.1.5	153sms	Mobile cellular – price of SMS	5

34.2	153m	Mobile termination rate	14
Other data tariffs			
35		Leased line charges	P-to-P local loop Connection charge 5,000 Monthly rental charge 64 k.bit 12,000 128 k.bit 20,000 256 k.bit 30,000 384 k.bit 35,000 512 k.bit 45,000 1 mega.bit 65,000 2 mega.bit 120,0000 P-to-P inter exchange Connection charge 5,000 Monthly rental charge 64 k.bit 13,000 128 k.bit 22,000 256 k.bit 37,500 384 k.bit 45,000 512 k.bit 50,000 1 mega.bit 84,000 2 mega.bit 150,0000 P-to-P intra exchange Connection charge 5,000 Monthly rental charge 64 k.bit 21,500 128 k.bit 37,000 256 k.bit 62,500 384 k.bit 94,000 512 k.bit 140,000 1 mega.bit 216,000 2 mega.bit 432,0000
36		Data communication charges	Activation charge 4,000 Monthly rental charge 64 k.bit 8,000 128 k.bit 13,500 256 k.bit 23,000 384 k.bit 35,000 512 k.bit 52,000 1 mega.bit 80,000 2 mega.bit 160,000
37	Internet tariffs		
37.1	4213c	Internet connection charge	Dial-up (free) DSL 25,000 ISDN 5000
37.2	4213s	Internet monthly subscription	Dial-up (free) DSL 10,000 ISDN 2000
37.3	4213p	Internet - price of per minute (peak) connection	Dial-up : 4 DSL,ISDN : flat rate
	4213po	Internet - price of per minute (off-peak) connection	Dial-up : 4 DSL,ISDN : flat rate
37.4	4213_t20	Internet access tariff (20 hours per month)	Dial-up : 80 DSL,ISDN : flat rate

<b>STAFF</b>			
38	51	Total full-time telecommunication staff	3378
38.1	51f	Female telecommunication staff	N/A
38.2	51w	Mobile communications staff	419

<b>REVENUE</b>			
39	75	Total revenue from all telecommunication services	N/A
40	71	Revenue from telephone service	40,472,475,500 (included 711,712,713.1,713.2)
40.1	711	Income from telephone connection charges	N/A
40.2	712	Income from telephone subscription charges	N/A
40.3	7131	Income from local calls	N/A
40.4	7132	Income from national long distance calls	N/A
40.5	7133	Income from international calls	7,538,036,000
41	731	Revenue from data transmission	279,971,750
42	732	Revenue from leased circuits	6,797,389,500
43	741	Revenue from mobile communications	99,551,744,000
43.1	741d	Mobile data revenues	N/A
43.1.1	741m	Text and multimedia messaging revenues	N/A
44	74	Other revenues	N/A
45		Value-added from telecommunications sector	N/A

<b>INVESTMENT</b>			
46	81	Total annual investment in telecom	N/A
46.1	83	Fixed telephone service investment	314,631,862,500
46.2	841m	Mobile communication investment	55,888,143,000
46.3	841f	Foreign investment	36,304,375,770

### **COMMUNITY ACCESS INDICATORS**

Recently, NTC with help from STIF preparing large proposal to sitting up PIACs. Phase one of the project cover 16 stats (from 25) with 5 center on each (80 center). Every center equipped with 15 PC accessing internet, 4 Telephones, Fax machine and Photocopier.

Centers must offer:

- Basic communications Services.
- Fax and Photocopying.
- Training.
  - IT.
  - Community developing.
- Internet Café.
- Technical Illiteracy Erasure.
- E-
  - Commerce.
  - Learning.
  - Government.
- Public Digital Library.

### **OTHER INDICATORS**

54	955	Number of radio sets	N/A
*	*	Number of radio sets per family	* 2347250 family have at least radio sets.(est)
55	965	Number of TV sets	N/A

*	*	Number of TV sets per family	*1001875 family have at least one TV.(est)
56	965m	Total number of multi-channel TV	4,521,000
56.1	965c	Number of terrestrial multi-channel TV subscribers	21,000
56.2	965s	Direct to Home satellite antennas	4,500,000
57	965cp	Homes passed by multi-channel TV	N/A
58	422	Number of Personal Computers	N/A
*	*	Number of Personal Computers per family	* 1059274 family have at least one PC.(est)



INTERNATIONAL TELECOMMUNICATION UNION

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**FOR INFORMATION**

**SOURCE:** Census and Statistics Department, Hong Kong, China

**TITLE:** Progress Report of ICT Statistics Development in Hong Kong, China

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**5<sup>th</sup> World Telecommunication/ICT Indicators Meeting**

*Geneva, 11-13 October 2006*

**Progress Report of ICT Statistics Development in  
Hong Kong, China**

Ms Agnes LO



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## Introduction

People in Hong Kong are generally ICT-savvy. Adoption of new information and communication technology (ICT) has become part and parcel of our daily lives. In Hong Kong, we have developed an excellent ICT infrastructure and have almost 100% mobile phone coverage over the territory. The penetration rate of mobile phone has increased to 127% with a total number of subscribers of over 8.6 million. In 2005, 70% of households in Hong Kong had personal computers (PC) and 65% of all households in Hong Kong had their PCs at home connected to Internet. The PC and Internet penetration rates for large corporations<sup>1</sup> reached 98% and 92% respectively in 2005.

2. The Census and Statistics Department (C&SD) of Hong Kong, China regularly compiles and develops a host of ICT statistics. The following is a brief description of C&SD's current statistical activities in this area.

## IT Usage and Penetration in the Business Sector

3. C&SD has been conducting an *Annual Survey on IT Usage and Penetration in the Business Sector* since 2000 to assess the use and uptake of IT in different sectors. The 6<sup>th</sup> round of the survey was conducted between May and August 2006 covering some 4 700 establishments in different industry sectors and the results will be available in end-2006.

4. Apart from the core data items on PC usage, Internet usage, Website usage, electronic business/electronic commerce and budget for IT, new topics were added in each survey round to gauge the latest trend. For instance, in view of the increasing popularity of wireless and mobile applications, questions on the use of wireless and mobile devices, technology employed, and applications involved have been added since the 2004 survey so as to map out a full picture of the way wireless and mobile solutions are adopted in enhancing business operations. As for the 2005 survey, more information on network usage (e.g. LAN, Intranet, Extranet) as well as PC and Internet usage by employees was collected. For the 2006 survey, questions on IT security have been expanded in order to capture more information on IT security measures adopted by the business enterprises.

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<sup>1</sup> Large corporations are defined as firms with 100+ persons in the manufacturing sector and 50+ persons in other sectors.

## **IT Usage and Penetration in the Household Sector**

5. C&SD also regularly conducts the *Thematic Household Survey on IT Usage and Penetration*. The survey was first launched in 2000. The latest round was conducted in mid-2006 and the results will be released in end-2006. The survey covers the land-based non-institutional population of Hong Kong, representing some 99% of the Hong Kong Resident Population. Some 10 000 households were successfully enumerated in each of the previous rounds of the household survey.

6. The survey collects information on the penetration of PC and Internet among households, and individual household member's PC and Internet usage at different locations, usage of electronic business services, usage of online government services and awareness of information security. Besides, demographic and socio-economic characteristics of the respondents are also collected to allow for an in-depth understanding and analysis of the extent of digital divide in Hong Kong.

7. Same as the business IT survey, C&SD will review the survey questionnaire for each round of household IT survey by taking into consideration the views of relevant government policy advisor, feedback from respondents and other data users as appropriate. This ensures that the information collected can reflect the changing needs of Hong Kong's IT market. For instance, the 2004 survey covered new questions on the type of wireless technology used by mobile devices and views on online Government services, while the 2005 survey included new questions related to pattern of playing electronic games and usage of electronic Government services.

## **ICT Sector Statistics**

8. The coverage of the information technology and telecommunications (IT&T) sector in Hong Kong is drawn up with reference to that of the ICT sector promulgated by the Organisation for Economic Cooperation and Development (OECD) with local adaptations. The Hong Kong Standard Industrial Classification (HSIC) is used to demarcate the IT&T sector, which covers establishments engaged in the manufacturing, distribution, installation and maintenance of IT&T products and provision of IT&T services.

9. Statistics on the operating characteristics of IT&T sector, including number of establishments, number of persons engaged, number of vacancies, business receipts and value added, are compiled from data collected in a series of annual economic surveys. These help reflect the contribution of the IT&T sector to the economy.

## **IT Expenditure**

10. Some data on IT expenditure in the business sector have been collected in a series of annual economic surveys since the reference year 1998. Data items collected include:

- (i) expenditure on purchases of computer hardware (e.g. PCs, mainframes, notebook computers, storage devices and components) and peripherals (e.g. printers, scanners) for own use;
- (ii) expenditure on purchases of computer programs, software and databases for own use, including both standard ones available in the market and those specifically designed/developed by other firms;
- (iii) payments for other IT-related services (e.g. system design and development, computer training, Internet page design, Internet connection, Website hosting, computer equipment leasing, repair and maintenance of computer products); and
- (iv) cost of in-house development of computer programs and databases for own use (the total cost is taken to be the sum of labour costs and non-labour costs incurred).

11. Based on the survey results, a statistical series on IT expenditure in Hong Kong for 1998 – 2004 has been compiled and analysed.

## **IT Manpower**

12. A competent IT workforce is vital to Hong Kong's future prosperity as a premier digital city in a globally connected world. The *Manpower Survey of the IT Sector* continues to be conducted by C&SD on behalf of the Vocational Training Council on a bi-annual basis to collect data on the manpower demand and training situation of IT staff in various economic sectors and government

bodies. The 2006 survey was conducted in March 2006 and the results will be released in end-2006.

13. The survey covered 9 broad categories of IT job, viz. IT management, IT/software development, telecommunications and networking, IT security, database, systems programming, field support, operation services and IT education and training. The IT manpower survey collects information on the number of IT employees by occupation; preferred academic qualification, experience, average remuneration package; recruitment difficulties; rating of character and competence of new recruits; and IT outsourcing.

## **Electronic Commerce**

14. Hong Kong basically adopts the broad definition of e-commerce promulgated by the OECD<sup>2</sup>. Data on e-commerce are mainly collected via the above-mentioned survey on IT usage and penetration in the business sector. However, instead of defining e-commerce in the survey, data on the following activities are collected:

- (i) Order or purchase of goods, services or information via electronic means<sup>3</sup>,
- (ii) Receipt of goods, services or information via electronic means<sup>4</sup>,
- (iii) Sales of goods, services or information via electronic means<sup>5</sup>, and
- (iv) Delivery of goods, services or information via electronic means<sup>6</sup>.

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<sup>2</sup> The OECD has promulgated both narrow and broad definitions of e-commerce based on a transactional approach. The broad definition covers all electronic transactions conducted via computer-mediated networks, while the narrow definition covers only those conducted via the Internet. For both definitions, the payment and the ultimate delivery of the goods or services may be conducted on or off-line.

<sup>3</sup> An establishment is regarded to have ordered or purchased goods, services or information through electronic means if the confirmation of order or purchase is done completely via electronic means, regardless of whether the payment and the ultimate delivery of the goods, services or information are conducted via electronic means.

<sup>4</sup> Browsing of information on the Internet is regarded as receiving information via electronic means. Goods and services received through electronic means are only restricted to products which could be transmitted via electronic media, such as software packages and songs.

<sup>5</sup> A firm is considered to have sold their goods, services or information via electronic means if they offered and accepted orders or purchases that were placed completely via electronic means. Apart from the sales of goods, services or information through electronic means such as the Internet, telephone, it also includes cases where a firm, in accordance with an agreement with its client, automatically delivers certain product to the client for replenishment of stock when the firm learns, via electronic means, that the stock kept by the client falls to a certain level.

<sup>6</sup> Placing information about a firm or the products sold on the Internet is considered to have delivered their information via electronic means.

## **Telecommunication Indicators**

15. The success of Hong Kong as a regional finance and trading hub depends critically on the availability of a reliable and efficient communication infrastructure. The telecommunication sector in Hong Kong is one of the highly sophisticated, competitive and liberalised markets in the world. Consumers in Hong Kong can enjoy the best telecommunication services in terms of capacity, speed and price.

16. The fixed line and mobile penetration rates in Hong Kong are among the highest in the world. As at January 2006, the telephone density was 92 lines per 100 household or 54% by population, while the mobile penetration has reached 127% in mid-2006. Currently, there are ten licensees offering local Fixed Telecommunications Network Services (FTNS), four 3G licensees providing 3G mobile services, six licensees operating satellite-based external FTNS facilities.

17. Telecommunication statistics could shed light on the infrastructural readiness of ICT development. Statistics on the supply of telecommunications services are compiled regularly by the Office of Telecommunications Authority (OFTA) based on administrative returns from the telecommunications operators.

## **Major Issues and Challenges**

18. ICT is an ever-evolving field and this necessitates a dynamic view in compilation of ICT indicators to reflect the latest changes. Below are some of the major issues and challenges in developing and compiling ICT statistics:

- (a) Questions on PC penetration need to keep in pace with the ever changing technological landscape. For example, the definition of PC has been changed to include not only desktop computer, but also laptop/notebook computer and Personal Data Assistant. While this is a necessary adaptation to changes, this may make the penetration rates over the years not strictly comparable.
- (b) The above also applies to the measurement of Internet penetration. The speed and mode of Internet connection is changing rapidly. Thus, instead of just looking at the overall penetration rate, detailed analysis of Internet penetration by different modes of connection is necessary.

- (c) As an official statistical agency, C&SD has to balance the sometimes conflicting needs of increasing demand from data users for more ICT statistics and escalating concerns of respondent reporting burden.
- (d) The advent of new technologies such as wireless LAN, Broadband Wireless Access (BWA), Next Generation Network (NGN) as well as the mega-trend of fixed-mobile convergence also poses challenges in development of new telecommunication indicators. Apart from the definitional issues, soliciting the cooperation of telecommunication operators to provide the detailed figures has become increasingly difficult.

## **Concluding Remarks**

19. Quality and timely ICT statistics can provide an objective basis for identifying focal areas for promoting ICT use and at the same time serve as a useful reference for developing ICT strategies and policies. C&SD believes that the usefulness of statistics is related to the timeliness with which the statistics are made available to users. As such, statistics of the IT business and household surveys are concurrently released within 6 months after the conclusion of fieldwork.

20. On ICT statistics development, most of the core ICT indicators<sup>7</sup> can be compiled from the existing statistical systems in Hong Kong. Nevertheless, the dynamism of this subject also demands a progressive statistical framework in development and compilation of ICT statistics. On this front, C&SD will continue to keep abreast of the latest development and enhance its ICT statistical framework, with a view to meeting the needs of Hong Kong and contributing to the international statistical community.

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<sup>7</sup> The Core ICT Indicators provides definitions, model questions and methodological notes agreed at 2005 global meeting organised by the *Partnership on Measuring ICT for Development*. ([www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators.pdf](http://www.itu.int/ITU-D/ict/partnership/material/CoreICTIndicators.pdf))



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FOR INFORMATION

SOURCE: Ministry for Information Technologies and Communications, Russian Federation

TITLE: Methods of collection and dissemination of communication statistics in the Russian Federation

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## **Methods of collection and dissemination of communication statistics in the Russian Federation**

The Federal State Statistics Service approves all the forms of federal state statistical supervision over communications.

Regardless of their business legal structure and form of ownership legal entities providing communication services under licenses submit data of the forms.

The forms of federal state statistical supervision contain information about the legal entity as a whole, including its divisions (branches) and telecommunications facilities (points) of the given legal entity regardless of their location.

The forms of the federal state statistical supervision and recommendations on filling these up are forwarded to the organizations in letters from the Mininformsvyaz of Russia and placed on the web-site [www.minsvyaz.ru](http://www.minsvyaz.ru) for public use.

Article 46 of Federal Law No126-FZ “On Communications”, entitled «Obligations of communication operators» and annual letters of the Mininformsvyaz of Russia to legal entities on the procedure of submitting statistical data establish the liability to submit statistical reports.

The data pursuant to the forms of state statistical reporting for communication operators should be submitted in the exact fixed time period.

Article 13.19 of Russian Federation Administrative Violations Code No 195-FZ of December 30, 2001 and Article 3 of Law of the Russian Federation No 2761 of May 13, 1992 establish responsibility for non-submission of the data or violation of the time for their submission as well as for their distortion.

The Mininformsvyaz of Russia uses e-mail to accelerate the process of transmission and processing of the data.

The data contained in the statistical supervision forms are received at electronic addresses of computer centers for further processing, checking and transmitting to the Statistics Section of the Mininformsvyaz of Russia.

The information for the Russian Federation as a whole is summed up and transmitted to the Federal State Statistics Service and the Ministry administration.

Every quarter the main industry indicators are placed on the Mininformsvyaz web site in the “Industry Statistics” section.





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**FOR INFORMATION**

**SOURCE:** Ministry for Information Technologies and Communications, Russian Federation

**TITLE:** Statistics

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№ пункт	Наименование показателя в статистических формах Российской Федерации	значение	единицы измерения
	<b>ТЕЛЕФОННАЯ СЕТЬ</b>		
i112	Основные телефонные аппараты	40531.9	тыс. шт.
i117	Общая использованная емкость автоматических телефонных станций (АТС)	46232.8	тыс. №№
i1142	Процент использованной номерной емкости электронных станций в общем объеме номерной емкости АТС	60.9	%
i116	Процент основных квартирных телефонных аппаратов	79.9	%
i1162	Процент основных телефонных аппаратов в городской местности	87.6	%
i1112	Таксофоны - всего	150.8	тыс.шт.
i1163	Число телефонизированных населенных пунктов	66.9	%
	<b>УСЛУГИ МОБИЛЬНОЙ СВЯЗИ</b>		
i271	Абоненты сотовой связи	123.5	млн.АТ
i271por	Проникновение сотовой связи на 100 человек населения	86.5	АТ /на 100 чел.
i133wm	Соединения пользователей сетей подвижной связи	52306.7	млн.мин.
	<b>ИНФОРМАЦИОННАЯ СЕТЬ</b>		
i4213	Число установок пользователей Интернет, находящихся на обслуживании у оператора связи	12.4	млн.шт.
i4212	Число постоянных пользователей Интернет	21.8	млн.шт.
	<b>КАЧЕСТВО ОБСЛУЖИВАНИЯ</b>		
i123	Количество неудовлетворенных заявлений на конец года	2.3	млн.чел.
i143	Количество повреждений на 100 телефонных аппаратов	28.4	повреждения/на 100 ТА
i141	Количество повреждений, устраненных в контрольные сроки	96.4	%
	<b>ТРАФИК</b>		
i1311m	Телефонные соединения местные фиксированной связи) - исходящие	52503.6	млн.мин.
i1312m	Междугородний телефонный трафик - исходящие	21826.0	млн.мин.
i132m	Международный телефонный трафик - исходящий	1170.6	млн.мин.
i1311im	Трафик (соединения) сети Интернет с доступом через ТФОП	54279.4	млн.мин.
i22	Международные исходящие телеграммы	1146.0	тыс.шт.
	<b>ТАРИФЫ</b>		
i151	Тарифы за подключение телефона для населения	5000	руб.

i151b	Тарифы за подключение телефона для организаций	7000	руб.
i152	Ежемесячная абонентская плата для населения	192	руб.
i152b	Ежемесячная абонентская плата для организаций	253	руб.
	<b>ЧИСЛО РАБОТНИКОВ</b>		
i51	Число работников электросвязи	364.6	тыс. чел
	<b>ДОХОДЫ</b>		
i75	Всего дохода от всех услуг электросвязи	617.2	млрд.руб.
i71	- Доход от услуг фиксированной телефонной связи	185.7	млрд.руб.
i711	- доход от представления доступа к местной телефонной сети (подключение)	12.4	млрд.руб.
i712	- доход от абонентской платы за телефон	65.5	млрд.руб.
i7131	- доход от местных соединений при повременной системы оплаты	16.7	млрд.руб.
i7132	- доход от междугородных и внутризонавых соединений	51.6	млрд.руб.
i7133	- доходы от международных соединений	15.9	млрд.руб.
i731	- Доходы от передачи данных	11.3	млрд.руб.
i741	- Доходы от мобильной связи	282.9	млрд.руб.
	<b>КАПИТАЛЬНЫЕ РАСХОДЫ</b>		
i81	Отечественные инвестиции в электросвязь	135.96	млрд.руб.
i83	- инвестиции в фиксированную связь	32.5	млрд.руб.
i841m	- инвестиции в мобильную связь	71.9	млрд.руб.



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**FOR INFORMATION**

**SOURCE:** CRC, Bulgaria

**TITLE:** Annual Report of CRC for 2005

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Annual Report  
of CRC  
for 2005

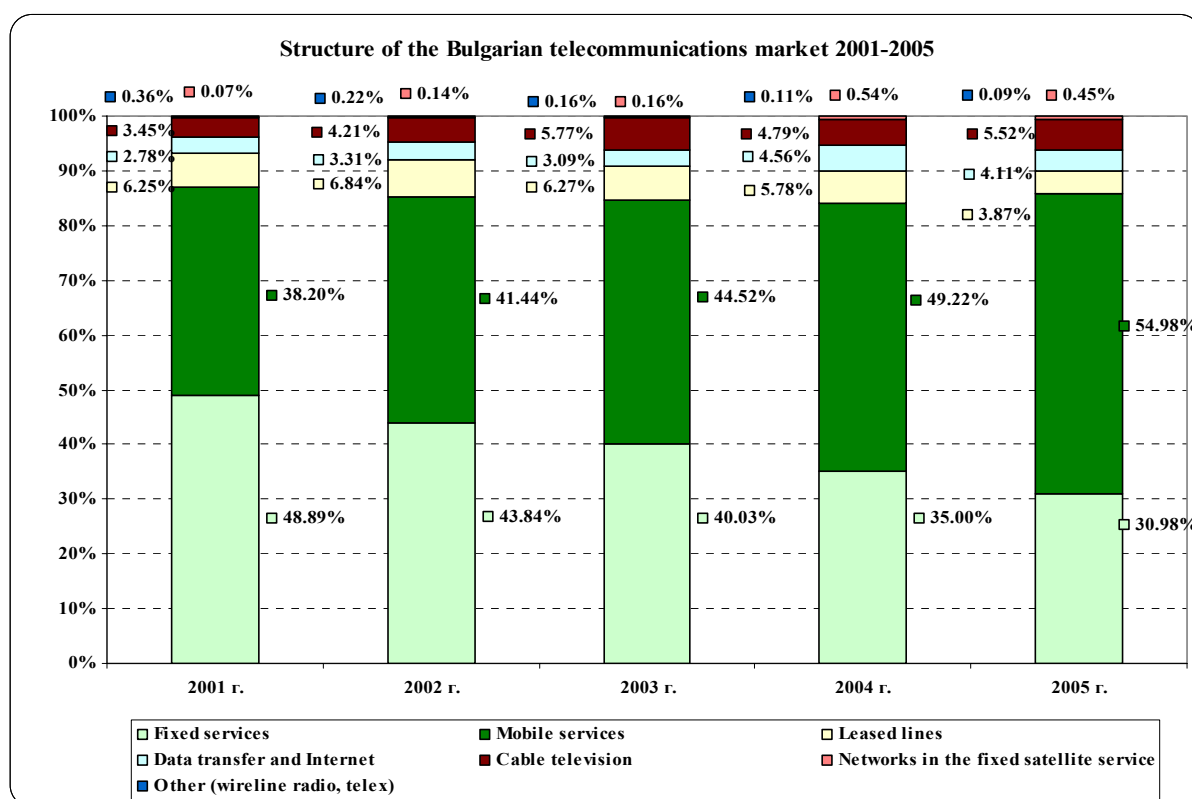
# I. STATE, DEVELOPMENT AND PROSPECTS FOR THE TELECOMMUNICATIONS MARKET

## 1. Characteristics of the telecommunication services market

### 1.1. Volume and structure of the Bulgarian telecommunications market

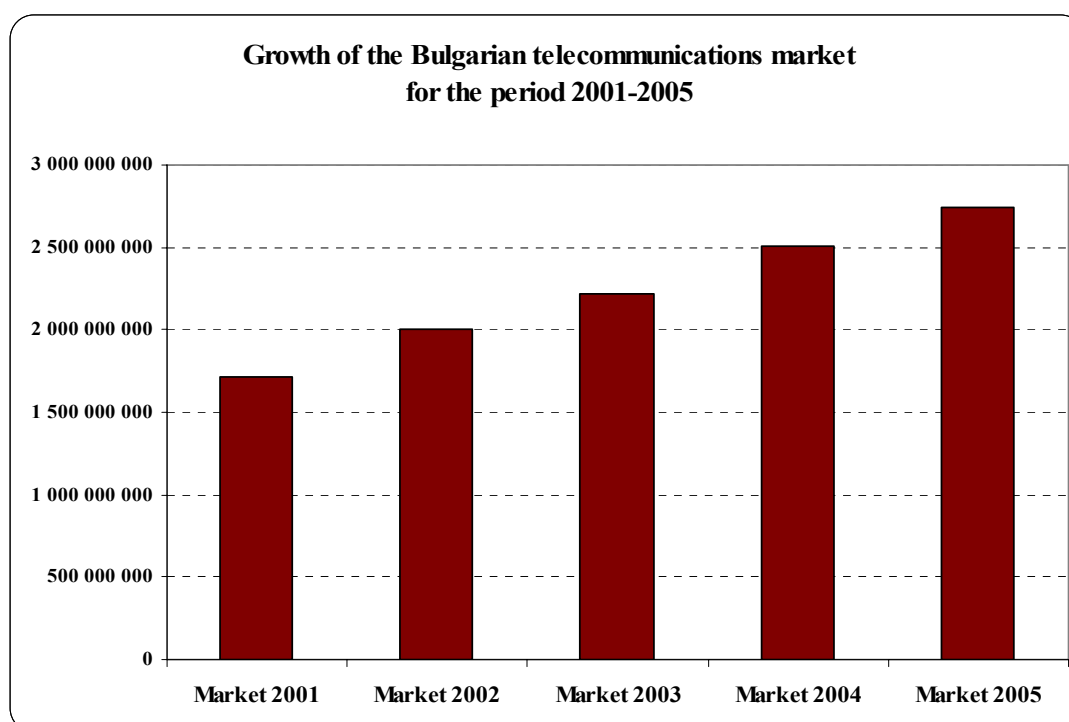
In 2005 the volume of the Bulgarian telecommunications market, estimated on the basis of the revenues realized from fixed services, mobile services, leased lines, data transfer and Internet, cable television, networks in the fixed service and other telecommunication services amounts to 2,744 bn BGN. or 1,403 bn Euro, which constitutes a 10% increase compared to the preceding year. For the sake of comparison, the increase in 2004 with respect to 2003 was 13% and that shows that despite of the continuing growth, the Bulgarian telecommunications market holds its development rate. For a second consecutive year the volume of the telecommunications market constitutes around 7% of the total Gross Domestic Product (GDP) of the country, and that is an indicator that the telecommunications sector preserves its importance for the economy.

Figures 1 and 2 present the structure and growth of the telecommunications market in the country for the period 2001-2005.



*Source: Data submitted to CRC*

**Figure 1**



*Source: Data submitted to CRC*

**Figure 2**

The analysis of the data makes possible tracing and outlining the basic trends in the telecommunications market development in recent years:

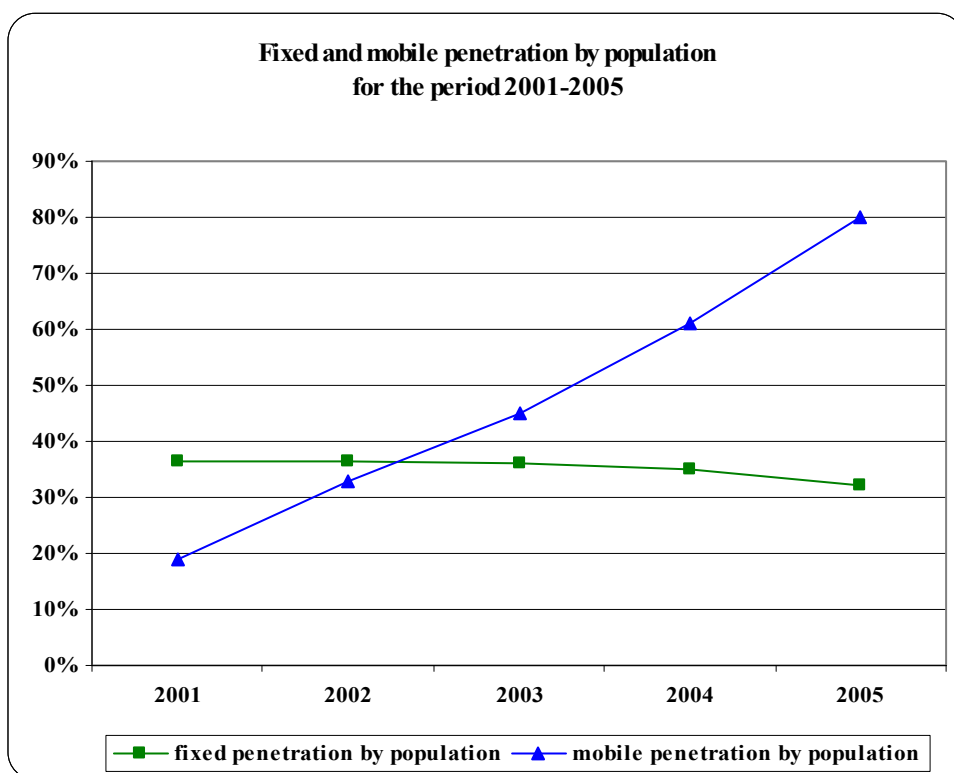
- There are two market segments, which have grown in 2005 compared to 2004: mobile networks and services and cable television. For all the remaining segments there is a hold or a slight reduction in the revenues from services provision.
- In 2005 relative to the preceding year, the share of the revenues from mobile services continues to grow – with nearly 6 points for a one-year period, and the share of the fixed services continues to decline – with 4 points.
- Leased lines feature fluctuations: after revenue growth of 4% in 2004, in 2005 there is a reduction of nearly 27% and reaching the level of 2001.
- Following growth in the segment “data transfer and Internet” for the period 2001-2004, expert estimates by CRC show a hold of the volume for the last year. (Regarding the revenues from “data transmission and provision of Internet access services”, more conservative expert estimate has been applied relative to previous years.)
- In 2005 the revenues from networks in the fixed satellite service and other telecommunication services (wireline radio distribution and telex) decline with equal rates – by 9% relative to 2004.

In 2005 the market of mobile networks and services in Bulgaria continued its rapid development. The revenues from that market segment have increased in absolute value by 22% and constitute more than half (55%) of the revenues from telecommunication services in the country as a whole. The increase in the revenues from mobile services keeps its level for a

second consecutive year. Competition continues to develop mainly between the two operators of digital networks, with retention of the leading position of “MOBILTEL”, expanding presence of the second GSM operator – “COSMO BULGARIA MOBILE” EAD, and nearly subsiding market presence of the first mobile operator in the country – RTC OOD. In November 2005 a new player emerged on the market – „VIVATEL”, which is a prerequisite to expect dynamics and redistribution of the operators’ shares on this market in 2006. The market of pre-paid mobile services and value-added services continues to develop and the Bulgarian users’ interest in services like “mobile Internet” and “multimedia messaging” begins to grow.

Despite of the 11 new licenses awarded to eight new operators during the year and the presence of nine active alternative operators on the market of fixed voice telephone networks and services, the relative share of BTC AD revenues from the provision of those services in 2005 remains too high (97,5%), which is an indicator of inefficient market competition. In 2005 the revenues from fixed telephone networks and provision of fixed voice telephone services decrease by 3% in absolute value and by 4% in relative value in the total market volume in comparison to the preceding year. This reduction results from the nearly 5% reduction in BTC AD revenues that is not compensated by the realized revenues of the alternative operators. The decrease in the revenues from fixed telephone networks and services can be attributed to the depopulation of the small settlements, migration to mobile operators, offering a wider portfolio of services and flexibility of their use, the provision of services by VoIP providers, the introduction of the ever more popular free PC-to-PC real-time transmission of voice over Internet, etc.

Figure 3 illustrates the recent trend of fixed-to-mobile substitution, expressed by the dynamics in the fixed and mobile penetration indicators. The popularity of mobile services among Bulgarian users continues to grow, causing smooth decline in the use of fixed services.



*Source: Data submitted to CRC*



**Figure 3**

In 2005 the Communications Regulation Commission (CRC) awarded two new individual licenses for carrying out telecommunications through telecommunications network for provision of the “leased lines” service to “NOVATEL” EOOD and “SOFIA COMMUNICATIONS” AD. Nonetheless, in 2005 the revenues from provision of the “leased lines” service have fallen by 27% relative to the preceding year. This decrease can be explained by the fact that the telecommunication operators prefer to invest in building up their own telecommunication networks and extending their transmission capacity. In spite of the reported decline of about 10% by the end of 2005, the relative share of the former monopolist in the structure of the market remains over 95%, while the share of the competitive operators has increased by just 2%.

In 2005 52 new operators of public cable telecommunication networks were registered, 104 supplements to existing registrations were issued, and the number of ceased registrations is 49. This demonstrates that this segment of the telecommunications market has been saturated and restructured in favour of the bigger operators. According to an expert estimate of the CRC, the volume of the total revenues from that market segment is around 156 mln BGN, which is 30% more in comparison with 2004. In comparison to the preceding year, the number of operators that have stated revenues from coded programmes has increased by 34%, and those from Internet – by 48%. The service „provision of Internet access over cable networks for distribution of radio and television programmes” becomes increasingly popular in recent years, since it offers good conditions for always-on access at lucrative prices. In 2005 the so-called “triple play” continued its establishment on the Bulgarian market, with price discounts of some cable operators reaching up to 27% in comparison with standard prices.

In the previous years “data transfer” and “Internet access” were examined as separate segments of the telecommunications market in the country. Due to the ever increasing number of newly-registered service providers of Internet access (providing the service under free regime), in 2005 for the purpose of market analysis “data transfer and Internet” is considered as a common segment. It covers the provision of telecommunication services through public telecommunication data transmission networks, including those with individually assigned resource – numbers; through RLAN networks in the mobile service, through networks in the fixed service of the “point-to-point” type, as well as provision of Internet access under free regime by non-registered providers. According to an estimate of CRC, the volume of that segment has remained unchanged compared to the preceding year. Market logic suggests growth in the volumes, realized by networks for data transmission and Internet services, and the conservative estimate for 2005 is due primarily to a correction with respect to the estimates of previous years regarding the revenues of Internet service providers under free regime: it is difficult to assess what part of the market represent the providers that have not responded. In 2005 the trend of previous years of reduction in the number of Internet users of dial-up access continued, and presently, the most common technology for Internet access is cable, followed by LANs.

In 2005 the ADSL service of BTC AD, launched in 2004, gained great popularity. In just a year the number of subscribers to the service increased almost six times. Nevertheless, the demand and supply of broadband services is not widely spread. According to estimates of CRC, at the end of 2005 the penetration of that kind of services in Bulgaria was around 1%.

The investments in building and maintenance of networks and development of services, stated by the telecommunication operators, amount to around 945 mln BGN. The increase is over 60% relative to 2004 and is due primarily to investments made by the three mobile operators during the year, especially the new mobile operator “VIVATEL”, by the alternative operators and by the bigger cable operators.

## **1.2. Prospects for development of the Bulgarian telecommunications market**

The entry of new technologies and the provision of integrated services will result in expansion of the potential of the Bulgarian telecommunication market.

In 2005 tenders were organized and four licenses were awarded for networks of the type “point-to-multipoint”. The winners “CABLENET” EOOD and “TRANS TELECOM” OOD were awarded Class A licenses (2×21 MHz), and the winners “NEXCOM BULGARIA” EOOD and “MOBILTEL” AD were awarded Class B licenses (2×10,5 MHz). The licenses are for a term of 10 years, and according to the license conditions, the operators are obliged to launch the service within a year since the issuance of the license, what gives grounds to expect a stir in the telecommunications market in Bulgaria in 2006. If based on the advanced broadband technology WiMAX, broadband networks of the PTMP type will allow fast transmission of large volumes of data and will be used for the provision of telecommunication services, such as voice transmission, high-speed Internet, multimedia applications, digital television, etc.

In 2006 intensive dynamics on the market of mobile communication may be expected. These expectations are based on the launch of the third digital operator at the end of 2005 and on the start-up of commercial activity of a TETRA operator. Following the issuance of three licenses for UMTS networks and services, in the next 1-2 years the Bulgarian user could benefit from 3G mobile services.

In 2006 the market of fixed telephone networks and provision of fixed voice telephone services is also expected to become more competitive. The new players are expected to develop their infrastructure and pose real competition in terms of the provision of fixed voice telephone services.

Strengthening of the positions of the big cable operators with deployed infrastructures and increased capacities, providing high-quality services and packages of integrated services, including television, high-speed Internet and voice telephony, is also expected. Following the European and global trends of convergence of networks and services, the bundled service „triple play” continues its extension on the Bulgarian market. The combined service is offered by “CABLETEL” AD and “EVROTUR SAT TV” AD. The mobile operators with licenses for the relevant telecommunication activities are expected to offer integrated packages of fixed voice telephone service, mobile voice telephone service and data transmission on the telecommunications market.

## **II. LEGAL AND REGULATORY FRAMEWORK**

In 2005 CRC continued the drafting of a legal and regulatory framework in compliance with the new tendencies in the development of telecommunications and harmonized with the European legislation in relation to the commitments undertaken by the Republic of Bulgaria to the European Union.

The amendments and supplements to the Telecommunications Act (TA) focus on several main issues:

- the obligation of the Republic of Bulgaria to transpose the requirements of Directive 97/33/EC in order to provide for the possibility for CRC to resolve disputes between telecommunications operators;
- public consultation procedure for all general administrative acts, adopted by CRC;

- possibility for change of the system for determination of the expenses of the significant market power operators.

### ***1. Further elaboration of the secondary legislation acts specified in the TA***

In 2005 amendments and/or supplements were adopted to some of the secondary legislation acts specified in the TA (regarding the fees collected by CRC, the operation of the telecommunications networks from the fixed radio service, the rules governing the construction of cable telecommunications networks and associated facilities, etc.). This made possible the finalization of the applicable legal telecommunications framework which provides the possibility for real creation and development of a liberalized market.

***2. In 2005 CRC adopted general administrative acts, related to*** the policy on the use of numbers, addresses and names, the management of the radio frequency spectrum, the terms and procedure for provision of special access to the fixed telephone network of an SMP operator, the calculation of the net losses of the public operators resulting from the provision of the universal telecommunications service and the provision of telecommunications through radio stations and radiolocation stations on board of ships and radio stations on board of aircraft.

***3. CRC issued three individual licences*** for provision of telecommunications through public mobile cellular networks - UMTS standard and four individual licences for provision of telecommunications through public networks from the fixed radio service of the type “point-to-multipoint”.

***4. Liberalisation of the telecommunications market of fixed public telephone networks and fixed voice telephone services*** and creation of possibilities for new alternative operators to enter the market.

CRC designated an SMP operator on the market for fixed public telephone networks and fixed voice telephone services, as well as on the market for the provision of the “leased lines” service, as well as an SMP operator on the market of mobile telecommunications networks and provision of voice telephone services through them.

### ***5. Draft Act on Electronic Communications***

In 2005 CRC started working on the transposition of 2002 Regulatory Framework, in particular the elaboration of the Draft Act on Electronic Communications.

The main characteristics of the Draft Act transposing the Regulatory Framework on Electronic Communications relate to the powers of the National Regulatory Authority, the provision of electronic communications networks and services, the imposition of obligations on the SMP operators, the access and interconnection between the networks of the undertakings, protection of the interests of the users, data protection.

## **III. RADIO SPECTRUM MANAGEMENT**

In accordance with its legal competence and the Regulatory policy of management of the radio spectrum allocated for civil needs, adopted with Decision No. 1000 of 13 June 2005,

the CRC ensures conditions for optimal allocation and efficient use of the radio spectrum, avoiding harmful interference. That is also accomplished in accordance with the requirements of the decisions and recommendations of the International Telecommunication Union, the European Commission and the Electronic Communications Committee to the European Conference of Posts and Telecommunications, respecting the principles of transparency, non-discrimination, predictability, proportionality, objectivity and publicity.

#### ***Planning, assignment and efficient use of the radio spectrum***

- Radio spectrum of 2x20 MHz in the bands 1920-1940 MHz and 2110-2130 MHz, and radio spectrum of 3x5 MHz in the band 2010-2025 MHz is assigned for carrying out telecommunications through public telecommunication mobile cellular UMTS networks.
- In addition to the band 2400-2483.5 MHz, the bands 5150-5350 MHz and 5470-5725 MHz are assigned for carrying out telecommunications through public RLANs of the mobile service.
- Frequency resource of 2x63 MHz in the band 3.4-3.6 GHz is reallocated, re-planned and assigned for carrying out telecommunications through public telecommunication networks of the fixed service of the type “point-to-multipoint”.
- Between the two sessions of the Regional Radiocommunication Conference (RRC-04/06), CRC took an active part in the preparation and preliminary coordination of the frequency plan for the introduction of terrestrial digital audio and television broadcasting in Band III (174-230 MHz), Band IV (470-606 MHz) and Band V (606-862 MHz).

## **IV. LICENSING ACTIVITY**

- In pursuance of the provisions of § 2, para. 5 of the Transitional and Final Provisions of the Radio and Television Act Amendment Act, CRC issued 36 licences for audio broadcasting and 29 licences for television broadcasting with local coverage.
- CRC issued three individual licences with national coverage and a term of 20 years for the provision of mobile telecommunication services by the UMTS standard – Class A (2x10 + 5 MHz) to „MOBILTEL” EAD and Class B (2x5 + 5 MHz) to „COSMO BULGARIA MOBILE” EAD and „BTC MOBILE” EOOD.
- CRC issued four individual licences with national coverage and a term of 10 years for carrying out telecommunications through public telecommunication networks of the fixed service of the type “point-to-multipoint” – Class A (2x21 MHz) to „TRANS TELECOM” OOD and „CABLENET” EOOD, and Class B (2x10.5 MHz) to „NEXCOM BULGARIA” EAD and „MOBILTEL” EAD.
- CRC issued the first certificates for registration under General licence No. 220 for carrying out telecommunications through public RLANs of the mobile service.

## **V. MARKET REGULATION**

### ***1. Annual report 2004***

In 2005 the annual analysis of the state and development of the Bulgarian telecommunications market for the preceding year and on the market regulation activities was

elaborated. The analysis is part of the annual report of CRC for 2004 and is based on information received for the activities of 1000 operators of public telecommunication networks, providing telecommunication services through them, as well as of around 170 Internet service providers.

## ***2. Market monitoring***

With regard to the current monitoring of the state of the telecommunications market as a whole and of the separate market segments, surveillance according to number of parameters, defined by CRC, is carried out. The scope of parameters covers the information needed for the implementation of the specific market regulation functions stipulated in the Telecommunications Act, as well as for submission of data for the market development to international institutions and organizations of which under international agreements CRC is a member. Information is also collected within market monitoring projects.

According to the licensing conditions every six months CRC gathers and processes data from the operators on the markets of fixed and mobile telecommunication networks (the operators carrying out the rest of the telecommunication activities should report once a year).

## ***3. Designation of operators with significant market power (SMP)***

Following conducted market analyses, CRC by Decisions No 1742 of 12.09.2005 and No 2389 of 21.12.2005, has designated again BTC AD as a SMP operator on the markets of fixed telephone networks and provision of fixed telephone services and provision of the leased lines service. Being a SMP operator, on BTC are imposed specific obligations provided in the Telecommunications Act, for example, obligations for interconnection, provision of special access and of collocation of premises, telecommunication facilities, ducts, towers and others; universal telecommunication service provision.

During the year, the CRC experts have also carried out analysis of the market of mobile telephone networks and provision of voice telephone services through them. On the basis of the received results, CRC, by Decision No 2393 of 21.12.2005, has designated again MOBILTEL EAD as an operator with significant market power on that market and has imposed on the entity the specific obligations, stipulated in the Telecommunications Act, with regard to interconnection: following the principles of non-discrimination, transparency and confidentiality, when providing interconnection services.

## ***4. Price regulation***

CRC experts have conducted analysis and have elaborated report on the BTC AD proposal for changes in the prices for provision of fixed voice telephone service. The price changes have been adopted by Decision of CRC No 291 of 22.02.2005.

Analyses concerning the approval of prices for collocation of premises and telecommunication facilities, as well as for interconnection were made during the year. The procedure of approval of the general conditions for collocation of premises and telecommunication facilities goes on during 2006.

With regard to the approved by CRC Costing system of BTC AD, in 2005 the operator commissioned auditing of the System to McKinsey&Company. As a result of the audit, there were no changes in the principles and methodology of cost distribution.

## ***5. Universal telecommunication service provision***

During the year, a fund for guaranteeing the provision of the universal telecommunication service was administrated and by Decision of CRC No 648 of 20.04.2005 Rules on its activity were adopted.

By Decision No 906 of 26.05.2005 CRC approved Rules for assessment of the net losses of the public operators from provision of the universal telecommunication service.

## ***6. Cooperation with the Competition Protection Commission (CPC)***

In 2005 CRC has signed an agreement for cooperation with the Competition Protection Commission (CPC) which is realized through bilateral exchange of information, documents and consultation, in accordance with the competence of the two authorities, stipulated by law. During two joint workshops in September and December experts of CRC have prepared and delivered presentations on certain topics concerning the specialities in elaboration of market analyses for the purposes of designation of operators with significant market power, according to the old and new EU regulatory framework, the process of data collection for the purposes of market research and analysis, as well as the regulation of prices of the SMP operators.

## ***7. Participation in international projects***

Being a regulatory authority, CRC keeps on submitting information for the state of the Bulgarian telecommunications market through a questionnaire of the International Telecommunications Union (ITU). The information is needed for the update of World Telecommunication Indicators Database and for the elaboration of the ITU annual report.

CRC follows the events in the sector, including those at European Commission level. The experts of the commission keep active participation in the plenary meetings, working groups and committees of international institutions and organizations, such as the International Telecommunications Union (ITU), Communications Committee of EU (COCOM), the Independent Regulators Group (IRG), the European Regulators Group (ERG) and other bodies involved in elaboration of mechanisms for effective market regulation.

In November 2005 the contract for institutional partnership between the CRC and the Spanish State Secretariat for Telecommunications and for the Information Society under the Ministry for Industry, Tourism and Trade in cooperation with the Telecommunications Market Commission of Spain<sup>1</sup> came to a successful end. The aim of the contract was to increase the CRC capacity for implementation of its regulatory and control functions in a liberalized market, including in the sphere of market regulation.

CRC has started participation in a project for monitoring of the telecommunications markets in South Eastern Europe “SEE Observatory”. The project is financed by the European Commission and is a continuation of the project for monitoring of the telecommunications sector development in the EU candidate and accession countries, which has come to an end when the greater part of the countries entered the EU in May 2004. Within the project, according to a broad scope of parameters, Bulgaria will keep on submitting data about the regulation practices, telecommunication services tariffs and market development.

# **VI. INTERCONNECTION AND ACCESS**

The significant number of Other Licensed Operators (OLO) in the period 2003 – 2005 and the Reference Interconnect Offer (RIO), approved in 2004, served as main factors for signing of agreement for interconnection between the alternative operators and BTC PLC in 2005. As a result, almost all OLO signed agreements with BTC PLC, in addition to this, began their actual

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<sup>1</sup> contract BG2002/IB/TE01/UE “Institutional building of CRC”

implementation, thus providing communication between the users of the individual networks and an opportunity for the end users of the historical operator to use the service „carrier selection (call-by-call selection)”.

The mobile operators, signing agreements with alternative operators, observe the principle of equality.

An agreement for interconnection was signed also between two of the alternative operators: („ORBITEL” AD and „SPECTAR NET” AD), using protocol H.323 for interconnecting.

The amendment of the Telecommunications Act (prom., SG, No. 77/27.09.05) stipulated procedure for settling of disputes, related to interconnection.

Notwithstanding the liberalization of the market, the policy for encouragement of the competition and the approved in late 2004 Reference Unbundling Offer (RUO), three agreements for unbundled access were signed in 2005.

## **VII. NUMBERS AND ADDRESSES**

In 2005 was approved and published the regulatory policy for the use of numbers and addresses for the purposes of telecommunications, which takes into account the current state and outlines the trends regarding the use of this resource in short-term (2004-2005) and middle-term (2006-2007) period of development of the telecom market.

Also, the new National Numbering Plan (NNP) was approved and published. It envisages the European harmonized codes, introduced were non-geographic codes for services for all telecom networks, code for access to services with added value. The development of the networks of the new operators and the licensing of the third GSM operator caused growth in the amount of the numbers, assigned in 2005 – to 10 623 000 in total. Resulting from the digitalization of the fixed telephone circuit of BTC PLC, in 2005 resource, amounting to total 1 789 000 numbers, was released in various regions of the country.

“Technical analysis of implementing number portability and specification of the applicable standards” was drawn up by CRC and published on the Internet site of the Commission. It served as foundation for the elaboration of “Functional specifications for implementing number portability of subscribers of public mobile telecommunication networks”.

## **VIII. STANDARDIZATION AND TERMINAL EQUIPMENT**

In its capacity of National Standardization National Standardization organization (NSO) for the European Telecommunications Standards Institute, CRC conducted public enquiry on project of ETSI documents with statute of „European Standards” and participated in the member voting.

In 2005 were published Ordinance on the ways and procedures of affixing a sign for specific marking for identification of the radio equipment, in compliance with Art. 208, para. 3 of the Telecommunications Act and List of radio equipment whose putting into service is restricted, in accordance with Art. 209, Para. 2 of the Telecommunications Act.

## IX. ELECTRONIC DOCUMENT AND ELECTRONIC SIGNATURE

Based on submitted to CRC applications for registration of Certification Service Providers (CSP), procedures for registration of "INFONOTARY" EAD and „SPECTAR” AD was launched, and before the end of the year the registration of "INFONOTARY" EAD was completed.

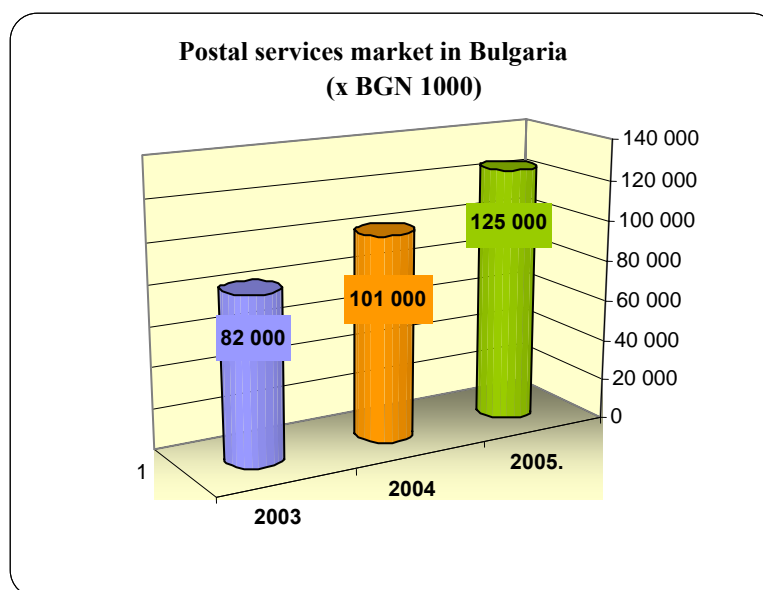
In accordance with the requirements of the Electronic Document and Electronic Signature Act (EDESA), during the year were conducted thorough planned checks regarding the reliability and the security of the certification services, offered by “INFORMATION SERVICES” PLC and “BANKSERVICE” PLC. The assessment, conducted based on the acquired data, facts and documents led to conclusion, that the activities of these CSPs as a whole comply with the requirements of EDESA and the normative acts to it.

During the year was established Consultative Council, devoted to the problems of Electronic Signature.

## X. POSTAL SERVICES REGULATION

For CRC, a priority task in the postal service field was the control over the observance of postal security and quality of service conditions – in relation to the already developed Ordinance on postal security and the approved standards concerning quality and efficacy of the universal postal service.

During the year, an analysis was conducted of the trends and condition of UPS and NPS market in 2004, as well as the long-term prospective for its development. The analysis was prepared in the form as an expert assessment based on the submitted data on the activities of the principal postal operator and nearly 94 percent of the registered HPS providers. In 2004, the postal (UPS and NPS) service market was estimated to BGN 101 mln, while in 2005 the market volume increased by 24% and amounted to nearly BGN 125 mln.

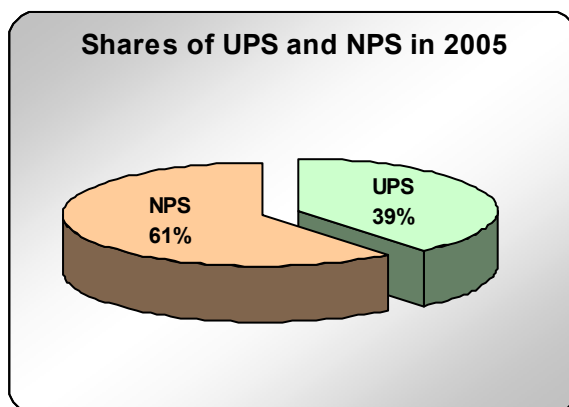


*Source: Data submitted to the CRC*

**Fig. 9**



In the recent three years, a tendency of consistent annual growth of about 23% established on the postal service market. The growth is due to the constant increase of revenues gained from the provision of NPS. Since 2003, the NPS revenue growth outstrips UPS. For comparison: in 2003 and 2004 the licensed operator and the registered operators accounted for almost equal shares of the total market, with a slight advantage for NPS. For the past year 2005, the ratio between NPS and UPS in the total volume is already 1,5 to 1.



*Source: Data submitted to the CRC*

**Fig. 12**

## **XI. COMMUNICATIONS CONTROL**

Among the main CRC priorities has been strengthening the control activity as tool for regulation of operators' equality, efficient fulfilment of the security and quality requirements for the services provided as well as observance the provisions of Telecommunications Act (TA), Postal Services Act (PSA) and Electronic Document and Electronic Signature Act (EDESA).

The control tasks are carried out at the units in Sofia and the 5 regional stations (RSKS) in the cities of Plovdiv, Burgas, Varna, Veliko Tarnovo and Vratsa. The control activity is performed in the following directions:

- Monitoring and Control of the Radio Frequency Spectrum;
- Communications inspection;
- Logistic of the control activity.

### ***1. Radio Frequency Spectrum Monitoring and Control***

1.1 In 2005 The Radio Frequency Spectrum Monitoring activities have been directed mainly to fulfilment of the more important tasks as listed below:

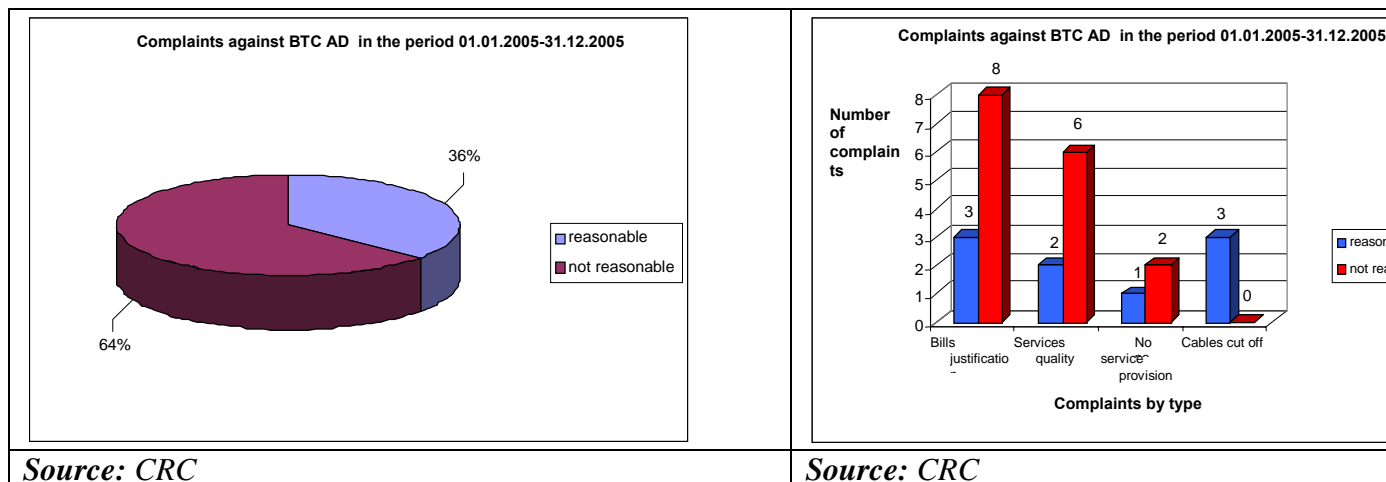
- Measurements and estimation of cross-boarder interferences in the boarder areas;
- Inspections of the Radio Frequency Spectrum occupancy for the country territory related to frequency planning for licensing telecommunications operators of terrestrial UHF FM and TV radio broadcasting, PMR networks and UMTS.
- Implementation of twenty-four-hours-a-day Radio Frequency Spectrum monitoring for the territory of Sofia.

1.2 The Radio Frequency Spectrum control activities in 2005 have been directed on provision of telecommunication services quality (radio, TV, mobile telephony), Electromagnetic Compatibility (EMC) study and analysis, provision of the established radio transmitter stations compliance with the approved technical projects, Radio Frequency Spectrum control based on citizens/bodies signals and complaints.

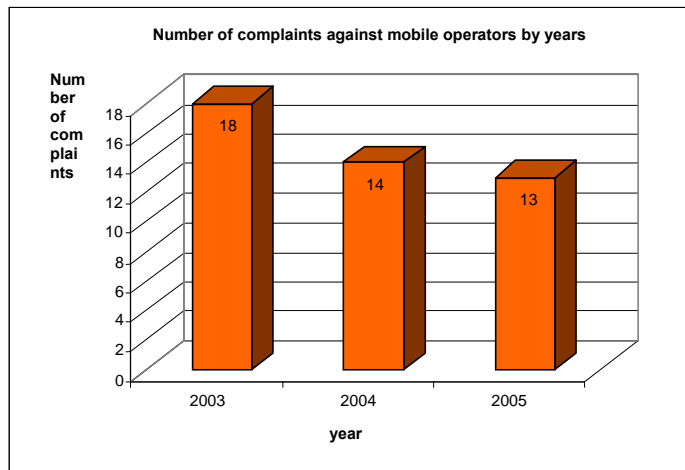
## 2. Inspection activity

### 2.1 Communications inspections regarding the telecommunications performance by the order of TA.

- 283 inspections have been fulfilled regarding operators carrying out terrestrial TV- and radio broadcasting as telecommunication activity. 23 statements of establishment of administrative violations have been drawn up.
- 443 inspections have been performed on public cable telecommunication networks for radio- and TV signals transmission as well as service provision through them. In correspondence to the violations established 59 statements have been drawn up. The inspections initiated by a 57 end-user filed complaints have been finalized with drawing up of 12 statements of establishment of administrative violations. Following penal decrees in effect issued by the Minister of Culture and in relation to General License N 201 violations 13 statements have been drawn up.
- 367 inspections have been carried out concerning observation the terms of individual licenses for establishment, maintenance and operation of PMR private mobile networks. 73 complaints concerning radio interferences in this telecommunication networks type have been filed and as result 12 statements of TA violations have been drawn up.
- 12 inspections have been fulfilled on operators carrying out telecommunication activity through fixed satellite service networks.
- 55 inspections have been performed regarding public telecommunication networks for data transfer without use of a scarce resource. As result 22 statements of TA violations have been drawn up.
- 84 telecommunication networks from the type “point-to-point” fixed radio service have been inspected. After the TA violations established 7 statements have been drawn up.
- In the period from 01.01.2005 to 31.12.2005 25 complaints have been filed against BTC AD - the operator with significant power on the market of fixed voice service. From the total complaints number 9 are reasonable and 16 are not reasonable.

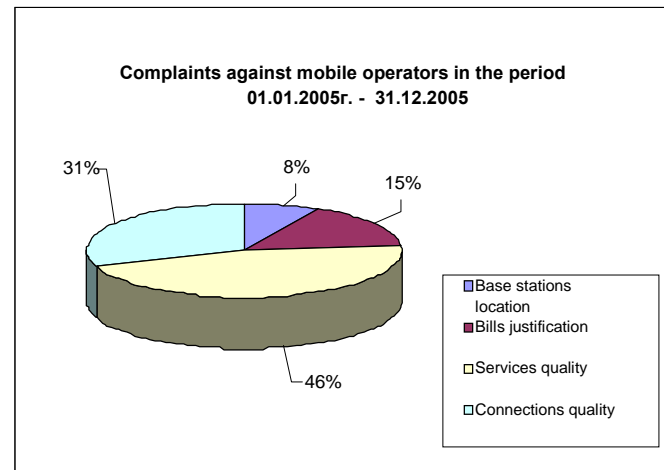


- A total of 33 requests from telecommunication operators have been filed concerning 102 cable routes. The requests are on imposing to BTC the by TA provided obligations for joint use of the historical operator channel network. As result CRC instructed BTC compulsory to provide joint use of 16 cable routes from the town telecommunication network.
- In the period from 01.01.2005 to 31.12.2005 74 inspections have been fulfilled on the individual license terms observation by BTC. As result 5 statements of establishment of administrative violations have been drawn up.
- In 2005 a total number of 13 complaints have been filed to CRC against the mobile operators MOBILTEL AD, COSMO BULGARIA MOBILE AD and BTC MOBILE AD. Three of the total complaints number concern connections quality and bills justification.



Source: CRC

Fig. 11



Source: CRC

Fig. № 12

## 2.2 Communications inspection regarding the postal services provision after the PSA

- Surveillance has been performed on an extract from 600 real home correspondence parcels regarding the quality norms observation. The quality norms have been adopted with Decision № 1546/29.07.04, promulgated in State Gazette. The surveillance result is illustrated in Table 1.

**Table 1**

<b>Time for end-to-end delivery</b>	<b>Norms of service quality</b>	<b><i>Established service level</i></b>
<b><i>D + 1</i></b>	not less than 78 % from the correspondence parcels	81.63 %
D + 2	not less than 90 % from the correspondence parcels	94.93 %
D + 3	not less than 90 % from the correspondence parcels	97.82%

*Source: CRC*

- 41 inspections have been fulfilled regarding the universal postal service provided by the main postal operator “BULGARIAN POSTS” EAD. As result 1 statement of establishment of administrative violation by BP EAD has been drawn up.
- 20 operators of Non-Universal Postal services have been inspected. As result 3 statements of establishment of administrative violation have been drawn up.

### **2.3 Control on observance of the Electronic Document and Electronic Signature Act (EDESA) provisions.**

- In 2005 2 inspections have been carried out concerning the activity of INFORMATION SERVICE AD and BANKSERVICE AD. Insignificant nonconformities to the norms requirements have been established. As result CRC instructed removal of the nonconformities within a fixed term.

### ***3. Logistic of the control activity***

**In 2005 the establishment of the National Monitoring System for Radio Frequency**

**Spectrum Monitoring and Control continued further with the extension of RFS**

**control up to 26 GHz. The extension has been implemented as follows:**

- Establishment of 2 radio monitoring stations: a fixed in Plovdiv and a remote controlled in Vratsa;
- Implementation of remote controlled stations in Varna and Burgas;
- Further equipment of the measurement equipment with the accessories necessary for measurements in the frequency range up to 26 GHz;
- Delivery and installation of geographic information software application.

**As conclusion, by the end of the year 2005 CRC is operating 4 fixed and 3 remote-controlled radio monitoring stations.**

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INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**

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***Review of the Australian Bureau of Statistics ICT  
Sector Definition: A proposed strategy***

**International Telecommunication Union World Telecommunications/ICT  
Indicators (WTI) Meeting, Geneva, 11-13 October 2006.**

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## **PART A: INTRODUCTION**

### **Scope of Paper**

1. The purpose of this paper is to provide information regarding a review of the Information and Communication Technology (ICT) sector definition currently being undertaken by the Australian Bureau of Statistics (ABS). The review has largely been prompted by revisions to the Australian and New Zealand Standard Industrial Classification (ANZSIC), which underpins the ABS ICT sector definition, which in turn defines the scope of the ICT Industries Survey (ICTIS). The paper sets out the current ABS definition and compares it to the broader approach taken by the Organisation for Economic Co-operation and Development (OECD). The proposed ABS ICT sector is presented along with a discussion on underlying methodological, conceptual and practical issues. The ABS is currently considering feedback on the proposals in this paper received from users of ABS ICT statistics and those interested in the subject. This paper is largely adapted from a discussion paper on the subject circulated to users of ABS statistics for presentation at the International Telecommunication Union World Telecommunications ICT Indicators (WTI) meeting, Geneva, 11-13 October 2006. Since the review is not yet complete the ABS would welcome comments from the international community.

2. The paper provides the conceptual framework, and background information, for reviewing the scope of ICT industry, using OECD guiding principles as the starting point. Changes relating to ICT industries in ANZSIC 2006 are discussed and broad implications identified. The methodology for the review is explained, and some difficult and boundary issues relating to coverage and methodology are also discussed. The diagrams included in the paper and the appendices provide relevant details on classifications and concordances.

## **PART B: BACKGROUND TO THE REVIEW**

3. Release of ANZSIC 2006 in February 2006, introduced significant changes to the classification of ICT industries. In this section of the paper, major changes to ICT industries in ANZSIC 2006 are discussed, and broad implications are identified. These changes present opportunities for enhancing the relevance of the ICT sector definition.

4. This review also coincides with revisions to the following major international industry and product classifications:

- International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4
- Central Product Classification (CPC), Ver.2
- Harmonised System (HS) 2007

5. The United Nations Statistical Commission has approved the revised classification structures for ISIC and CPC, while the HS 2007 has been finalised and will be implemented by ABS from 1 January 2007. The most recent OECD definition of the ICT sector is based on ISIC Rev. 4, while the most recent OECD definition for ICT products is based on CPC 2.0. The proposals in this paper regarding the Australian ICT sector take into account the changes to these international classifications as well as the OECD position.

## **ANZSIC 2006 release: broad implications for the ICT sector definition**

### **Background**

6. The ANZSIC has been developed for use in compilation and analysis of industry statistics in Australia and New Zealand.
7. The ABS and Statistics New Zealand have jointly developed this classification to improve the comparability between the two countries and with the rest of the world.
8. The 2006 edition of the ANZSIC has replaced the 1993 edition, which was the first edition produced jointly with NZ, and reflects a substantial review of the classification, the purpose of which was to ensure that it remained current and relevant, reflecting the changes that have occurred in the structure and composition of industries and changing user requirements.

### **Major changes at broad level**

9. The ANZSIC is a hierarchical classification with four levels, namely Divisions (the broadest level), Subdivisions, Groups and Classes (the finest level). At the Division level, the main purpose is to provide a limited number of categories which provide a broad overall picture of the economy and are suitable for the publication of summary tables in official statistics. The Subdivision, Group and Class levels provide increasingly detailed dissections of these categories for the compilation of more specific and detailed statistics.
10. ANZSIC 2006 separately identifies 19 Divisions, compared with 17 in ANZSIC 1993. At the Subdivision level, ANZSIC 2006 identifies 86, compared with 53 in ANZSIC 1993. The substantial increase in the number of subdivisions was driven by improvements made to the international comparability of the classification at this level, and the identification of economic activities with significant differences in their production functions (a term used to describe the transformation of intermediate inputs, through the application of labour and capital, to produce outputs) at higher levels of the classification. Considerable change has also occurred at the lower levels of the classification, facilitating introduction of industry classes such as Computer and peripherals retailing.
11. ICT related classifications have undergone major changes in ANZSIC 2006, especially for the service industries. These changes are discussed in the following sections of this paper, and details are provided in the appendices to this paper. Identified as a rapidly growing sector in the Australian and New Zealand economies since the last review, a new Information Media and Telecommunications Division has been created. Also, the very large Property and Business Services has been rearranged into three new divisions in ANZSIC 2006, one of which (Professional, Scientific and Technical Services) includes the new subdivision Computer System Design and Related Services.
12. Several old classes, such as Telecommunication Services, have been split into finer levels (Wired Telecommunication Network Operation, other Telecommunication Network Operation and three more classes).
13. At the detailed level, in line with technological development, and changes in structure and composition of industrial and business activities in Australia and New Zealand, ANZSIC 2006 incorporates a range of new or updated ICT related activities within relevant industry classes. These changes ensure that the classification remains current and relevant

14. International comparability of ANZSIC 2006 has also been enhanced by aligning it as far as possible with the upcoming ISIC Revision 4 and other national classifications such as the North American Industry Classification System (NAICS) 2002 at the subdivision level. In the ANZSIC review, close consideration was given to the work undertaken in recent years on the ISIC and NAICS. Australia and New Zealand have been involved in international meetings reviewing the bases of these classifications. To the extent considered appropriate to Australian and New Zealand conditions, ANZSIC 2006 therefore reflects the latest international work on industrial classifications.

#### **Specific changes for ICT industries**

15. The changes noted above, as they affect ICT activities, can be seen in the detailed concordances for ICT related industry classes provided in **APPENDICES B and C** respectively. **APPENDIX D** provides primary activities and exclusions for industries which potentially have ICT activities.

16. In terms of numbers, based on work done so far, the number of classes in ANZSIC 06 which potentially include ICT activities far exceed the 13 ANZSIC 1993 classes currently included in the ICT industries survey.

#### **Opportunities for ICT statistics**

17. Establishing a current and relevant list of ICT goods and services, and ICT industries has always been difficult. In addition to the rapidly changing characteristics of ICT goods and services, the dated nature of current product and industry classifications has been a significant hindrance. With new ICT products and services being continually developed in line with technological innovations at a rapid pace, this has been a constant challenge for statisticians and users of ICT data, who require data to be comparable over time, and to be able to link domestic production data with international trade data. The release of reviewed national classifications such as ANZSIC 2006, and impending release of international product classifications such as CPC version 2.0 and Harmonized System 2007 and industry classification such as ISIC Rev. 4 (with which ANZSIC is aligned as far as possible), has presented opportunities for improving the relevance of ICT statistics.

### **PART C: BACKGROUND TO, AND GUIDING PRINCIPLES FOR ICT SECTOR DEFINITIONS**

18. Over the years, the OECD's Working Party on Indicators for the Information Society (WPIIS) has made significant contributions to the field of ICT statistics through development of agreed definitions, standards and classifications. In this section of the paper, the background to, and guiding principles for, development of definitions, standards and classifications relating to the ICT sector by WPIIS are discussed. The ABS adaptations of these guiding principles are also described in this section.

## Background of ICT sector definition

### OECD definition of the ICT sector

19. In 1997, in response to a growing demand for data relating to ICT, OECD member countries convened an ad-hoc statistical group to start to develop indicators for the Information Society. In 1999, this group became the Working Party on Indicators for the Information Society (WPIIS). WPIIS has made significant contributions to the field of ICT statistics through development of agreed definitions, standards and classifications.

20. In 1998, OECD recognised that the ICT sector ought to be defined as an industrial sector, comprising manufacturing and service industries that capture, transmit and display data and information electronically. The definition was based on ISIC Rev 3.

21. OECD member countries recognised in 1998 that the preferred way of identifying an ICT sector would have been to firstly define ICT goods and services, and then to formulate the ISIC classes that had activities involving these goods and services. However, in order to expedite the work, the approach taken was to first define the activities (industries), and subsequently work on a list of ICT goods and services that could complement and help to refine the activity-based definition.

22. Principles underlying the choice of the activities included in the ICT sector definition were agreed upon as follows:

For manufacturing industries, the products of a candidate industry

- **must be intended to fulfil the function of information processing and communication including transmission and display, OR**
- **must use electronic processing to detect, measure and/or record physical phenomena or to control a physical process.**

For services industries, the products of a candidate industry

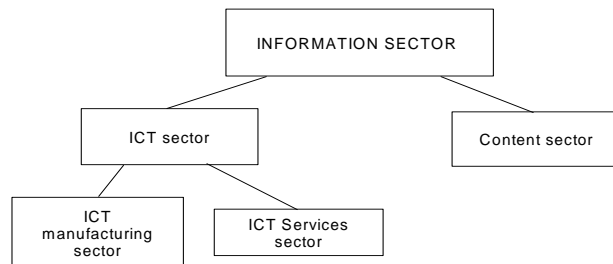
- **must be intended to enable the function of information processing and communication by electronic means.**

23. The initial 1998 ICT sector definition was revised in 2002 in line with the revised ISIC 3.1, which separated ISIC Rev 3 class 5150 (wholesale of machinery, equipment and supplies into several new classes including 5151 (Wholesale of computers, computer peripheral and software) and 5152 (Wholesale of electronic and telecommunications parts and equipment).

24. The 2002 definition is the current OECD ICT sector definition and this includes a wider range of products (goods and services) produced and, consequently, industries involved in ICT activity. The OECD ICT sector definition will hereafter be referred to as the **broad definition** in this paper.

25. The ICT sector can also be viewed in terms of a wider Information sector, which can be defined as the sum of two constituent sectors - the ICT sector and the Content sector. The ICT Sector, in turn, comprises ICT manufacturing and ICT services. Thus in an expanded form, the Information Economy sector is the sum of the ICT manufacturing, the ICT services and the Content sectors. **Diagram 1** below depicts the Information sector.

## DIAGRAM 1: The Information Sector



26. Note: Discussion of details relating to ICT goods and services is outside the scope of this paper. The ABS will consider the above guiding principles (as well as some recent modifications proposed) for identifying ICT goods and services relevant to the Australian context. OECD's proposed new definitions for ICT goods and services will also be considered.

27. The ISIC industries included in the current 2002 version OECD ICT sector definition, and the correspondences with ANZSIC 1993 industries, including reasons for exclusion in ABS ICT Industry surveys, are listed in **Table 1 of Appendix F**.

28. The OECD is currently conducting a review of the ICT sector definition, in line with ISIC Rev 4. The proposed definition reflects finer ICT activities classification in ISIC Rev 4 as well as inclusion of activities which did not exist in ISIC Rev 3.1. **Appendix A** provides the proposed ISIC Rev. 4 based list along with correspondences with ISIC Rev. 3.1 and ANZSIC 2006.

### Current (narrower) ABS definition of the ICT sector

29. The current definition draws on, but is not identical to, the current OECD definition for the ICT sector mentioned above, however, it is fair to say that the ABS definition is narrower than the current OECD definition.

30. The Australian sector draws together a number of standard industries from the ANZSIC with ICT activity. Correspondence of these ANZSIC classes with the international classification, ISIC Rev 3.1, is also indicated in **Table 1 of Appendix F**. This table also identifies the ANZSIC industries which are currently regarded as ICT specialists. Issues relating to definition of ICT specialists and rules for determining the specialisation status will be discussed in paragraphs 47 to 51 of this paper.

31. It is important to distinguish between the current **scope** of the ICT industry survey and the current ABS ICT sector **definition**.

32. Some illustrative charts have been used in this paper to present these distinctions. In the charts, the area within the dotted inner oval represents a notional IT specialisation space. For example, a class wholly within the inner oval represents industries where all primary activities are ICT related, whereas classes which are only partially within the inner oval represents industries where only part of the activities are ICT related.

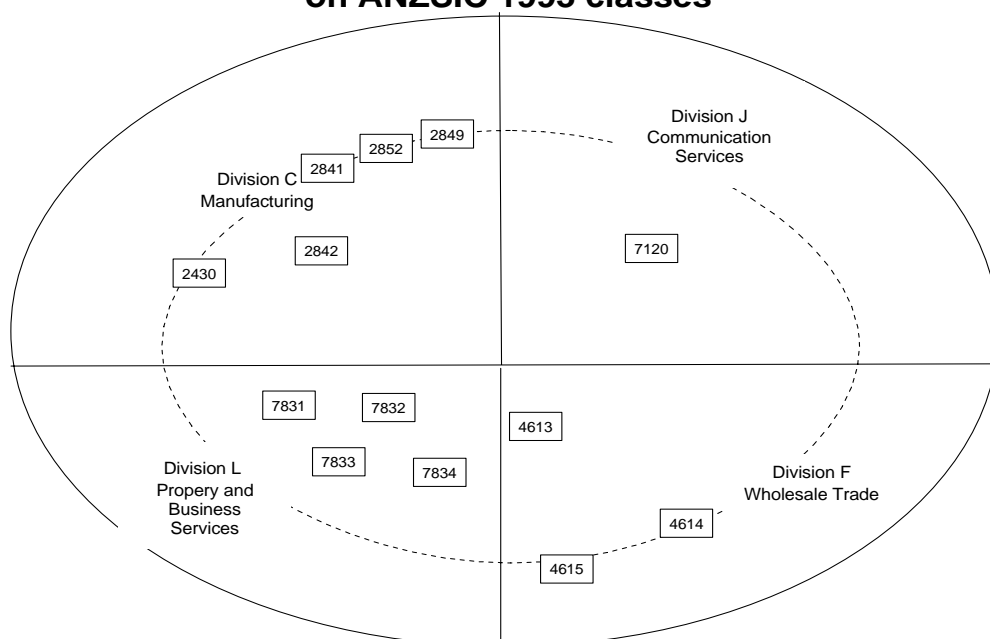
33. **Tables 2 and 3** of the **Appendix F** relate to the following charts 2 and 3, and categorise the ANZSIC classes shown in the charts into three groups

- All activities in scope
- Majority of activities in scope
- Some activities in scope

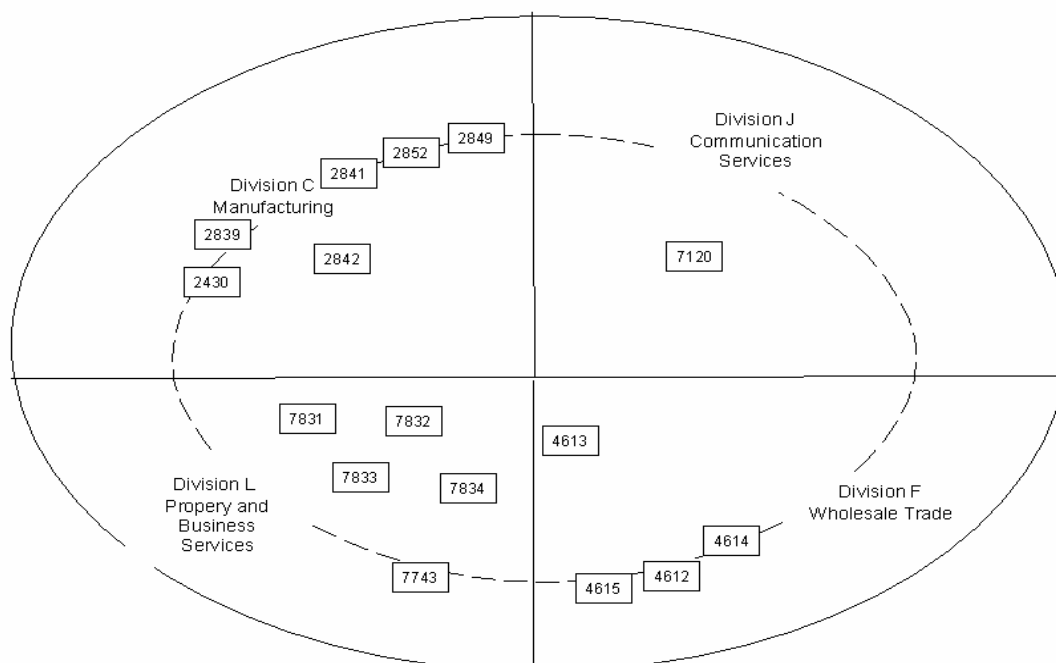
34. Classes with all activities in scope and the majority of activities in scope generally have significant ICT activity, and the titles (such as Class 2841 Computer and Business Machine Manufacturing) are indicative of the activities of units coded to these industries. However, it might not be clear why some classes (such as Antiques and used goods retailing) are included in the charts. **APPENDIX E** provides information regarding ICT activities in such classes.

35. The **current scope** of the ICT industry survey is presented in **Chart 1** while, the current definition of the ICT sector is presented in **Chart 2**. Both the charts are based on ANZSIC 1993 classes. **Chart 1** reflects the scope of the current ICT Industry survey, and does not include all classes that fall within the current ABS definition. For example, class 7743, plant hiring and leasing, although containing computer renting as an activity, which is certainly an ICT related one, was not considered to be in scope of ICTIS, because of the very low ICT specialisation ratio for this class. It should be noted that the scope of ICTIS has remained practically unchanged since the inception of the survey in 1992-93 and covers the “core” ICT activity.

**Chart 1 :Current scope of ICT Industry Survey based on ANZSIC 1993 classes**



**Chart 2 :Current ABS ICT Industry Sector definition based on ANZSIC 1993 classes**



## **PART D: METHODOLOGY ADOPTED FOR ABS REVIEW OF ICT SECTOR DEFINITION**

36. The broad steps followed for conducting the review are outlined below:

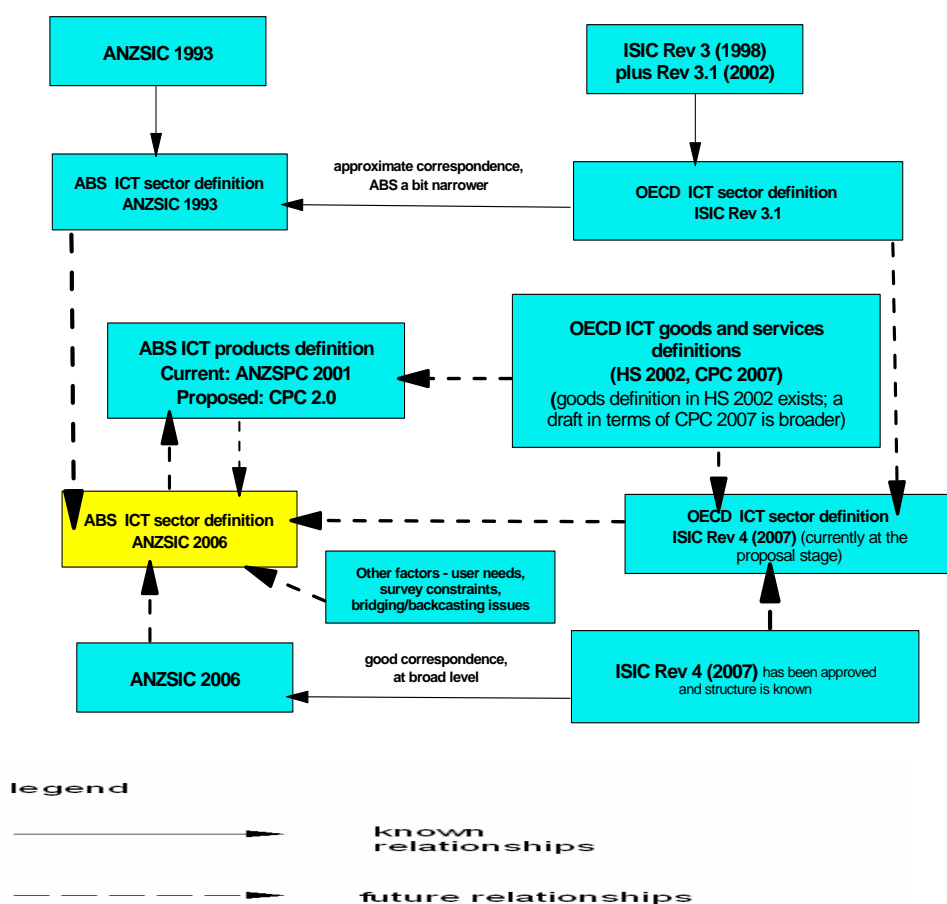
Step 1. The current OECD definition for ICT industries, referred to as the broad definition, was used as a starting point.

Step 2. Using in scope ANZSIC 1993 classes, a list of corresponding ANZSIC 2006 classes that clearly fall within the definition, and those that may fall within it were identified.

Step 3. Some other ICT industries, not in ANZSIC 93 and thus not identifiable through step 2 above, were then identified.

Step 4. In the absence of a revised and internationally agreed classification for the ICT sector yet, the ABS has considered the draft OECD proposal based on International Standard Industrial Classification of All Economic Activities (ISIC), Rev.4

38. The following **diagram 2** depicts the proposed ANZSIC 2006 based ABS ICT sector definition in a historical and international context. A range of national and international classifications, including recent releases, have been considered for arriving at a proposed definition.

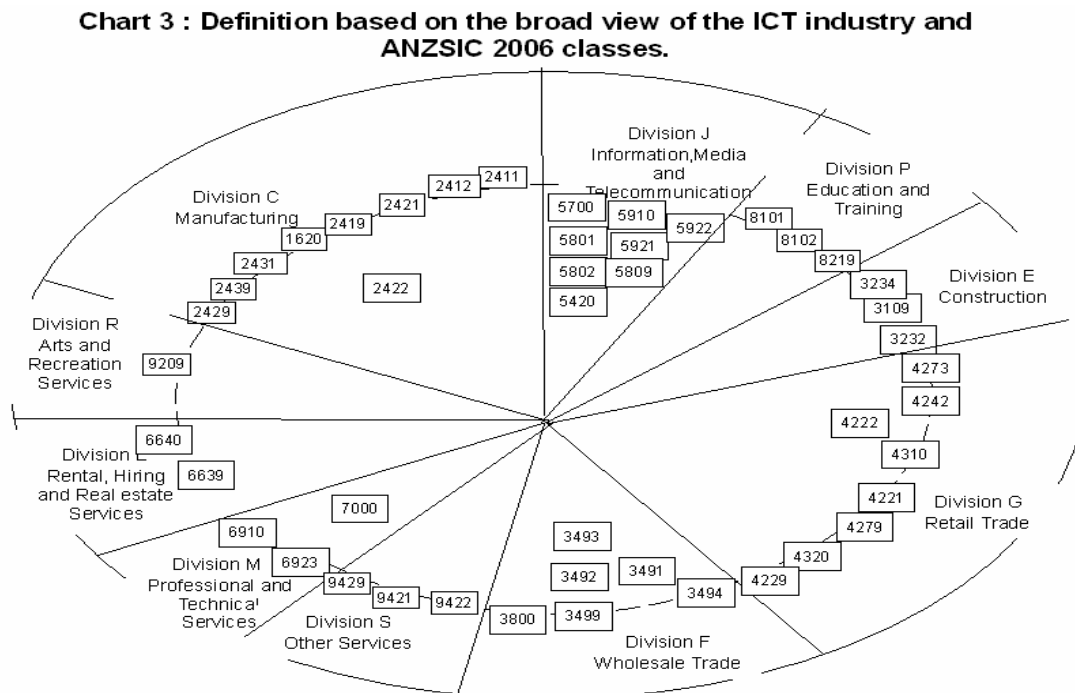


39. This part of the paper sets out the proposed ABS ICT sector definition. The proposal is based on the broader approach taken by the OECD, as explained in paragraph 24.

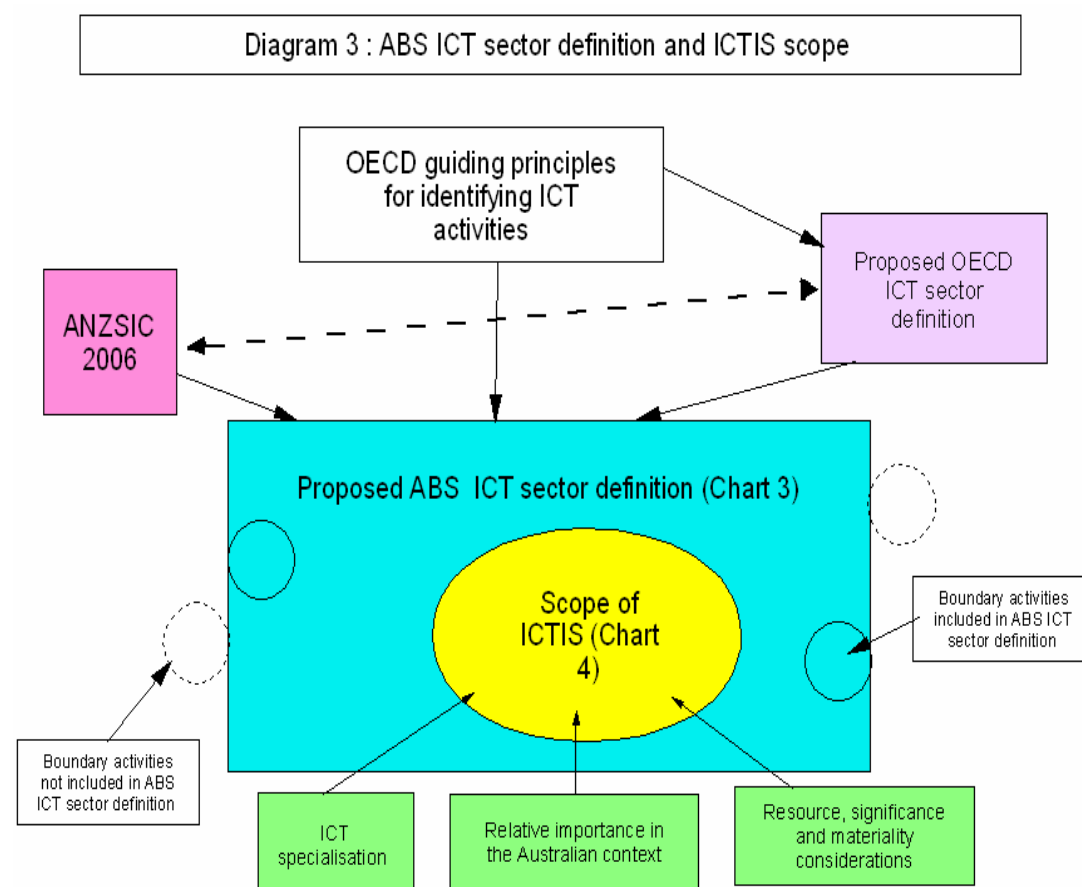


40. The proposed ABS ICT Sector definition identifies all industry classes, based on ANZSIC 2006, which have ICT activities (in line with the broad OECD definition and guiding principles) within their primary activities, irrespective of the degree of specialisation. ANZSIC 2006 classes and Divisions included under the broad definition are depicted in **Chart 3** below.

41. **Chart 3** reveals a significant increase in the number of industry classes within the ICT sector definition, when compared with Chart 2. This is expected, given the growth in size and activity in this sector over the last two decades.

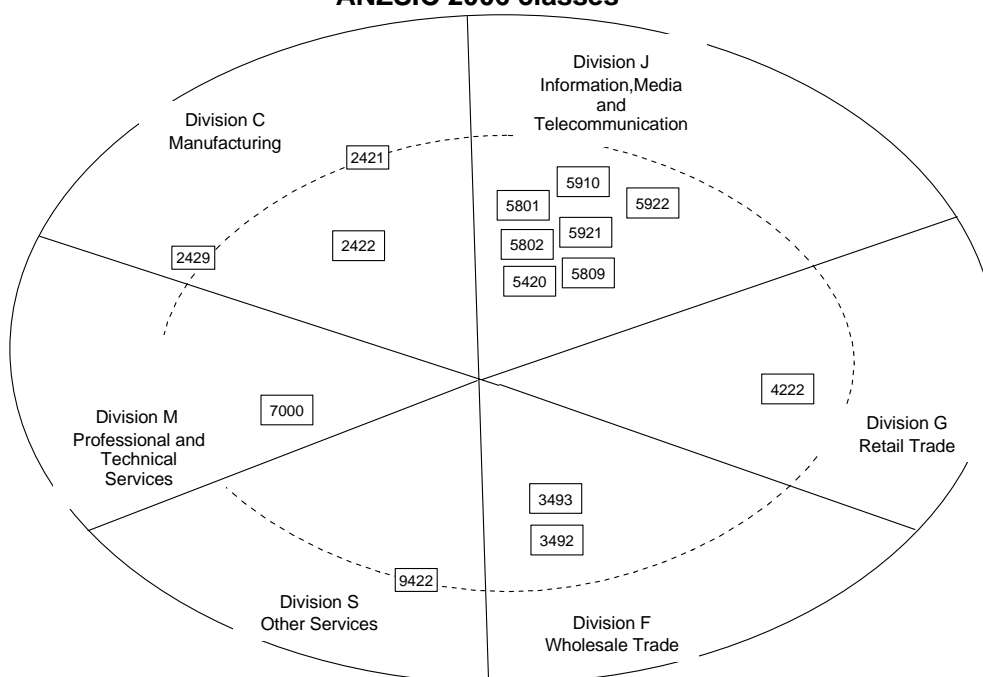


42. The following **Diagram 3** illustrates how the guiding principles for identifying ICT activities, the OECD sector definition and ANZSIC 2006 determine the proposed ABS ICT sector definition depicted in Chart 3. The proposed scope of ICTIS (chart 4) is a subset of the potential set of industries included in the ICT sector definition. As depicted in the diagram, considerations such as degree of ICT specialisation, importance in the Australian context, and significance, materiality and resource considerations have an impact on the proposed scope of ICTIS.



43. Practical considerations are likely to impact on the scope of the 2006 ICTIS survey. Inclusion of all industries included in Chart 3 will result in a much larger sample, which is beyond the capacity of current ABS resources allocated to this survey. Based on available information (such as business counts and assessment of ICT activity) and feedback from users received so far, the industries almost certain to be included in the scope of the 2006-07 ICTIS are presented in **Chart 4**.

**Chart 4 : Proposed scope of ICT Industry Survey (ICTIS) based on ANZSIC 2006 classes**



44. This chart aligns closely with the OECD proposal but a few ANZSIC classes which have correspondence with OECD proposal have not been included. These classes are 2412, 3494, 4221, 6639, 6640 and 9421, which had lower ICT activities in Australia. However, since manufacture of consumer electronics is included in the scope, there is a case for including 4221(retail) and 9421 (repair).

## **PART F: SOME METHODOLOGICAL AND PRACTICAL ISSUES INFLUENCING DECISIONS**

### **Relevance versus cost**

45. A large number of ANZSIC classes which are relevant to ICT have been identified in the potential list of industries. Inclusion of all these industries would enhance the relevance and coverage of the ICT statistics, but for some of these industries only a small part of the activities are ICT related. Therefore, after consideration of practical issues such as costs, sample sizes and marginal benefits, the proposed scope of the ICT Industry Survey is narrower than that determined by the definition, as is currently the case.

46. As indicated above, the ANZSIC 2006 classes 2412, 3494, 4221, 6639, 6640 and 9421, which correspond with OECD's proposed ISIC 4.1 based definition of the ICT sector (refer to APPENDIX A), have not been included in the proposed scope of the ICTIS. This decision is based on assessment of low ICT activity in these industries.

## **Treatment of low specialisation**

47. In the charts above, the majority of the industries are only partially within the inner oval, reflecting varying degrees of ICT specialisation.
48. One of the standard ways for deciding on inclusion or exclusion of specific classes within a standard industrial classification is to look at the specialisation ratios of the industries included in the definition.
49. *ICT Specialisation ratio* for an industry is the ratio of revenue from ICT goods and services as a proportion of total revenue.
50. Using the above concept, for ANZSIC 1993 class 2842 Telecommunication, broadcasting and transceiving equipment manufacturing, the specialisation ratio (on the basis of the commodity outputs from this class) was considered to be of the order of 100% and thus the industry was included in the ICT sector definition. However, with an estimated ICT specialisation ratio of the order of only 1%, the Class 7123 Renting of office machinery and equipment (including renting of computers) was excluded from the ICT sector definition.
51. For the current review, use of specialisation ratios for considering inclusions and exclusions of specific industry classes will be an important tool for finalising the ICT sector. Business counts and industry turnover for the ANZSIC 2006 classes will also be considered for determining the Australian ICT sector. This information is available to the ABS but it is not considered to be of sufficiently good quality for presentation in a public document. Users have been requested to suggest other parameters which will facilitate this exercise.

## **Treatment of specific classes and boundary issues**

52. While specialisation ratios, materiality, employment, turnover and other considerations will determine the final list of ANZSIC 2006 based industries comprising the Australian ICT sector, certain industries remain on the conceptual boundary. Some boundary classes are included in the potential list of industries identified in this paper, but some have been left out based on ABS' interpretation of the definitions for ICT industry, and ICT goods and services.
53. Industries on the conceptual boundary which have been included in the potential list include some education related industries such as 8101, 8102 and 8219. It can be argued that services such as ICT related training produces skills necessary for facilitating information processing and communication. Strong arguments against their inclusion can be presented as well, on the ground that these do not directly enable the function of information processing and communication by electronic means. It might also be argued that education, destined for human beings, is content, and not an ICT product
54. Likewise, activities of industries involved in providing telecommunication infrastructure such as construction of telecommunication towers, and laying of communication cables can be regarded as ICT production. Three such industries have been included in the potential list, 3109, 3232 and 3234. Internet publishing and broadcasting (Class 5700) which essentially deals with content has also been included.
55. The ABS has not included ANZSIC classes 5610, Radio Broadcasting, 5621, Free-to-Air Television Broadcasting and 5622, Cable and Other subscription broadcasting in the definition based on the consideration that these are essentially services to the content industry.

56. Although not strictly a boundary issue, the ANZSIC 1620 (Reproduction of Recorded Media) presents some difficulties. This class consists of units mainly engaged in the reproduction of pre-recorded audio, video, software and other data on electronic, optical and magnetic media. It has been extracted from ANZSIC 1993 Class 2430 (Recorded media manufacturing and publishing industry) and excludes units mainly engaged in publishing optical or magnetic media, including software, (which are included in the appropriate classes of Division J “Information Media and Telecommunications”) and Audio, motion picture and/or video production and/or distribution (which are included in the appropriate classes of Division J “Information Media and Telecommunications”). Although not within the OECD definition of industries, statistics for Class 2430 had been included in the ABS ICTIS publication because mass reproduction of software has been a significant activity in Australia (with existence of units specialising in such activity), and is an important part in the supply chain for software.

57. A range of ICT **goods** can be regarded as boundary ones, and by extrapolation industries that produce these goods might also be regarded as boundary ones. While some goods with embedded ICT (cars, planes) can be easily excluded, many are not straightforward. For example, modern audio-visual equipment such as DVD recorders and digital televisions, with their information processing capabilities and other characteristics, meet the definition of ICT products but it might be argued that the main purpose of these goods is not information processing, or communication. With some other goods, it is impossible to make a determination without adequate knowledge of their functionalities.

#### **Comparability with previous surveys: bridging and backcasting**

58. Changes as a result of ANZSIC 2006 implementation are expected to affect comparability of data over time. The ABS understands the importance of comparability of data to users of its statistics. However, given the significant changes in the industry classification, it is perhaps inevitable that comparability over time will be compromised to an extent.

59. The ABS will publish bridging tables for 2006-07 data. Outputs will be produced on both 1993 and 2006 basis and the sample for the 2006-07 survey will be topped up to allow bridging for the year. In line with many ABS outputs, the ABS does not consider it necessary to backcast ICT industry data.

### **PART G: SUMMARY OF INPUT SOUGHT FROM USERS OF ICT STATISTICS**

60. Users have been requested to provide their views on the following issues:

- the **definition proposed for the future ICT sector to be adopted by the ABS.**
- **adequacy of the proposed scope of ICT industries**, as well as suggestions for additions and deletions of ANZSIC 2006 based industry classes, along with justifications for the same, based on links to policy or specific needs.

- **treatment of boundary industries identified in this paper**, as well as exclusion/inclusion of other industries not specifically identified, but considered to be on the boundary.

## **PART H: FUTURE WORK AND WAY AHEAD**

61. Comments received from users on the issues raised in this discussion paper are being considered for finalising the scope of the 2006-07 ICT Industry survey.

62. The United Nations Statistical Commission at its session on 7 March 2006 considered the draft structures of the ISIC, Rev.4 and the CPC, Ver.2, as recommended by the Expert Group on International Economic and Social Classifications. The Commission has approved the revised classification structures, as the international standards for activity and product classifications. The ABS is considering the above classifications for finalising the scope of the ICT industry and products for the 2006-07 survey.

63. The final outcome of this exercise will determine the completed ABS definition of the ICT industry, and the nature of the next ICT industry survey, both in terms of the conceptual basis and scope, and will thus provide the framework for future ICT statistics. Considering the significant changes for ICT industries and commodities in recent and forthcoming releases of national and international classifications, and the many subjective and boundary issues involved, this is not a simple exercise. The ABS looks forward to receiving feedback from the international community on the proposals contained in this paper.

## **APPENDICES**

**APPENDIX A:** List of ISIC Rev 4 industries and corresponding concordances (expressed in terms of ISIC Rev 3.1 and ANZSIC 2006) included in the OECD's proposed ICT sector definition

**APPENDIX B:** Concordances between ANZSIC 1993 and ANZSIC 2006 for ICT relevant classes

**APPENDIX C:** Concordances between ANZSIC 2006 and ANZSIC 1993 for ICT relevant classes

**APPENDIX D:** Primary activities and exclusions for potentially in scope ICT industries in ANZSIC 2006

**APPENDIX E:** List of ANZSIC 2006 classes without significant ICT activity

**APPENDIX F:** Tables 1 to 3

## Links to relevant Classifications

### ANZSIC 2006

1292.0 - [Australian and New Zealand Standard Industrial Classification \(ANZSIC\), 2006](#)

### ISIC Rev 4



[ISIC Rev.4 draft - approved by UNSC 2006 \(PDF\)](#)  
(800 KB)

### Harmonised System

[Harmonized System Nomenclature](#)

[http://www.wcoomd.org/ie/En/Topics\\_Issues/topics\\_issues.html](http://www.wcoomd.org/ie/En/Topics_Issues/topics_issues.html)

### CPC Ver. 2.0



[CPC Ver.2 draft - approved by UNSC 2006 \(PDF\)](#)  
(1133 KB)



## LIST OF ABBREVIATIONS

ABS	Australian Bureau of Statistics
ANZSIC	Australian and New Zealand Standard Industrial Classification
ANZSPC	Australian and New Zealand Standard Product Classification
CPC	Central Product Classification
HS	Harmonised System
ICT	Information and Communication Technology
ICTIS	Information and Communication Technology Industry Survey
ISIC	International Standard Industrial Classification of All Economic Activities
NAICS	North American Industry Classification System
NZ	New Zealand
OECD	Organisation for Economic Co-operation and Development
UN	United Nation
WPIIS	Working Party on Indicators for the Information Society

## REFERENCES

1. Organisation for Economic Co-operation and Development, DSTI/ICCP/IIS92006)2, *The OECD ICT sector definition review – revision based on the ISIC Rev 4*
2. Organisation for Economic Co-operation and Development, DSTI/ICCP/IIS(2006)/Rev2, *A proposal for ICT goods classification Revision 2006*
3. Organisation for Economic Co-operation and Development DSTI/ICCP/IIS(2002)2, *Reviewing the ICT sector definition: Issues for discussion*
4. Australian Bureau of Statistics, 2004, *Information and Communication Technology 2002-03*, ABS cat. no. 8126.0
5. Australian Bureau of Statistics, 1995, *Information Technology in Australia 1992-93*, ABS cat. no. 8126.0

**APPENDIX A: List of ISIC Rev 4 industries and corresponding concordances  
(expressed in terms of ISIC Rev 3.1 and ANZSIC 2006) included in the OECD's  
proposed ICT sector definition**

<b>ISIC Rev 4 code</b>	<b>ISIC Rev 4 code description</b>	<b>ISIC Rev 3.1 code</b>	<b>ISIC Rev 3.1 code description</b>	<b>ANZSIC 06 class</b>	<b>ANZSIC 06 class description</b>
2610	Manufacture of electronic components	1. 3130 2. 3210 3. 3230	1. Manufacture of insulated wire and cable 2. Manufacture of electronic valves and tubes and other electronic components 3. Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	1a. 2431 2a. 2429p 3a. 2422p 3b. 2429p	1a. Electric Cable and Wire Manufacturing  2a. Other Electronic Equipment Manufacturing  3a. Communication Equipment Manufacturing  3b. Other Electronic Equipment Manufacturing
2620	Manufacture of computers and peripheral equipment	1. 3000 2. 3230	1. Manufacture of office, accounting and computing machinery 2. Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	1a. 2421 2a. 2422p 2b. 2429p	1a. Computer and Electronic office equipment manufacturing  2a. Communication Equipment Manufacturing  2b. Other Electronic Equipment Manufacturing
2630	Manufacture of communication equipment	1. 3220 2. 3230 3. 3312	1. Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy 2. Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	1a. 2422p 1b. 9422p 2a. 2422p 2b. 2429p 3a. 2419p 3b. 9422p	1a. Communication Equipment Manufacturing 1b. Electronic (except Domestic Appliance) and precision Equipment Repair and Maintenance

			3. Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment		2a Communication Equipment Manufacturing  2b. Other Electronic Equipment Manufacturing  3a. Other professional and scientific equipment manufacturing 3.b. Electronic (except domestic appliance) and Precision equipment Repair and Maintenance
2640	Manufacture of consumer electronics	1. 3230	1. Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	1a. 2422p 1b.2429p	1a.Communication Equipment Manufacturing 1b. Other Electronic Equipment Manufacturing
2680	Manufacture of magnetic and optical media	1. 3230	Manufacture of television and radio receivers, sound or video recording or reproducing apparatus and associated goods	2429	Other Electronic Equipment manufacturing
2651	Manufacture of measuring, testing, navigating and control equipment	1. 3312	1. Manufacture of instruments and appliances for measuring, checking, testing, navigating and other purposes, except industrial process control equipment	1a 2419p 1b. 9422p	1a. Other professional and scientific equipment manufacturing 1b. Electronic (except domestic appliance) and Precision equipment Repair and Maintenance
2660	Manufacture of irradiation, electromedical &	1. 3311	Manufacture of medical and surgical equipment and orthopaedic appliances	2412	Medical and Surgical equipment

	electrotherapeutic equipment				manufacturing
2731	Manufacture of fibre optic cables	1. 3130	1. Manufacture of insulated wire and cable	1. 2431	1. Electric Cable and Wire Manufacturing
4651	Wholesale of computers, computer peripheral equipment and software	1. 5151	1. Wholesale of computers, computer peripheral equipment and software	1a 3492	1a. Computer and Computer Peripheral Wholesaling
4652	Whole of electronic and telecommunication equipment and parts	1. 5152	1. Wholesale of electronic and telecommunications parts and equipment	1. 3493 2. 3494p	1. Telecommunication goods Wholesaling 2. Other Electrical and Electronic Goods Wholesaling
4741	Retail sale of computers, peripheral units, software & telecommunication equipment on specialised stores	1. 5239p	1. Other retail sale in specialised stores	1. 4222	1. Computer and Computer Peripheral Retailing
4743	Retail sale of audio and video equipment in specialized stores	1. 5233p	1. Retail sale of household appliances, articles and equipment	1. 4221	1. Electrical, Electronic and Gas Appliance Retailing
5820	Software publishing	1. 7221 2. 7240	1. Software publishing 2. Database activities and online distribution of electronic content	1a. 5420 2a. 5700 2b. 5910p 2c. 5922	1a. Software Publishing 2a. Internet Publishing and Broadcasting 2b. Internet Service Providers and web Search Portals 2c. Electronic Information Storage Services
6110	Wired telecommunications activities	1. 6420	1. Telecommunications	1a. 5801 1b. 5802 1c. 5809 1d. 5910p	1a. Wired Telecommunications Network Operation 1b. Other Telecommunications Network Operation 1c. Other

					Telecommunications Services 1d. Internet Service Providers and Web Search Portals
6120	Wireless telecommunications activities	1. 6420	1. Telecommunications	1a. 5801 1b. 5802 1c. 5809 1d.5910p	1a. Wired Telecommunications Network Operation 1b Other Telecommunications Network Operation 1c. Other Telecommunications Services 1d. Internet Service Providers and Web Search Portals
6130	Satellite telecommunications activities	1. 6420	1. Telecommunications	1a. 5801 1b. 5802 1c. 5809 1d.5910p	1a. Wired Telecommunications Network Operation 1b Other Telecommunications Network Operation 1c. Other Telecommunications Services 1d. Internet Service Providers and Web Search Portals
6190	Other telecommunications activities	1. 6420	1. Telecommunications	1.a. 5801 1b. 5802 1c. 5809 1d.5910p	1a. Wired Telecommunications Network Operation 1 b. Other Telecommunications Network Operation 1c. Other Telecommunications Services

					1d. Internet Service Providers and Web Search Portals
6201	Computer programming activities	1. 7229	1. Other software consultancy and supply	1. 7000p	1. Computer System Design and Related Services
6202	Information Technology consultancy activities and computer facilities management activities	1. 7210 2. 7229 3. 7230	1. Hardware consultancy 2. Other software consultancy and supply 3. Data processing	1. 7000p 2. 7000p 3. 5921p	1. Computer System Design and Related Services 2. Computer System Design and Related Services 3. Data Processing and Web Hosting Services
6209	Other information technology service activities	1. 7290	1. Other computer related activities	1. 7000p	1. Computer System Design and Related Services
6311	Data processing, hosting and related activities	1.7230 2. 7240	1. Data processing 2. Database activities and online distribution of electronic content	1. 5921p 2a.. 5700 2b. 5910p 2c. 5922	1.Data Processing and Web hosting Services 2.a. Internet Publishing and broadcasting 2.b.Internet Service Providers and Web Search Portals 2.c Electronic Information Storage Services
6312	Web portals	1. 7240	1. Database activities and online distribution of electronic content	1 a. 5700 1 b. 5910p 1 c. 5922	1a. Internet Publishing and broadcasting 1b.Internet Service Providers and Web Search Portals 1c Electronic Information

					Storage Services
9511	Repair of computers and peripheral equipment	1. 7250	1. Maintenance and repair of office, accounting and computing machinery	1. 9422p	Electronic (except Domestic Appliance) and Precision Equipment Repair and Maintenance
9512	Repair of communication equipment	1. 3220	1. Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy	1a. 2422p 1b. 9422p	1a. Communication Equipment Manufacturing 1.b. Electronic (except Domestic Appliance) and Precision Equipment Repair and Maintenance
9521	Repair of consumer electronics	1. 5260p	Repair of personal and household goods	9421	Domestic Appliance Repair and Maintenance
7730	Renting and leasing of other machinery, equipment and tangible goods n.e.c	1. 7123	Renting of office machinery and equipment (including computers)	6639p	Other Goods and equipment Rental and Hiring n.e.c
7740	Leasing of no financial intangible assets	1. 6599p	Other financial intermediation n. e.c	6640	Non-Financial Intangible Assets (Except Copyrights) Leasing

## **APPENDIX B**

### **Concordances between ANZSIC 1993 and ANZSIC 2006 for ICT relevant classes**

<b>ANZSIC 93</b>	<b>ANZSIC 93 DESCRIPTION</b>	<b>ANZSIC 06</b>	<b>ANZSIC 06 DESCRIPTION</b>
<b>2430-</b> Recorded Media manufacturing and publishing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Printing publishing and Recorded Media <b>Group:</b> Recorded media manufacturing and publishing	<b>1. 1620-</b> Reproduction of Recorded Media <b>2. 5420p-</b> Software Publishing <b>3. 5521p-</b> Music Publishing	<b>1. Division:</b> Manufacturing <b>Subdivision:</b> Printing (Including the Reproduction of Recorded Media) <b>Group:</b> Reproduction of Recorded Media <b>2. Division:</b> Information Media and Telecommunications <b>Subdivision:</b> Publishing (except Internet and Music Publishing) <b>Group:</b> Software Publishing <b>3. Division:</b> Information Media and Telecommunications <b>Subdivision:</b> Motion Picture and Sound Recording Activities <b>Group:</b> Sound Recording and Music Publishing



<b>ANZSIC 93</b>	<b>ANZSIC 93 DESCRIPTION</b>	<b>ANZSIC 06</b>	<b>ANZSIC 06 DESCRIPTION</b>
<b>2841-</b> Computer and Business Machine Manufacturing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Electronic Equipment Manufacturing	<b>1. 2421-</b> Computer and Electronic Office Equipment Manufacturing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Computer and Electronic Equipment Manufacturing
<b>2842-</b> Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Electronic Equipment Manufacturing	<b>1. 2422p</b> Communication Equipment Manufacturing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Computer and Electronic Equipment Manufacturing
<b>2849-</b> Electronic Equipment Manufacturing n.e.c	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Electronic Equipment Manufacturing	<b>1. 2412p</b> Medical and Surgical Equipment Manufacturing <b>2. 2422p</b> Communication Equipment Manufacturing <b>3. 2429</b> Other Electronic Equipment Manufacturing	<b>1. Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Professional and Scientific Equipment Manufacturing <b>2. Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Computer and Electronic Equipment Manufacturing <b>3. Division:</b> Manufacturing <b>Subdivision:</b> Machinery and

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
2849 continued...			Equipment Manufacturing <b>Group:</b> Computer and Electronic Equipment Manufacturing
2852-Electric Cable and Wire Manufacturing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Electrical Equipment and Appliance Manufacturing	1. 2431-Electric Cable and Wire Manufacturing	<b>Division:</b> Manufacturing <b>Subdivision:</b> Machinery and Equipment Manufacturing <b>Group:</b> Electrical Cable and Wire Manufacturing
4613- Computer Wholesaling	<b>Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Motor Vehicle Wholesaling <b>Group:</b> Machinery and Equipment Wholesaling	1. 3492- Computer and Computer Peripheral Wholesaling	<b>Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Equipment Wholesaling <b>Group:</b> Other Machinery and Equipment Wholesaling
4614-Business Machine Wholesaling n.e.c.	<b>Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Motor Vehicle Wholesaling <b>Group:</b> Machinery and Equipment Wholesaling	1. 3493p- Telecommunication Goods Wholesaling 2. 3494p-Other Electrical and Electronic Good Wholesaling 3. 3499p- Other Machinery and Equipment Wholesaling n.e.c. 4. 3800p- Commission-Based Wholesaling 5. 9422p- Electronic	1. <b>Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Equipment Wholesaling <b>Group:</b> Other Machinery and Equipment Wholesaling 2. <b>Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Equipment Wholesaling <b>Group:</b> Other Machinery and Equipment Wholesaling

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
4614 continued...		(except Domestic Appliance) and Precision Equipment Repair and Maintenance	<b>3. Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Equipment Wholesaling <b>Group:</b> Other Machinery and Equipment Wholesaling <b>4. Division:</b> Wholesale Trade <b>Subdivision:</b> Commission-Based Wholesaling <b>Group:</b> Commission-Based Wholesaling <b>5. Division:</b> Other Services <b>Subdivision:</b> Repair and Maintenance <b>Group:</b> Machinery and Equipment Repair and Maintenance
4615-Electrical and Electronic equipment wholesaling	<b>Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Motor Vehicle Wholesaling <b>Group:</b> Machinery and Equipment Wholesaling	<b>1. 3493p-</b> Telecommunication Goods Wholesaling <b>2. 3494-</b> Other Electrical and Electronic Good Wholesaling <b>3. 4229p-</b> Other Electrical and Electronic Goods Retailing	<b>1. Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and Equipment Wholesaling <b>Group:</b> Other Machinery and Equipment Wholesaling <b>2. Division:</b> Wholesale Trade <b>Subdivision:</b> Machinery and

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
4615 continued...		4. 9429p- Other Machinery and Equipment Repair and Maintenance	Equipment Wholesaling <b>Group:</b> Other Machinery and Equipment Wholesaling <b>3. Division:</b> Retail Trade <b>Subdivision:</b> Other Store-Based Retailing <b>Group:</b> Electrical and Electronic Goods Retailing <b>4. Division:</b> Other Services <b>Subdivision:</b> Repair and Maintenance <b>Group:</b> Machinery and Equipment Repair and Maintenance

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
7120- Telecommunication Services	<b>Division-</b> Communication Services <b>Subdivision-</b> Communication Services <b>Group-</b> Telecommunication Services <b>Class-</b> Telecommunication Services	<b>1. 5700p-</b> Internet Publishing and Broadcasting. <b>2. 5801-</b> Wired Telecommunications Network Operation <b>3. 5802-</b> Other Telecommunications Network Operation <b>4. 5809-</b> Other Telecommunication Services <b>5. 5910p-</b> Internet Service Providers and Web Search Portals	<b>1. Division-</b> Information Media and Telecommunications <b>Subdivision-</b> Internet Publishing and Broadcasting <b>Group-</b> Internet Publishing and Broadcasting <b>Class-</b> Internet Publishing and Broadcasting <b>2. Division-</b> Information Media and Telecommunications <b>Subdivision-</b> Telecommunications Services <b>Group-</b> Telecommunications Services <b>Class-</b> Wired Telecommunications Network Operation <b>3. Division-</b> Information Media and Telecommunications <b>Subdivision-</b> Telecommunications Services <b>Group-</b> Telecommunications

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
7120 continued...			<p>Services</p> <p><b>Class-</b> Other Telecommunications Network Operation</p> <p><b>4. Division-</b> Information Media and Telecommunications</p> <p><b>Subdivision-</b> Telecommunications Services</p> <p><b>Group-</b> Telecommunications Services</p> <p><b>Class-</b> Other Telecommunications Services</p> <p><b>5. Division-</b> Information Media and Telecommunications</p> <p><b>Subdivision-</b> Internet Service Providers, Web Search Portals and Data Processing Services</p> <p><b>Group-</b> Internet Service Providers and Web Search Portals</p> <p><b>Class-</b> Internet Service Providers and Web Search Portals</p>

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
<b>7831-</b> Data processing services	<b>Division-</b> Property and Business Services <b>Subdivision-</b> Business Services <b>Group-</b> Computer Services <b>Class-</b> Data Processing Services	<b>1. 5921p-</b> Data Processing and Web Hosting Services	<b>1. Division-</b> Information Media and Telecommunications <b>Subdivision-</b> Internet Service Providers, Web Search Portals and Data Processing Services <b>Group-</b> Data Processing, Web Hosting and Electronic Information Storage Services <b>Class-</b> Data Processing and Web Hosting Services
<b>7832-</b> Information Storage and Retrieval services	<b>Division-</b> Property and Business Services <b>Subdivision-</b> Business services <b>Group-</b> Computer services <b>Class-</b> Information Storage and Retrieval services	<b>1. 5922-</b> Electronic Information Storage Services	<b>1. Division-</b> Information Media and Telecommunications <b>Sub division-</b> Internet Service Providers, Web Search Portals and Data Processing Services. <b>Group-</b> Data processing, Web Hosting and Electronic Information Storage Services <b>Class-</b> Electronic Information Storage services
<b>7833-</b> Computer maintenance services	<b>Division-</b> Property and Business Services <b>Subdivision-</b> Business	<b>1. 9422p-</b> Electronic (except Domestic Appliance) and Precision Equipment	<b>Division-</b> Other Services <b>Subdivision-</b> Repair and Maintenance

ANZSIC 93	ANZSIC 93 DESCRIPTION	ANZSIC 06	ANZSIC 06 DESCRIPTION
<b>7833 continued...</b>	services <b>Group-</b> Computer services <b>Class-</b> Computer maintenance services	Repair and Maintenance	<b>Group-</b> Machinery and Equipment Repair and Maintenance <b>Class-</b> Electronic (except Domestic Appliance) and Precision Equipment Repair and maintenance
<b>7834-</b> Computer Consultancy Services	<b>Division-</b> Property and Business Services <b>Subdivision-</b> Business Services <b>Group-</b> Computer Services <b>Class-</b> Computer Consultancy Services	<b>1. 5420p-</b> Software Publishing <b>2. 7000-</b> Computer System Design and Related Services	<b>1. Division-</b> Information Media and Telecommunications <b>Subdivision-</b> Publishing (except Internet and Music Publishing) <b>Group-</b> Software Publishing <b>Class-</b> Software Publishing <b>2. Division-</b> Professional, Scientific and Technical Services <b>Subdivision-</b> Computer System Design and Related Services <b>Group-</b> Computer System Design and Related Services <b>Class-</b> Computer System Design and Related Services.
<b>2839-</b> Professional and	<b>Division-</b> Manufacturing	<b>1. 2419p-</b> Other Professional	<b>1. Division-</b> Manufacturing



Scientific Equipment Manufacturing n.e.c	<b>Subdivision</b> -Machinery and Equipment Manufacturing <b>Group</b> -Photographic and Scientific Equipment manufacturing <b>Class</b> - Professional and Scientific Equipment Manufacturing n.e.c	and Scientific Equipment manufacturing <b>2. 9422p</b> - Electronic (except Domestic Appliance) and Precision Equipment Repair and maintenance	<b>1. Subdivision</b> -Machinery and Equipment Manufacturing <b>1. Group</b> - Professional and Scientific Equipment Manufacturing <b>1. Class</b> -Other Professional and Scientific Equipment Manufacturing <b>2. Division</b> - Other Services <b>2. Subdivision</b> - Repair and maintenance <b>2. Group</b> - Machinery and Equipment Repair and Maintenance <b>2. Class</b> - Electronic (except Domestic Appliance) and Precision Equipment Repair and maintenance
<b>4612- Professional Equipment Wholesaling</b>	<b>Division</b> - Wholesale Trade <b>Subdivision</b> - Machinery and Motor Vehicle Wholesaling <b>Group</b> -Machinery and Equipment Wholesaling <b>Class</b> -Professional Equipment Wholesaling	<b>1. 3491</b> - Professional and Scientific Goods Wholesaling	<b>Division</b> -Wholesale Trade <b>Subdivision</b> -Machinery and Equipment Wholesaling <b>Group</b> - Other Machinery and Equipment Wholesaling <b>Class</b> - Professional and Scientific Goods Wholesaling
<b>7743- Plant Hiring or Leasing</b>	<b>Division</b> - Property and Business Services <b>Subdivision</b> : Property Services <b>Group</b> -Machinery and Equipment Hiring and Leasing <b>Class</b> - Plant Hiring or Leasing	<b>1. 6631</b> - Heavy Machinery and Scaffolding Rental and Hiring <b>2. 6639p</b> -Other Goods and Equipment Rental and Hiring n.e.c	<b>1. Division</b> - Rental Hiring and Real Estate Services <b>1. Subdivision</b> - Rental and Hiring Services (except Real Estate) <b>1. Group</b> - Other Goods and Equipment Rental and

			<p>Hiring</p> <p><b>1. Class-</b> Heavy Machinery and Scaffolding Rental and Hiring</p> <p><b>2. Division-</b> Rental, Hiring and real estate Services</p> <p><b>2. Subdivision-</b> Rental and Hiring Services (except Real Estate)</p> <p><b>2. Group-</b> Other Goods and Equipment Rental and Hiring</p> <p><b>2. Class-</b> Other Goods and Equipment Rental and Hiring n.e.c</p>
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➤ **APPENDIX C**

➤ **Concordances for ICT Industries ANZSIC 2006 to ANZSIC 1993**

<b>ANZSIC 2006 Class</b>	<b>ANZSIC 2006 Description</b>	<b>ANZSIC 1993 Class</b>	<b>ANZSIC 1993 Description</b>
<b>1620</b>	Reproduction of Recorded Media	<b>1. 2430p</b>	1. Recorded Media Manufacturing and Publishing
<b>1916</b>	Paint and Coatings Manufacturing	<b>1. 2542 2. 2547</b>	1. Paint Manufacturing 2. Ink Manufacturing
<b>2411</b>	Photographic, Optical and Ophthalmic Equipment Manufacturing	<b>1. 2831p</b>	1. Photographic and Optical Good Manufacturing
<b>2419</b>	Other Professional and Scientific Equipment Manufacturing	<b>1. 2769p 2. 2839p 3. 2859p 4. 2869p</b>	1. Fabricated Metal Product Manufacturing n.e.c. 2. Professional and Scientific Equipment Manufacturing n.e.c. 3. Electrical Equipment Manufacturing n.e.c. 4. Industrial Machinery and Equipment Manufacturing n.e.c.
<b>2421</b>	Computer and Electronic Office Equipment Manufacturing	<b>1. 2841</b>	1. Computer and Business Machine Manufacturing
<b>2422</b>	Communication Equipment Manufacturing	<b>1. 2769p 2. 2842 3. 2849p</b>	1. Fabricated Metal Product Manufacturing n.e.c. 2. Telecommunication, Broadcasting and Transceiving Equipment Manufacturing 3. Electronic Equipment Manufacturing n.e.c.
<b>2429</b>	Other Electronic Equipment Manufacturing	<b>1. 2849p</b>	1. Electronic Equipment Manufacturing n.e.c
<b>2431</b>	Electric Cable and Wire Manufacturing	<b>1. 2852</b>	1. Electric Cable and Wire Manufacturing

<b>ANZSIC 2006 Class</b>	<b>ANZSIC 2006 Description</b>	<b>ANZSIC 1993 Class</b>	<b>ANZSIC 1993 Description</b>
<b>2439</b>	Other Electrical Equipment Manufacturing	<b>1. 2853 2. 2859p</b>	1. Battery Manufacturing 2. Electrical Equipment Manufacturing n.e.c.
<b>3109</b>	Other Heavy and Civil Engineering Construction	<b>1. 4122</b>	1. Non-Building Construction n.e.c.
<b>3232</b>	Electrical Services	<b>1. 4232 2. 5261p</b>	1. Electrical Services 2. Household Equipment Repair Services (Electrical)
<b>3492</b>	Computer and Computer Peripheral Wholesaling	<b>1. 4613</b>	<b>1. Computer Wholesaling</b>
<b>3493</b>	Telecommunication Goods Wholesaling	<b>1. 4614p 2. 4615p</b>	<b>1. Business Machine Wholesaling n.e.c. 2. Electrical and Electronic Equipment Wholesaling n.e.c.</b>
<b>3494</b>	Other Electrical and Electronic Goods Wholesaling	<b>1. 4614p 2. 4615p 3. 4731p 4. 4739p 5. 4791p</b>	<b>1. Business Machine Wholesaling n.e.c. 2. Electrical and Electronic Equipment Wholesaling n.e.c. 3. Household Appliance Wholesaling 4. Household Good Wholesaling n.e.c. 5. Photographic Equipment Wholesaling</b>
<b>3499</b>	Other Machinery and Equipment Wholesaling n.e.c.	<b>1. 4614p 2. 4619p 3. 4731p 4. 4739p 5. 4791p 6. 5245p</b>	<b>1. Business Machine Wholesaling n.e.c. 2. Machinery and Equipment Wholesaling n.e.c. 3. Household Appliance Wholesaling 4. Household Good Wholesaling n.e.c. 5. Photographic Equipment Wholesaling 6. Marine Equipment Retailing</b>

<b>ANZSIC 2006 Class</b>	<b>ANZSIC 2006 Description</b>	<b>ANZSIC 1993 Class</b>	<b>ANZSIC 1993 Description</b>
<b>3800</b>	Commission-Based Wholesaling	<b>1. 4511p</b> <b>2. 4519p</b> <b>3. 4614p</b> <b>4. 4619p</b> <b>5. 4721p</b> <b>6. 4722p</b> <b>7. 4723p</b> <b>8. 4799p</b> <b>9. 7869p</b>	1. Wool Wholesaling 2. Farm Produce and Supplies Wholesaling n.e.c. 3. Business Machine Wholesaling n.e.c. 4. Machinery and Equipment Wholesaling n.e.c. 5. Textile Product Wholesaling 6. Clothing Wholesaling 7. Footwear Wholesaling 8. Wholesaling n.e.c. 9. Business Services n.e.c.
<b>4221</b>	Electrical, Electronic and Gas Appliance Retailing	<b>1. 5234p</b> <b>2. 5244p</b> <b>3. 5259p</b>	1. Domestic Appliance Retailing 2. Photographic Equipment Retailing 3. Retailing n.e.c.
<b>4222</b>	Computer and Computer Peripheral Retailing	<b>1. 5234p</b>	1. Domestic Appliance Retailing
<b>4229</b>	Other Electrical and Electronic Goods Retailing	<b>1. 4615p</b> <b>2. 5259p</b>	1. Electrical and Electronic Equipment Wholesaling n.e.c. 2. Retailing n.e.c.
<b>4242</b>	Entertainment Media Retailing	<b>1. 5235</b> <b>2. 5242p</b>	1. Recorded Music Retailing 2. Toy and Game Retailing
<b>4273</b>	Antique and Used Goods Retailing	<b>1. 5252p</b>	1. Antique and Used Good Retailing
<b>4279</b>	Other Store-Based Retailing n.e.c.	<b>1. 5129p</b> <b>2. 5243p</b> <b>3. 5244p</b> <b>4. 5255p</b> <b>5. 5259p</b>	1. Specialised Food Retailing n.e.c. 2. Newspaper, Book and Stationery Retailing 3. Photographic Equipment Retailing 4. Watch and Jewellery Retailing 5. Retailing n.e.c.

<b>ANZSIC 2006 Class</b>	<b>ANZSIC 2006 Description</b>	<b>ANZSIC 1993 Class</b>	<b>ANZSIC 1993 Description</b>
<b>4310</b>	Non-Store Retailing	<b>1. 5123p</b> <b>2. 5126p</b> <b>3. 5129p</b> <b>4. 5234p</b> <b>5. 5243p</b> <b>6. 5251p</b> <b>7. 5252p</b> <b>8. 5255p</b> <b>9. 5259p</b>	1. Liquor Retailing 2. Milk Vending 3. Specialised Food Retailing n.e.c. 4. Domestic Appliance Retailing 5. Newspaper, Book and Stationery Retailing 6. Pharmaceutical, Cosmetic and Toiletry Retailing 7. Antique and Used Good Retailing 8. Watch and Jewellery Retailing 9. Retailing n.e.c.
<b>4320</b>	Retail Commission-Based Buying and/or Selling	<b>1. 5126p</b> <b>2. 5129p</b> <b>3. 5234p</b> <b>4. 5243p</b> <b>5. 5245p</b> <b>6. 5251p</b> <b>7. 5255p</b> <b>8. 5259p</b>	1. Milk Vending 2. Specialised Food Retailing n.e.c. 3. Domestic Appliance Retailing 4. Newspaper, Book and Stationary Retailing 5. Marine Equipment Retailing 6. Pharmaceutical, Cosmetic and Toiletry Retailing 7. Watch and Jewellery Retailing 8. Retailing n.e.c.
<b>5420</b>	Software Publishing	<b>1. 2430p</b> <b>2. 7730p</b> <b>3. 7834p</b>	<b>1.</b> Recorded Media Manufacturing and Publishing <b>2.</b> Non-financial Asset Investors <b>3.</b> Computer Consultancy Services
<b>7000</b>	Computer System Design and Related Services	<b>1. 7834p</b>	1. Computer Consultancy Services

<b>ANZSIC 2006 Class</b>	<b>ANZSIC 2006 Description</b>	<b>ANZSIC 1993 Class</b>	<b>ANZSIC 1993 Description</b>
<b>9422</b>	Electronic (except Domestic Appliance) and Precision Equipment Repair and Maintenance	1. <b>2831p</b> 2. <b>2832p</b> 3. <b>2839p</b> 4. <b>4259p</b> 5. <b>4614p</b> 6. <b>7833</b>	1. Photographic and Optical Good Manufacturing 2. Medical and Surgical Equipment Manufacturing 3. Professional and Scientific Equipment Manufacturing n.e.c. 4. Construction Services n.e.c. 5. Business Machine Wholesaling n.e.c. 6. Computer Maintenance Services
<b>5700</b>	Internet Publishing and Broadcasting	1. <b>2422p</b> 2. <b>2423p</b> 3. <b>7120p</b>	1. Other Periodical Publishing 2. Book and Other Publishing Telecommunications Services
<b>5801</b>	Wired Telecommunications Network Operation	1. <b>7120p</b>	1. Telecommunications Services
<b>5802</b>	Other Telecommunications Network Operation	1. <b>7120p</b>	1. Telecommunications Services
<b>5420</b>	Software publishing	1. <b>2430p</b> 2. <b>7730p</b> 3. <b>7834p</b>	1. Recorded Media Manufacturing and Publishing 2. Non-Financial Asset Investors 3. Computer Consultancy Services
<b>5910</b>	Internet Service providers and Websearch Portals	1. <b>7120p</b> 2. <b>7869p</b>	1. Telecommunications Services 2. Business Services n.e.c
<b>5921</b>	Data Processing and Web hosting Services	1. <b>7831</b> 2. <b>7869p</b>	1. Data Processing Services 2. Business Services n.e.c
<b>5809</b>	Other Telecommunications Service	1. <b>7120p</b>	1. Telecommunications Services
<b>5922</b>	Electronic Information Storage Services	1. <b>7832</b>	1. Information Storage and Retrieval Services
<b>6631</b>	Heavy Machinery and Scaffolding Rental	1. <b>7743p</b>	1. Plant Hiring and Leasing

	and Hiring		
<b>6639</b>	Other Goods and Equipment Rental and Hiring n.e.c	<b>1. 7730p</b> <b>2. 7743p</b> <b>3. 9519</b>	1. Non- Financial Asset Investors 2. Plant Hiring or Leasing 3. Personal and Household Goods Hiring n.e.c
<b>3491</b>	Professional and Scientific Goods Wholesaling	<b>1. 4612</b>	1. Professional equipment Wholesaling n.e.c
<b>6910</b>	Scientific Research Services	<b>1. 7310</b> <b>2. 7320</b>	1. Research and experimental development on natural sciences and engineering (NSE) 2. Research and experimental development on social sciences and humanities (SSH)
<b>6923</b>	Engineering Design and Engineering Consulting Services	<b>1. 7421p</b>	1. Architectural and engineering activities and related technical consultancy
<b>2412</b>	Medical and Surgical Equipment Manufacturing	<b>1. 2832p</b> <b>2. 2849p</b>	1. Medical and Surgical Equipment Manufacturing 2. Electronic Equipment Manufacturing n.e.c



## **APPENDIX D: Primary activities and exclusions for potentially in scope ICT industries in ANZSIC 2006**

<b>ANZSIC 2006 Class</b>	<b>Definitions</b>	<b>Primary Activities of ANZSIC 2006 Class</b>	<b>Exclusions</b>
<b>1620- Reproduction of Recorded Media</b>	This class consists of units mainly engaged in the reproduction of pre-recorded audio, video, software and other data on electronic, optical and magnetic media	<ol style="list-style-type: none"> <li>1. Audio Tape, Pre-Recorded, Reproduction</li> <li>2. Cassette Tape, Pre-Recorded Audio, Reproduction</li> <li>3. CD-ROM Software, Pre-Recorded, Reproduction</li> <li>4. Compact Disc, Pre-Recorded, Reproduction</li> <li>5. Computer Tape or Disk, Pre-Recorded, Reproduction</li> <li>6. Digital Video Disc (DVD), Pre-Recorded, Reproduction</li> <li>7. Video Tape, Pre-Recorded, Reproduction</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Publishing optical or magnetic media, including software, are included in the appropriate classes of Division J Information Media and Telecommunications; and</li> <li>➤ Audio, motion picture and/or video production and/or distribution are included in the appropriate classes of Division J Information Media and Telecommunications</li> </ul>
<b>2411-Photographic, Optical and Ophthalmic Equipment manufacturing</b>	This class consists of units mainly engaged in manufacturing photographic equipment (except sensitised photographic film, paper, plates or chemicals), optical instruments or equipment or	<ol style="list-style-type: none"> <li>1. Binocular Manufacturing</li> <li>2. Camera Manufacturing</li> <li>3. Contact Lens Manufacturing</li> <li>4. Microscope Manufacturing</li> <li>5. Ophthalmic Article Manufacturing</li> <li>6. Optical Instrument or Equipment Manufacturing</li> <li>7. Optical Lens Grinding</li> <li>8. Spectacle Frame Manufacturing</li> <li>9. Spectacle lens Grinding</li> <li>10. Sunglasses Manufacturing</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Manufacturing optical glasses or blanks for lenses are included in Class 2010 Glass and Glass Product Manufacturing</li> <li>➤ Manufacturing sensitised photographic films, plates, papers or chemicals are included in Class 1891 Photographic Chemical Product Manufacturing</li> <li>➤ Manufacturing photocopying</li> </ul>

	ophthalmic equipment. Also included are units mainly engaged in grinding optical lenses	11. Telescope Manufacturing	<p>machines are included in Class 2421 Computer and Electronic Office Equipment Manufacturing</p> <ul style="list-style-type: none"> <li>➤ Testing sight, diagnosing sight defects or dispensing spectacles or contact lenses are included in Class 8532 Optometry and Optical Dispensing</li> <li>➤ Processing photographic films are included in Class 9532 Photographic Film Processing</li> </ul>
<b>2419- Other Professional and Scientific Equipment Manufacturing</b>	This class consists of units mainly engaged in manufacturing navigational, measuring or other professional and scientific equipment not elsewhere classified such as control or meteorological or surveying equipment or instruments of specialised parts for such equipment	<ol style="list-style-type: none"> <li>1. Clock manufacturing</li> <li>2. Control equipment, electrical manufacturing</li> <li>3. Electricity and electric signal testing equipment manufacturing</li> <li>4. Gas meter manufacturing</li> <li>5. Global positioning system (GPS) equipment manufacturing</li> <li>6. Laboratory analytic instrument manufacturing</li> <li>7. Magnetic resonance imaging (except medical) equipment manufacturing</li> <li>8. Measuring instrument manufacturing</li> <li>9. Meteorological instrument manufacturing n.e.c.</li> <li>10. Nautical instrument manufacturing</li> <li>11. Navigational systems and equipment manufacturing</li> <li>12. Optical fibre cable, uninsulated, manufacturing</li> <li>13. Parking meter manufacturing</li> <li>14. Professional and scientific</li> </ol>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Manufacturing photographic, optical or ophthalmic equipment are included in Class 2411 Photographic, Optical and Ophthalmic Equipment Manufacturing</li> <li>➤ Manufacturing equipment for measuring and testing communications signals are included in Class 2422 Communication Equipments Manufacturing</li> <li>➤ Manufacturing motor control switches and relays are included in Class 2439 Other Electrical Equipment Manufacturing</li> <li>➤ Manufacturing insulated optical fibre cable are included in Class 2431 Electric Cable and Wire Manufacturing</li> </ul>

		<p>equipment manufacturing n.e.c.</p> <p>15.Radar Systems and equipment manufacturing</p> <p>16.Radio remote control equipment manufacturing n.e.c.</p> <p>17.Signalling equipment, electrical, manufacturing n.e.c.</p> <p>18.Sonar systems and equipment manufacturing</p> <p>19.Surveying instrument manufacturing</p> <p>20.Taxi meter manufacturing</p> <p>21.Traffic signal, electrical, manufacturing</p> <p>22.Watch manufacturing</p> <p>23.Water meter manufacturing</p>	
<b>2421-Computer and Electronic Office Equipment Manufacturing</b>	This class consists of units mainly engaged in manufacturing computers, computer peripheral equipment or other electronic office equipment	<p>1. Calculator Manufacturing</p> <p>2. Cash Register Manufacturing</p> <p>3. Computer Manufacturing</p> <p>4. Computer Monitor Manufacturing</p> <p>5. Computer Peripheral Manufacturing</p> <p>6. Computer Printer Manufacturing</p> <p>7. Joystick Manufacturing</p> <p>8. Keyboard Manufacturing</p> <p>9. Laptop Manufacturing</p>	<p><b>Units Mainly Engaged in:</b></p> <ul style="list-style-type: none"> <li>➤ Maintaining or repairing computers are included in Class 9422 Electronic (except Domestic Appliance) and Precision Equipment Repair and Maintenance;</li> <li>➤ Manufacturing digital telecommunications switches, local area network and wide area network</li> </ul>
<b>2421-Computer and Electronic Office Equipment Manufacturing cont...</b>		<p>10.Office Machine (Electronic) Manufacturing</p> <p>11.Photocopying Machine Manufacturing</p> <p>12 Typewriter (Electronic) Manufacturing</p>	<p>communications equipment, such as bridges, routers and gateways; or internal or external computer modems; are included in Class 2422 Communication Equipment Manufacturing;</p> <ul style="list-style-type: none"> <li>➤ Manufacturing electronic</li> </ul>

			<p>components for computers, such as sound, video, controller and network interface cards, and semiconductor equipment are included in Class 2429 Other Electronic Equipment Manufacturing; and</p> <p>➤ Providing computer consultancy services are included in Class 7000 Computer System Design and Related Services</p>
<b>2422-Communication Equipment Manufacturing</b>	<p>This class consists of units mainly engaged in manufacturing electronic and/or studio equipment for television or radio broadcasting; data transmission equipment, such as routers or modems; or telecommunication (including telephone) data communication, receiver or transceiver equipment</p>	<ol style="list-style-type: none"> <li>1. Cable Television Equipment Manufacturing</li> <li>2. Data Transmission Equipment (Bridges, Gateways, Routers etc.) Manufacturing</li> <li>3. Intercom Equipment Manufacturing</li> <li>4. Modem Manufacturing</li> <li>5. Pager Manufacturing</li> <li>6. Radio Broadcast Studio Equipment Manufacturing</li> <li>7. Radio Transceiver Manufacturing</li> <li>8. Radio Transmitter Manufacturing</li> <li>9. Remote Monitoring Alarm System Equipment Manufacturing</li> <li>10. Telecommunication Equipment Manufacturing</li> <li>11. Telephone Equipment Manufacturing</li> <li>12. Telephone Switching Equipment Manufacturing</li> <li>13. Telephone, Cellular, Manufacture</li> <li>14. Television Antenna or Parts Manufacturing</li> <li>15. Television Studio Equipment Manufacturing</li> </ol>	<p><b>Units Mainly Engaged In:</b></p> <p>Installing radio or television broadcasting equipment or telephone, telegraph or telex equipment are included in Class 3109 Other Heavy and Civil Engineering Construction;</p> <p>➤ Manufacturing audio or visual receivers such as televisions or radios, or sound reproducing and/or recording equipment, are included in Class 2429 Other Electronic Equipment Manufacturing; and</p> <p>➤ Manufacturing alarm system equipment (except remote monitoring alarm systems) are included in Class 2429 Other Electronic Equipment Manufacturing</p>

<b>2429- Other Electronic Equipment Manufacturing</b>	This class consists of units mainly engaged in manufacturing audio or visual receiving sets, sound reproducing and/or recording equipment, radio receiving sets (except radio transceivers or radio telegraphic or telephone receivers), television receiving sets, headphones, electronic equipment or components not elsewhere classified	<ol style="list-style-type: none"> <li>1. Amplifier, Audio-Frequency, Manufacturing</li> <li>2. Blank Computer Disc Manufacturing</li> <li>3. Blank Video Cassette Manufacturing</li> <li>4. Circuit Board, Printed (Bare or Loaded), Manufacturing</li> <li>5. Compact Disc Player Manufacturing</li> <li>6. Earphone Manufacturing</li> <li>7. Electronic Circuit Component Manufacturing</li> <li>8. Fire Alarm Apparatus Manufacturing</li> <li>9. Headphone Manufacturing</li> <li>10. Integrated Circuit Manufacturing</li> <li>11. Loudspeaker Manufacturing</li> <li>12. Microphone Manufacturing</li> <li>13. Radio Receiving Set Manufacturing</li> <li>14. Record Player Manufacturing</li> <li>15. Semi-Conductor Manufacturing</li> </ol>	<b>Units mainly engaged in</b> <ul style="list-style-type: none"> <li>➤ Manufacturing electronic scooters or wheelchairs are included in Class 2399 Other Transport Equipment Manufacturing n.e.c.</li> <li>Manufacturing television antennae or parts are included in Class 2422 Communication Equipment manufacturing;</li> <li>➤ Manufacturing radio transceivers, radio telegraphic receivers, radio or television broadcasting equipment (including studio apparatus n.e.c.), closed circuit television equipment or parts for radio, television or audio equipment are included in Class 2422 Communication Equipment Manufacturing;</li> </ul>
<b>2429- Other Electronic Equipment Manufacturing cont...</b>		<ol style="list-style-type: none"> <li>16. Sound Recording Equipment Manufacturing</li> <li>17. Sound Reproducing Equipment Manufacturing</li> <li>18. Tape Recorder Manufacturing</li> <li>19. Television Receiving Set Manufacturing</li> <li>20. Transistor Manufacturing</li> </ol>	<ul style="list-style-type: none"> <li>➤ Manufacturing remote monitoring alarm system equipment or intercom equipment are included in Class 2422 Communication Equipment Manufacturing</li> <li>➤ Repairing record players, tape recorders, radio or television receivers are included in Class 9421 Domestic Appliance Repair and Maintenance; and</li> <li>➤ Installing or repairing car radios or cassette players are included in Class 9411 Automotive Electrical Services</li> </ul>
<b>2431- Electric Cable and Wire</b>	This class consists of units mainly engaged	<ol style="list-style-type: none"> <li>1. Co-Axial Cable Manufacturing</li> <li>2. Fuse Wire Manufacturing</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Manufacturing uninsulated optical</li> </ul>

<b>Manufacturing</b>	in manufacturing cables, wires or strips capable of conducting electricity, including braided or insulated non-ferrous cables, wires or strips. Units mainly engaged in manufacturing optical fibre cables for data transmission, including telecommunications cables are also included	3. Non-Ferrous Cable, Wire or Strip Manufacturing 4. Optical Fibre Cable, Insulated, Manufacturing 5. Telecommunications Cable Manufacturing 6. Wire or Cable, Electric, Manufacturing	fibre cables are included in Class 2419 Other Professional and Scientific Equipment Manufacturing; and ➤ Laying or installing electric or telephone cable or wire are included in Class 3232 Electrical Services
<b>2439- Other Electrical Equipment Manufacturing</b>	This class consists of units mainly engaged in manufacturing batteries, electric motors, generators, electricity transmission or distribution equipment, switchgear, switchboards, transformers or other electrical machinery, equipment, supplies or components not elsewhere classified	1. Battery manufacturing ( including motor vehicles) 2. Brush, carbon, manufacturing 3. Distribution box or board, electricity, manufacturing 4. Dry cell battery manufacturing 5. Dynamo manufacturing n.e.c 6. Electric motor manufacturing n.e.c 7. Electric motor rewinding 8. Electrical equipment for machinery manufacturing n.e.c 9. Furnace, electric, manufacturing (except space heaters) 10. Fuse for cut-out manufacturing 11. Generator manufacturing (except wind powered) 12. Magnet Manufacturing 13. Soldering, Iron, electrical, manufacturing	<b>Units Mainly Engaged In:</b> ➤ Manufacturing windmills are included in class 2461 Agricultural Machinery and Equipment Manufacturing ➤ Manufacturing soldering for welding flux are included in Class 1899 Other Basic Chemical Product Manufacturing n.e.c ➤ Manufacturing automotive electrical parts( except batteries) are included in Class 2313 Automotive Electrical Component Manufacturing ➤ Installing (on-site assembly) of heavy electrical machinery are included in Class 3109 Other Heavy and Civil Engineering Construction

		14. Transformer manufacturing 15. Transmission equipment manufacturing 16. Welding equipment, electrical, manufacturing 17. Wet cell battery manufacturing	
<b>3109- Other Heavy and Civil Engineering Construction</b>	This class consists of units mainly engaged in the construction of residential buildings (except houses) or in carrying out alterations, additions or renovations to such buildings or in organising or managing these activities.	1. Apartment construction 2. Duplex house construction 3. Flat construction 4. High-rise flat construction 5. Renovation or alteration of residential buildings n.e.c 6. Semi-detached house construction	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Off-site production of prefabricated buildings components are included in the appropriate classes of Group 222 Structural Metal Product manufacturing</li> <li>➤ The construction of hotels, hostels, hospitals and other public buildings are included in Class 3020 Non-Residential Building Construction</li> <li>➤ Providing special trade repair services such as electrical or plumbing repairs are included in the appropriate classes of Group 323 Building Installation Services</li> <li>➤ Providing architectural or building consultancy services are included in the appropriate classes of Group 692 Architectural, Engineering and Technical services</li> </ul>
<b>3232- Electrical Services</b>	This class consists of units mainly engaged in the installation of electrical wiring for fittings in buildings for other construction projects. Electrical work arising from the	1. Electric light installation 2. Electric wiring installation 3. Electrical installation work (e.g. switchboards, circuit breakers, etc) 4. Installation of television antennae or cable 5. Installation of television satellite dish	<b>Units Mainly Engaged in:</b> <ul style="list-style-type: none"> <li>➤ Repairing electricity transmission or distribution lines are included in Class 3109 Other Heavy and civil Engineering Construction</li> <li>➤ Installing fire and /or security systems are included in Class 3234 Fire and Security Alarm Installation</li> </ul>

	installation of appliances is included in this class	6. Repair for maintenance of electrical wiring (except of electricity transmission for distribution lines) Telecommunication cable for wire installation (except transmission lines) 8. Traffic signal installation	Services ➤ Repairing electrical appliances are included in Class 9421 Domestic Appliance Repair and Maintenance.
<b>3492- Computer and Computer Peripheral Wholesaling</b>	This class consists of units mainly engaged in wholesaling computers or computer peripheral equipment	1. Blank Compact Disc (CD) Wholesaling 2. Blank Computer Disc Wholesaling 3. Blank Digital Versatile Disc (DVD) Wholesaling 4. Computer Game Wholesaling 5. Computer Peripheral Wholesaling n.e.c. 6. Computer Software Wholesaling 7. Computer Wholesaling 8. Inkjet Printer Wholesaling 9. Keyboard Wholesaling 10. Laser Printer Wholesaling	<b>Units Mainly Engaged In:</b> ➤ Wholesaling telecommunication goods are included in Class 3493 Telecommunication Goods Wholesaling; and ➤ Wholesaling pre-recorded audio or visual entertainment media such as CDs or DVDs are included in Class 3739 Other Goods Wholesaling n.e.c.
<b>3493- Telecommunication Goods Wholesaling</b>	This class consists of units mainly engaged in wholesaling telecommunication goods	1. Cellular Telephone Wholesaling 2. Communication Equipment Wholesaling 3. Facsimile (Fax) Machine Wholesaling 4. Mobile Phone Accessory Wholesaling 5. Mobile Phone Battery Wholesaling 6. Mobile Phone Wholesaling 7. Modem Wholesaling 8. Telecommunication Equipment Parts Wholesaling 9. Telephone and Electric Cable Ducting System Wholesaling 10. Telephone or Telegraph Equipment Wholesaling	n/a



		11.Two-Way Radio Equipment Wholesaling	
<b>3494- Other Electrical and Electronic Goods Wholesaling</b>	This class consists of units mainly engaged in wholesaling electrical or electronic goods not elsewhere classified	1. Air Conditioning Equipment, Electric, Wholesaling 2. Alarm System, Electric or Electronic, Wholesaling 3. Battery, Dry Cell, Wholesaling 4. Bulb or Tube, Electric Light, Wholesaling 5. Cable or Wire, Electric, Wholesaling 6. Calculator Wholesaling 7. Camera Wholesaling 8. Cash Register Wholesaling 9. Digital Versatile Disc (DVD) Players Wholesaling 10. Electric Fitting Dealing (Wholesaling) n.e.c. 11. Electrical Distribution Equipment Wholesaling 12. Electrical Goods Wholesaling n.e.c. 13. Electrical Measuring or Testing Instrument Wholesaling 14. Electronic Goods Wholesaling n.e.c. 15. Fan, Electric, Wholesaling 16. Floor Polisher Wholesaling 17. Generator, Electricity, Wholesaling 18. Kitchen Appliance, Electric, Wholesaling 19. Light Fitting, Electric, Wholesaling 20. Motor, Electric, Wholesaling 21. Photocopier Wholesaling	<b>Units Mainly Engaged In:</b> ➤ Wholesaling binoculars or photographic film are included in Class 3499 Other Machinery and Equipment Wholesaling n.e.c.
<b>3494- Other Electrical and</b>		Wholesaling 22. Photographic Equipment, Electrical	

<b>Electronic Goods Wholesaling cont...</b>		or Electronic, Wholesaling 23. Photographic Equipment, Electrical or Electronic, Wholesaling 24. Radio or Television Part Wholesaling 25. Radio Receiving Set Wholesaling 26. Refrigeration Equipment, Wholesaling 27. Scale, Electrical or Electronic, Wholesaling 28. Sewing Machine Wholesaling 29. Shaver, Electric, Wholesaling 30. Shop or Office Scale Wholesaling 31. Sound Recording or Reproducing Equipment, Wholesaling 32. Stove or Heater Wholesaling 33. Switchgear, Electrical, Wholesaling 34. Television Set Wholesaling 35. Vacuum Cleaner Wholesaling 36. Video Cassette Recorder (VCR) Wholesaling 37. Washing Machine Wholesaling 38. Welding Equipment, Electrical,	
<b>3499- Other Machinery and Equipment Wholesaling n.e.c.</b>	This class consists of units mainly engaged in wholesaling machinery and equipment not elsewhere classified	1. Air Conditioning Equipment, Non-Electric, Wholesaling 2. Bearing Wholesaling 3. Binocular Wholesaling 4. Blank Cassette Wholesaling 5. Boat Wholesaling	<b>Units Mainly Engaged In:</b> ➤ Wholesaling electrical or electronic equipment, including cameras, are included in Class 3494 Other Electrical and Electronic Goods Wholesaling; and ➤ Wholesaling motor vehicle engines
<b>3499- Other Machinery and Equipment Wholesaling n.e.c. cont...</b>		6. Compressor, Air or Gas, Wholesaling 7. Display or Notice Board Wholesaling 8. Fire Protection Equipment, Wholesaling 9. Furnace or Furnace Equipment,	are included in Class 3504 Motor Vehicle New Parts Wholesaling

		Industrial, Wholesaling (except Electrical) 10. Gas Generator or Equipment Wholesaling 11. Gas Heater Wholesaling 12. Hairdressing Equipment Wholesaling 13. Industrial Brush Wholesaling 14. Internal Combustion Engine Wholesaling (except Motor Vehicle Engines) 15. Jetski Part Wholesaling 16. Jetski Wholesaling 17. Kerosene Heater Wholesaling 18. Lubricating Machinery or Equipment Wholesaling 19. Machinery and Equipment Wholesaling n.e.c. 20. Marine Engine Wholesaling 21. Marine Equipment Wholesaling 22. Material Handling Equipment Wholesaling 23. Oil Heater Wholesaling 24. Photographic Film Wholesaling 25. Photographic Supply Wholesaling	
<b>3499- Other Machinery and Equipment Wholesaling n.e.c. cont...</b>		n.e.c. 26. Potable Fire Extinguisher Wholesaling 27. Pumping Machinery or Equipment Wholesaling 28. Scale, Non-Electrical or Non-Electronic, Wholesaling 29. Weighing Machinery Wholesaling n.e.c. 30. Wire Working Machinery or Equipment Wholesaling	

<b>3800- Commission-Based Wholesaling</b>	This class consists of units mainly engaged in the sale of goods or services on behalf of one or more principals on a fee or commission basis. These activities include units who arrange the sale of goods on behalf of a principal, but do not take title to the goods	<ol style="list-style-type: none"> <li>1. Auction Service (except Real Estate)</li> <li>2. Auctioning Livestock</li> <li>3. Export Agent, Wholesaler</li> <li>4. Goods Wholesale Broking n.e.c.</li> <li>5. Import Agent, Wholesaler</li> <li>6. Livestock Agent</li> <li>7. Manufacturer's Sales Agent</li> <li>8. Stock and Station Agent</li> <li>9. Stockyard Operation</li> <li>10. Wholesaler's Sales Agent</li> <li>11. Wool Broking</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ The arrangement of the purchase of travel and related services are included in Class 7220 Travel Agency and Tour Arrangement Services</li> <li>➤ The activities of real estate agents are included in Class 6720 Real Estate Services; and</li> <li>➤ The broking of financial or insurance services are included in the appropriate classes of Subdivision 64 Auxiliary Finance and Insurance Services</li> </ul>
<b>4221- Electrical, Electronic and Gas Appliance Retailing</b>	This class consists of units mainly engaged in retailing electrical, electronic or gas appliances (except computers and computer peripherals)	<ol style="list-style-type: none"> <li>1. Air conditioning retailing</li> <li>2. Appliance, electric, retailing</li> <li>3. Barbeque retailing</li> <li>4. Camera retailing</li> <li>5. Compact disc player retailing</li> <li>6. Cooking utensil, electric, retailing</li> <li>7. Digital versatile disc (DVD) player retailing</li> <li>8. Electronic beeper retailing</li> <li>9. Fan, electric, retailing</li> <li>10. Floor polisher, electric, retailing</li> <li>11. Gas appliance retailing</li> <li>12. Heating equipment, electric or gas, retailing</li> <li>13. Mobile phone retailing</li> <li>14. Modem retailing</li> <li>15. Pager retailing</li> <li>16. Pocket calculator, electronic, retailing</li> <li>17. Projector retailing</li> </ol>	<b>Units Mainly Engaged In :</b> <ul style="list-style-type: none"> <li>➤ Retailing computer or computer peripheral equipment are included in Class 4222 Computer and Computer Peripheral Retailing</li> <li>➤ Retailing CDs, DVDs or other entertainment media are included in Class 4242 Entertainment Media Retailing</li> <li>➤ Retailing car radios are included in Class 3921 Motor Vehicles Parts Retailing</li> <li>➤ Installing heating, refrigeration for air conditioning equipment are included in Class 3233 Air Conditioning and Heating Services</li> <li>➤ Hiring Household appliances are included in Class 6639 Other Goods and Equipment Rental and Hiring n.e.c</li> </ul>

		18. Radio receiving set retailing (except car radios) 19. Refrigerator, retailing 20. Shaver, electric, retailing 21. Sound reproducing equipment retailing 22. Stereo retailing 23. Stove, retailing 24. Television antennae retailing 25. Television set retailing 26. Two-way radio equipment retailing 27. Vacuum cleaner retailing 28. Video cassette recorder (VCR) retailing Washing machine retailing	➤ Repairing and maintaining electrical, electronic and gas domestic appliances are included in Class 9421 Domestic Appliance Repair and Maintenance
<b>4222- Computer and Computer Peripheral Retailing</b>	This Class consists of units mainly engaged in retailing computers for computers peripheral equipment	1. Compact disc burner retailing 2. Computer equipment retailing 3. Computer game console retailing 4. Computer hardware retailing 5. Computer software retailing (except computer games) 6. Printer retailing Visual display unit (VDU) retailing	<b>Units Mainly Engaged In:</b> ➤ Retailing computer games are included in Class 4242 Entertainment Media Retailing.
<b>4229- Other Electrical and Electronic Goods Retailing</b>	This class consists of units mainly engaged in retailing electrical and electronic goods not elsewhere classified	1. Dry Cell Battery Retailing 2. Electric Light Fittings Retailing 3. Electrical Goods Retailing n.e.c. 4. Electronic Goods Retailing n.e.c.	n/a
<b>4242- Entertainment Media Retailing</b>	This class consists of units mainly engaged in retailing audio tapes, compact discs,	1. Audio cassette retailing 2. Compact disc retailing 3. Computer game retailing 4. Digital versatile disc (DVD)	<b>Units Mainly Engaged In:</b> ➤ Retailing second hand records, tapes, CDs, DVDs or videos are included in Class 4273 Antique and

	computer games , digital versatile discs for video cassettes	retailing 5. Video cassette retailing	Used Goods Retailing ➤ Retailing CD players, DVD players , VCRs or other appliances are included in Class 4221 Electrical, Electronic and Gas Appliance Retailing ➤ Retailing computers and computer peripherals are included in Class 4222 Computer and Computer Peripheral Retailing
<b>4273- Antique and Used Goods Retailing</b>	This class consists of units mainly engaged in retailing antiques for second hand goods (except motor vehicles for motor cycles and parts)	1. Antique retailing 2. Con dealing (retailing) 3. Disposals retailing 4. Pawnbroking 5. Second hand book retailing 6. Second had cloth retailing 7. Second hand electrical, electronic or computer equipment retailing 8. Second hand furniture retailing 9. Second hand goods retailing n.e.c 10. Second hand jewellery retailing 11. Second hand record, tape, CD, DVD, for video retailing 12. Second hand sports card retailing 13. Stamp, collectible, dealing (retailing_	<b>Units Mainly Engaged In:</b> ➤ Retailing second hand motor vehicles are included in Class 3911 Car Retailing ➤ Retailing second hand motor cycles are included in Class 3912 Motor Cycle Retailing ➤ Retailing second hand motor vehicle or motor cycle parts are included in Class 3921 Motor Vehicle Parts Retailing ➤ Providing auctioning services are included in Class 38000 Commission Based Wholesaling
<b>4279 Other Store Based Retailing n.e.c</b>	This class consists of units mainly engaged in retailing goods not elsewhere classified	1. Art gallery operation (retail) 2. Binocular retailing 3. Bottled liquefied petroleum gas (LPG) retailing	<b>Units Mainly Engaged In:</b> ➤ Retailing second hand sport cards are included in Class 4273 Antique and Used Goods Retailing

	from store based premises	4. Briquette retailing 5. Clock retailing 6. Coal retailing 7. Coke retailing 8. Computer consumables (toners, inks) retailing 9. Craft goods retailing 10. Duty free store operation 11. Firewood retailing 12. Firework retailing 13. Greeting card retailing 14. Ice retailing 15. Map retailing 16. Musical instrument retailing 17. Pet and pet accessory retailing 18. Photographic chemical retailing 19. Photographic film or paper retailing 20. Pram retailing 21. Religious goods (except books) retailing 22. Speciality stores n.e.c. 23. Store-based retailing n.e.c. 24. Swimming pool retailing 25. Tobacco product retailing Variety store operation	➤ Retailing religious books are included in Class 4244 Newspaper and Book Retailing ➤ Retailing goods without the use of a shopfront or physical store presence are included in Class 4310 Non Store Retailing ➤ Retailing goods on a commission basis are included in Class 4320 Retail Commission Based Buying and /or Selling
<b>4310- Non Store Retailing</b>	This class consists of units mainly engaged in retailing goods without the use of a shopfront or physical store presence, including milk vendors, sole e-commerce retailers and direct shopping	1. Direct mail retailing 2. Direct selling of books 3. Direct selling of cosmetics 4. Direct selling of goods n.e.c. 5. Internet retailing 6. Milk vending 7. Mobile food retailing (except take away food) 8. Vending machine operation (except leasing)	<b>Units Mainly Engaged In:</b> ➤ The Retailing of goods through means of a shopfront or physical store presence are included in the appropriate classes of subdivisions within the Retail Trade Division ➤ Providing mobile food services such as ice cream vending from a van are included in Class 4512 Takeaway Food Services

	units		
<b>4320- Retail Commission-Based Buying and/or Selling</b>	This class consists of units mainly engaged in selling goods to the general public on a fee for commission basis. These activities include units who arrange the sale of goods on behalf off a principle but do not take title to the goods themselves	<ol style="list-style-type: none"> <li>1. Commission-based milk vending</li> <li>2. Commission buying service</li> <li>3. Commission retailing of books</li> <li>4. Commission retailing of cosmetics</li> <li>5. Commission retailing of health foods</li> </ol> Commission selling service	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ The commission based buying and selling of real estate are included in Class 6720 Real Estate services</li> <li>➤ The Broking of financial or insurance services are included in the appropriate classes of Subdivision 64 Auxiliary Finance and Insurance Services</li> <li>➤ Providing auction services are included in Class 3800 Commission Based Wholesaling</li> </ul>
<b>7000- Computer Systems Design and Related Services</b>	This class consists of units mainly engaged in providing expertise in the field of information technologies such as writing, modifying, testing for supporting software to meet the needs of a particular consumer, or planning and designing computer systems that integrate computer hardware, software and communication technologies	<ol style="list-style-type: none"> <li>1. Computer hardware consulting service</li> <li>2. Computer programming service</li> <li>3. Computer software consulting service</li> <li>4. Internet and web design consulting service</li> <li>5. Software development (customised) service (except publishing)</li> <li>6. Software installation service</li> </ol> Systems analysis service	<b>Units Mainly Engaged In :</b> <ul style="list-style-type: none"> <li>➤ Mass producing computer software are included in Class 1620 Reproduction of Recorded Media</li> <li>➤ Leasing or hiring electronic computers or other data processing equipment are included on Class 6639 Other Goods and Equipment Rental and Hiring n.e.c</li> <li>➤ Computer software publishing are included in Class 5420 Software Publishing</li> <li>➤ Proving data processing services or computer data storage and retrieval services are included in the appropriate classes of Group 592 Data Processing, Web Hosting and Electronic Information Storage Services</li> </ul>
<b>9422- Electronic</b>	This class consists of	1. Communication Equipment, Repair	<b>Units Mainly Engaged In:</b>



<b>(except Domestic Appliance) and Precision Equipment Repair and Maintenance</b>	units mainly engaged in repairing and maintaining electronic equipment (except domestic appliances) such as computers and communications equipment, and/or highly specialised precision instruments	and Maintenance 2. Computer and Computer Peripheral Equipment Repair and Maintenance 3. Dental Equipment Repair and Maintenance 4. Diagnostic Imaging Equipment Repair and Maintenance 5. Electrical Measuring Instrument Repair and Maintenance 6. Facsimile (Fax) Machine Repair and Maintenance 7. Laboratory Instrument Repair and	➤ Repairing and maintaining electrical, electronic and gas domestic appliances are included in Class 9421 Domestic Appliance Repair and Maintenance; and ➤ Monitoring security systems are included in Class 7712 Investigation and Security Services
		8. Maintenance 9. Measuring Equipment Repair and Maintenance 10. Medical and Surgical Equipment Repair and Maintenance 11. Meteorological Instrument Repair and Maintenance 12. Navigation Instrument (including Radar and Sonar) Repair and Maintenance 13. Office Machine Repair and Maintenance 14. Optical Instrument (including Microscopes and Telescopes) Repair and Maintenance 15. Photocopying Machine Repair and Maintenance 16. Photographic (including camera) equipment repair 17. Precision equipment calibration 18. Radar and sonar equipment repair and maintenance 19. Scales, professional or scientific,	

		repair and maintenance 20. Surgical equipment repair and maintenance 21. Surveying equipment repair and maintenance 22. Telephone equipment repair and maintenance	
<b>5700-Internet Publishing and Broadcasting</b>	This class consists of units mainly engaged in publishing and or broadcasting content on the internet. Units in this class provide textual, audio and or video content of general or specific interest on the internet. These units do not provide traditional(non-internet) version of the content they publish or broadcast	1. Internet art print publishing 2. Internet atlas publishing 3. Internet audio broadcasting 4. Internet book publishing 5. Internet directory publishing 6. Internet encyclopaedia and dictionary publishing 7. Internet greeting card publishing 8. Internet journal publishing 9. Internet magazine publishing 10. Internet news publishing 11. Internet periodical publishing Internet video broadcasting	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Providing internet access and operating web search portals( search engines) are included in Class 5910 Internet Service Providers and Web Search Portals</li> <li>➤ Providing internet streaming services are included in the class 5921 Data Processing and web Hosting Services</li> <li>➤ Publishing newspapers, periodicals, books and other information products using traditional methods (eg print) as well as the internet are included in the appropriate classes of Subdivision 54 Publishing (except Internet and Music Publishing) according to the type of product published</li> <li>➤ Operating units of stock brokerages, travel reservation systems, purchasing services and similar activities using the internet rather than traditional</li> </ul>

			methods are included on classes according to their primary activity
<b>5801- Wired Telecommunications Network Operation</b>	This class consists of units mainly engaged on operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound and video using wired telecommunications networks. Units operate fixed (wired) telecommunication infrastructure, but may also utilise other types of technologies in order to deliver services	<ol style="list-style-type: none"> <li>1. International telephone network operation (wired)</li> <li>2. Local telephone network operation (wired)</li> <li>3. Long distance telephone network operation (wired)</li> <li>4. Telecommunications network operation (wired)</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Operating and maintaining switching and transmission facilities that provide omni-directional or point to point communications via wireless telecommunication networks are included in class 5802 Other Telecommunication Network Operation</li> <li>➤ Reselling telecommunications without operating a network are included in Class 5809 Other Telecommunications Services</li> <li>➤ Producing and broadcasting television programs for pay or subscription television networks or stations are included in Class 5622 Cable and Other Subscription Broadcasting</li> <li>➤ Publishing telephone directories are included in Class 5411 Directory and Mailing List Publishing</li> <li>➤ Maintaining and installing telecommunications systems are included in Class 3109 Other heavy and Civil Engineering Construction</li> </ul>
<b>5802- Other</b>	This class consists	1. Mobile telecommunications	<b>Units Mainly Engaged In:</b>

<b>Telecommunications Network Operation</b>	of units mainly engaged in operating and maintaining switching and transmission facilities that provide omni-directional for point to point communications via wireless telecommunication networks. Transmission facilities may be based on a single technology or a combination of technologies, including communications via airways and through satellite systems	network operation 2. Satellite telecommunications network operation 3. Wireless telecommunications network operation	<ul style="list-style-type: none"> <li>➤ Operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound and video using wired telecommunications networks are included in Class 5801 Wired Telecommunications Network Operation</li> <li>➤ Reselling telecommunications without operating a network are included in Class 5809 Other Telecommunications Services</li> <li>➤ Broadcasting television programs for pay for subscription television networks or stations are included in Class 5622 Cable and Other Subscription Broadcasting</li> <li>➤ Maintaining and installing telecommunications systems are included in the appropriate classes of Division E Construction</li> </ul>
<b>5420- Software Publishing</b>	This class consists of units mainly engaged in creating and disseminating ready made (non-customised) computer software	1. Software publishing (non-customised)	<b>Units Mainly Engaged in:</b> <ul style="list-style-type: none"> <li>➤ Providing customised software design consulting services are included in Class 7000 Computer Systems Design and Related Services</li> <li>➤ The mass duplication of software</li> </ul>

			<p>are included in Class 1620 Reproduction of Recorded Media</p> <ul style="list-style-type: none"> <li>➤ Wholesaling computer software are included in Class 3492 Computer and Computer Peripheral Wholesaling</li> <li>➤ Retailing computer software (except games) are included in Class 4222 Computer and Computer Peripheral Retailing</li> </ul>
<b>5910- Internet Service providers and web search portals</b>	<p>This class consists of units mainly engaged in providing internet access services. Also included are units which provide web search portals used to search the internet</p>	<ol style="list-style-type: none"> <li>1. Internet access provision</li> <li>2. Internet access service, on-line</li> <li>3. Internet search portal operation</li> <li>4. Internet search web site operation</li> <li>5. Internet service provision (ISP)</li> <li>6. Portal web search operation</li> </ol> <p>Web search portal operation</p>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Publishing for broadcasting exclusively on the internet are included in class 5700 Internet Publishing and Broadcasting</li> <li>➤ Providing web hosting services are included in Class 5921 Data Processing and Web Hosting services</li> <li>➤ Internet and web design consulting services are included in Class 7000 Computer Systems Design and related Services</li> <li>➤ Operating units of stock brokerage, travel reservations systems, purchasing services and similar activities using the internet rather than traditional; methods re included in classes according to their primary activity</li> </ul>
<b>5921- Data Processing and</b>	<p>This class consists of units mainly</p>	<ol style="list-style-type: none"> <li>1. Application hosting</li> <li>2. Application service provision</li> </ol>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Providing word processing and</li> </ul>

<b>Web hosting Services</b>	<p>engaged in providing electronic data processing or hosting services. These units provide specialised hosting activities such as web hosting, streaming services for application hosting, provide application services provisioning, or provide general timesharing mainframe facilities to customers. These units provide complete processing and specialised reports from data supplied by customers to provide automated data processing and data entry services.</p>	<ol style="list-style-type: none"> <li>3. Audio and visual media streaming service</li> <li>4. Automated data processing service</li> <li>5. Computer input preparation service</li> <li>6. Computer time leasing or renting</li> <li>7. Computer time sharing service</li> <li>8. Data capture imaging service</li> <li>9. Data entry service (electronic)</li> <li>10. Data processing computer service</li> <li>11. Disk and diskette conversion and recertification service</li> <li>12. Electronic data processing service</li> <li>13. Microfiche or microfilm recording and imaging service</li> <li>14. Optical scanning service</li> </ol> <p>Web hosting</p>	<p>related document preparation activities are included on Class 7292 Document Preparation services</p> <ul style="list-style-type: none"> <li>➤ Providing on site management and operation of a customers data processing facilities are included in Class 7000 Computer System Design and Related Services</li> <li>➤ Gathering, tabulating and presenting marketing and opinion data are included in Class 6950 Market Research and Statistical Services</li> <li>➤ Processing financial transactions such as credit card transaction are included in the appropriate classes of Division K Financial and Insurance Services</li> <li>➤ Proving payroll processing services are included in Class 7291 Office Administrative Services</li> </ul>
<b>5809- Other Telecommunications Service</b>	<p>This class consists of units mainly engaged in providing a range of other telecommunication</p>	<ol style="list-style-type: none"> <li>1. Paging service</li> <li>2. Satellite earth station operation</li> </ol> <p>Telecommunications reselling (including satellite systems)</p>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Operating and maintaining transmission networks to provide point to point communications are included in Class 5801 Wired</li> </ul>

	services such as paging services and other specialized telecommunications applications. Also included in this class are units of telecommunications resellers purchasing access and network capacity from telecommunication carriers.		<p>Telecommunications Network Operation</p> <ul style="list-style-type: none"> <li>➤ Broadcasting television programs for cable systems are included in Class 5622 Cable and Other Subscription Broadcasting</li> <li>➤ Maintaining and installing telecommunications systems are included in the appropriate classes of Division E Construction</li> </ul>
<b>5922- Electronic Information Storage Services</b>	This class consists of units mainly engaged in providing electronic information storage and retrieval services (except library services)	<ol style="list-style-type: none"> <li>1. Computer data storage and retrieval service (except library service)</li> <li>2. Electronic information storage and retrieval service (except library service)</li> </ol>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Providing library or archive services are included in Class 6010 Libraries and Archives</li> <li>➤ Providing data processing or hosting services are included in Class 5921 Data Processing and Web Hosting Services</li> </ul>
<b>6639- Other Goods and Equipment Rental and Hiring n.e.c</b>	This class consists of units mainly engaged on hiring, leasing or renting goods and equipment not elsewhere classified.	<ol style="list-style-type: none"> <li>1. Amusement machine, coin operated, rental and hiring</li> <li>2. Art work rental</li> <li>3. Bicycle rental</li> <li>4. Camping equipment rental</li> <li>5. Costume hire</li> <li>6. DIY equipment rental</li> <li>7. Electric and electronic appliance rental</li> <li>8. Furniture rental</li> </ol>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Renting and hiring pre-recorded video tapes, discs or other electronic media are included in Class 6632 Video and Other Electronic Media Rental and Hiring</li> </ul>

		9. Hand tool rental 10. Office machinery rental 11. Pot plant hire 12. Sound reproducing equipment rental 13. Sports and recreation equipment rental 14. Suit hire 15. Video recorder or player rental	
<b>3491- Professional and Scientific Goods Wholesaling</b>	This class consists of units mainly engaged in wholesaling scientific, medical or other professional equipment (except photographic equipment)	1. Aeronautical equipment wholesaling 2. Dental instrument to equipment wholesaling 3. Draughting instrument wholesaling 4. Mathematical instrument wholesaling 5. Medical equipment wholesaling 6. Navigational equipment wholesaling 7. Optical instrument wholesaling 8. Professional equipment wholesaling n.e.c 9. Scientific equipment wholesaling 10. Surgical equipment wholesaling 11. X-ray equipment or film wholesaling	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Wholesaling cameras are included in Class 3494 Other Electrical and Electronic Good</li> <li>➤ Wholesaling</li> <li>➤ Wholesaling binoculars or photographic film are included in class 3499 Other Machinery and Equipment Wholesaling i.e.</li> </ul>
<b>6910- Scientific Research Services</b>	This class consists of units mainly engaged in undertaking research in the agricultural, biological, and	1. Aeronautical research service 2. Agricultural research service 3. biological research service 4. Biotechnology research service 5. economic research service	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Providing technical or engineering consulting services are included in Class 6923 Engineering Design and Engineering Consulting Services</li> <li>➤ Providing market research or</li> </ul>



	physical or social sciences. Units may undertake the research for themselves or others.	6. Food research service 7. Industrial research service 8. Medical research service 9. Observatory research service 10. Research farm operation 11. Scientific research service 12. Social science research service 13. Space tracking research station operation	statistical services are included in Class 6950 Market Research and Statistical Services ➤ Providing pathological services for the medical profession are included in Class 8520 Pathology and Diagnostic Imaging Services.
<b>6923- Engineering Design and Engineering Consulting Services</b>	This class consists of units mainly engaged in providing engineering consulting services. These units are primarily involved in applying physical laws and principles of engineering in the design, development and utilization of machines, materials, instruments, structures, processes and systems. Units provide advice, prepare feasibility studies, prepare preliminary and final plans and designs, provide technical services during the construction or installation phase,	1. Boat design service 2. Building consulting service 3. Building inspection service 4. Chemical engineering consulting service 5. Civil engineering consulting service 6. Drafting service, engineering 7. Electrical engineering consulting service 8. Electronic engineering consulting service 9. Engineering consulting service n.e.c 10. Geotechnical engineering consulting service 11. Hydraulic engineering consulting service 12. Industrial design service 13. Marine engineering consulting service 14. Materials handling engineering consulting service	<b>Units Mainly Engaged In:</b> ➤ The physical or chemical transformation of materials into new products are included in the appropriate classes of Division C manufacturing ➤ Managing or organizing construction projects are the prime contractor are included in the appropriate classes of Division E Construction ➤ Undertaking scientific research are included in Class 6910 Scientific Research Services ➤ Providing Scientific or technical laboratory or testing services are included in Class 6925 Scientific Testing and Analysis Services

	inspect and evaluate engineering projects and related services	15. Mechanical engineering consulting service 16. Mining engineering consulting service 17. Naval architecture service 18. Process engineering consulting service 19. Quantity surveying service 20. Sanitary engineering consulting service 21. Traffic engineering consulting service	
<b>2412- Medical and Surgical Equipment Manufacturing</b>	This class consists of units mainly engaged in manufacturing medical, surgical or dental equipment, including dentures	1. Artificial eye manufacturing 2. Artificial joint manufacturing 3. Artificial limb manufacturing 4. Dental amalgam manufacturing 5. Dental chair manufacturing (fitted with mechanical device) 6. Dental instrument or equipment manufacturing 7. Dental plaster or cement manufacturing 8. Denture manufacturing 9. Electromedical equipment manufacturing 10. First aid equipment manufacturing 11. Hearing aid manufacturing 12. Hypodermic needle or syringe manufacturing 13. Magnetic resonance imaging (medical) equipment manufacturing	<b>Units Mainly Engaged In:</b> ➤ Manufacturing ophthalmic equipment are included in Class 2411 photographic, Optical and Ophthalmic Equipment Manufacturing

		14. Medical diagnostic apparatus manufacturing 15. Medical equipment manufacturing 16. Medical ultrasound equipment manufacturing 17. Orthotics (arch support) manufacturing 18. Pacemaker manufacturing 19. Respirator manufacturing 20. Surgical equipment manufacturing 21. Thermometer, medical, manufacturing 22. Veterinary instrument manufacturing	
<b>9209- Other Gambling Activities</b>	This class consists of units mainly engaged in operating other gambling services such as totalisator or betting services. Also included in this class are units offering gambling services through the Internet	1. Betting shop operation 2. Bookmaker operation 3. Gambling activity n.e.c 4. Internet gambling operation 5. TAB operation	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Providing food or liquor and poker/gaming machine services only are included in the appropriate classes of Division H Accommodation and Food Services</li> </ul>
<b>6640- Non-Financial Intangible Assets (Except Copyrights) Leasing</b>	This class consists of Units mainly engaged in holding intellectual property (including trade marks) or other non-financial intangible assets	1. Brand-name leasing 2. Franchise agreement leasing 3. Horticultural plant variety right leasing 4. Mineral exploration right on leasing	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Deriving income from payments for the use or reproduction of copyrighted assets are included in the appropriate classes of Division J Information Media and Telecommunications</li> </ul>

	(except copyright). The Units derive income from fees paid to them for the use of the assets, including the right to reproduce the assets.	5. Patent leasing 6. Radio spectrum right leasing 7. Taxi cab plate leasing 8. Trade mark leasing	
<b>9429- Other Machinery and Equipment Repair and Maintenance</b>	This class consists of units mainly engaged in the repair and maintenance of machinery and equipment not elsewhere classified. Also included in this class are units which either sharpen/install blades and saws for provide welding repair services	1. Agricultural for farm machinery and equipment repair and maintenance 2. Blade sharpening 3. Brushcutter repair and maintenance 4. Construction machinery and equipment repair and maintenance 5. Electric motor repair and maintenance, including armature rewinding (except factory based) 6. Electrical generating and transmission equipment repair and maintenance 7. Engine repair (except automotive) 8. Food machinery and equipment (industrial) repair and maintenance 9. Forestry machinery and equipment repair and maintenance 10. Heavy machinery and	<b>Unit Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Repairing and maintaining electronic and precision equipment are included in class 9422 Electronic ( except Domestic Appliance) and Precision Equipment Repair and Maintenance</li> <li>➤ Repairing and servicing aircraft are included in Class 2394 Aircraft manufacturing and Repair Services</li> <li>➤ Repairing and servicing railway rolling stock are included in Class 2393 Railway Rolling Stock Manufacturing and Repair Services</li> <li>➤ Repairing and overhauling at shipyards ships of 50 tones and over displacements re included in Class 2391 Shipbuilding and Repair Services</li> <li>➤ Repairing boats on under 50 tones displacements are included in Class 2392 Boatbuilding and Repair services</li> <li>➤ Factory rebuilding of electric motors are included in Class 2439</li> </ul>

		<p>equipment repair and maintenance</p> <p>11. Hydraulic equipment repair and maintenance</p> <p>12. Lawn mover repair and maintenance</p> <p>13. Machine tool repair and maintenance</p> <p>14. Material handling equipment repair and maintenance</p> <p>15. Mining machinery and equipment repair and maintenance</p> <p>16. Outboard motor repair</p> <p>17. Paper making and printing trade machinery repair and maintenance</p> <p>18. Pump and compressor repair</p> <p>19. Refrigeration equipment (industrial) repair and maintenance</p> <p>20. Shipping barrel and drum reconditioning and repair</p> <p>21. Stove and /or oven (industrial) repair and maintenance</p> <p>22. Textile machinery repair and maintenance</p> <p>23. Washing machine and /or cloths dryer(industrial) repair and maintenance</p> <p>24. Welding repair service (including automotive)</p>	<p>Other Electrical Equipment manufacturing</p> <p>➤ Repairing and maintaining domestic appliance Repair and Maintenance.</p>
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<b>9421- Domestic Appliance Repair and Maintenance</b>	This class consists of units mainly engaged in repairing and maintaining electrical, electronic and gas domestic appliances	<ol style="list-style-type: none"> <li>1. Air conditioner repair and maintenance</li> <li>2. Appliance domestic repair</li> <li>3. Heater (domestic) repair</li> <li>4. Microwave oven, domestic, repair</li> <li>5. Radio and stereo repair and maintenance (except automotive)</li> <li>6. Refrigerator, domestic, repair</li> <li>7. Sewing machine (domestic) repair</li> <li>8. Stove and/or oven (domestic) repair</li> <li>9. Television repair and maintenance</li> <li>10. VCR and DVD repair and maintenance</li> <li>11. Washing machine and/or clothes dryer (domestic) repair</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ Reaping and maintaining electronic and precision equipment such as radars, sonar's and telescopes are included in Class 9422 Electronic (except Domestic appliance) and precision Equipment Repair and Maintenance</li> <li>➤ Installing central heating and air conditioning equipment are included in Class 3233 Air Conditioning and Heating Services</li> <li>➤ Installing and repairing automotive (car) radio or CD players are included in Class 9411 Automotive Electrical Services</li> </ul>
<b>3234- Fire and Security Alarm Installation Services</b>	This class consists of units mainly engaged in the installation of fire protection, detection and control systems, and in installing security systems	<ol style="list-style-type: none"> <li>1. Closed circuit video surveillance system installation</li> <li>2. Fire alarm system installation</li> <li>3. Fire sprinkler installation</li> <li>4. Repair of installed fire for burglar security alarm systems</li> <li>5. Security system installation</li> <li>6. Smoke detector installation</li> </ol>	<b>Units Mainly Engaged In:</b> <ul style="list-style-type: none"> <li>➤ The installation and monitoring of security systems are included in class 7712 Investigation and Security Services</li> </ul>
<b>8219-Adult, Community and Other Education</b>	This class consists of units mainly engaged in providing adult,	<ol style="list-style-type: none"> <li>1. Driving school operation</li> <li>2. Flying school operation</li> <li>3. Home computing and keyboard</li> </ol>	<b>Units Mainly Engaged in:</b> <ul style="list-style-type: none"> <li>➤ Providing non-vocational instruction in sporting and</li> </ul>

<b>n.e.c</b>	community and other education not elsewhere classified	<p>skill instruction</p> <ol style="list-style-type: none"> <li>4. Home economics and personal management instruction</li> <li>5. Instruction in diet, exercise and lifestyle factors</li> <li>6. Instruction through Universities and the Third Age and Schools for Seniors</li> <li>7. Parental education program operation</li> <li>8. Public speaking training</li> <li>9. Social and interpersonal skill training</li> <li>10. Study skill, career development and job search training</li> <li>11. Survival skill training</li> <li>12. Tutoring service</li> </ol>	<p>physical recreation activities are included in class 8211 Sports and Physical Recreational Instruction</p> <ul style="list-style-type: none"> <li>➤ Providing non-vocational instruction in the arts are included in class 8212 Arts Education, and</li> <li>➤ Providing vocational training are included in class 8101 Technical and Vocational Education and Training</li> </ul>
<b>8102- Higher Education</b>	This class consists of units mainly engaged in providing undergraduate or postgraduate teaching	<ol style="list-style-type: none"> <li>1. Colleges of education operation</li> <li>2. Postgraduate school, University operation</li> <li>3. Research school, University operation</li> <li>4. Specialist institute or college</li> <li>5. Teachers college operation</li> <li>6. Undergraduate school, university operation</li> <li>7. University operation</li> </ol>	<p><b>Units Mainly Engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Operating student halls of residence are included in Class 4400 Accommodation</li> <li>➤ Undertaking research in the agricultural, biological, physical for social sciences are included in Class 6910 Scientific Research Services</li> </ul>
<b>8101-Technical and Vocational Education and Training</b>	This class consists of units mainly engaged in providing technical and vocational education and	<ol style="list-style-type: none"> <li>1. Apprenticeship training program operation</li> <li>2. Business college and school operation</li> <li>3. Information technology training</li> </ol>	<p><b>Units mainly engaged In:</b></p> <ul style="list-style-type: none"> <li>➤ Providing undergraduate or postgraduate teaching are included in Class 8102 Higher Education</li> </ul>

	<p>training. These units offer a large variety of courses covering a range of subjects or specialize in a particular field of education such as computer and business management training</p>	<p>centre operation</p> <ol style="list-style-type: none"> <li>4. Institute of technology operation</li> <li>5. Professional and management development training</li> <li>6. Secretariat training</li> <li>7. Technical and further education college operation</li> <li>8. Technical college operation</li> <li>9. Vocational computer training</li> </ol>	<ul style="list-style-type: none"> <li>➤ Providing sports and physical recreation coaching not predominantly leading to tertiary qualifications are included in Class 8211 Sports and Physical Recreation Instruction</li> <li>➤ Providing education in the arts not predominantly leading to tertiary qualifications are included in class 8212 Arts education</li> </ul>
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## **APPENDIX F : Tables**

**Table 1 :Correspondence between ISIC classes in the current OECD ICT sector definition with ANZSIC 1993 classes.**

<b>OECD ICT sector ISIC Rev 3 Industries</b>	<b>Status of current ABS definition of the ICT sector</b>	<b>Status in current ABS definition of the ICT sector</b>	<b>Comments</b>
<b>Manufacturing</b>			
3000 Office, accounting and computing machinery	2841 Computer and business machine manufacturing	Included, non specialist	Close to a one to one relationship
3130 Insulated wire cable	2852 Electric cable and wire manufacturing	Included, non specialist	Close to a one to one relationship
3210 Electronic valves and tubes and other electronic components	2849 Electronic equipment manufacturing (part)	Included, non specialist	See also ISIC 3230, together these have a one to one relationship with ANZSIC 93 class 2849
3220 Television and radio transmitters and apparatus for line telephony and line telegraphy	2842 Telecommunication, broadcasting and transceiving equipment manufacturing	Included, Specialist	One to one relationship
3230 Television and radio receivers, sound or video recording or reproducing apparatus and associated goods	2849 Electronic equipment manufacturing (part)	Included, non specialist	See also ISIC 3210, together these have a one to one relationship with ANZSIC 93 class 2849
3312 Instruments and appliances for measuring, checking, testing, navigating and other purposes except industrial process equipment			Equivalent ANZSIC 93 class is 2839 (Professional and scientific equipment manufacturing). This is not in scope of current ABS ICT Industry Survey. Note that ISIC 3312 also contains some elements of ANZSIC 93 Class 2832 (Medical and surgical

			manufacturing). This class is also not in scope of the current ICT Industry Survey.
<b>OECD ICT sector ISIC Rev 3.1 Industries</b>	<b>Status of current ABS definition of the ICT sector</b>	<b>Status in current ABS definition of the ICT sector</b>	<b>Comments</b>
3313 Industrial process equipment			Equivalent ANZSIC 93 class is 2839 (Professional and scientific equipment manufacturing).
<b>Services</b>	equipment		
5151 (Wholesale of computers, computer peripheral and software)			In ISIC Rev 3.1 Class 5150 (Wholesale of machinery, equipment and supplies) has been divided into many classes of which classes 5151 and 5152 are ICT related.
5152 (Wholesale of electronic and telecommunications parts and equipment.			In ISIC Rev 3.1 Class 5150 (Wholesale of machinery, equipment and supplies) has been divided into many classes of which classes 5151 and 5152 are ICT related.
6420 Telecommunications	7120 Telecommunication services	Included, specialist	One to one relationship
7123 Renting of office machinery and equipment (including computers)	7743 Plant hiring or leasing		Equivalent ANZSIC 93 is 7743 (Plant hiring or leasing). This is not in scope current ABS sector definition.
7210 Hardware consultancy	7834 Computer consultancy services (part)	Included, specialist	See also ISIC 7220 and 7290. Together these have a one to one relationship with ANZSIC 7834
7220 Software	7834 Computer	Included, specialist	See also ISIC 7210

consultancy and supply	consultancy services (part)		and 7290. Together these have one to one relationship with ANZSIC 7834
7230 Data processing	7831 Data Processing services	Included, specialist	One to one relationship
7240 Data base activities	7832 Information storage and retrieval services	Included, specialist	Close to a one to one relationship

<b>OECD ICT sector ISIC Rev 3 Industries</b>	<b>ABS ICT sector ANZSIC 93 Industries</b>	<b>Status in current ABS definition of the ICT sector</b>	<b>Comments</b>
7250 Maintenance and repair of office, accounting and computing machinery	7833 Computer maintenance services	Included, specialist	Close to a one to one relationship
7290 Other computer related activities	7834 Computer consultancy services (part)	Included, specialist	See also ISIC 7210 and 7220. Together these have a one to one relationship with ANZSIC 7834

**TABLE 2: Levels of ICT Activity in ANZSIC 1993 based industry classes in current ABS ICT sector definition**

<b>Industry classes</b>		
<b>All activity in-scope</b>	<b>Majority of activity in-scope</b>	<b>Some activity in-scope</b>
2842-Telecommunication, Broadcasting and Transceiving Equipment Manufacturing	2430- Recorded Media Manufacturing and Publishing	2839-Professional and Scientific Equipment manufacturing n.e.c
4613- Computer Wholesaling	2841- Computer and Business Machine Manufacturing	4612- Professional Equipment Wholesaling
4614- Business Machine Wholesaling n.e.c.	2849- Electronic Equipment Manufacturing n.e.c.	4615- Electrical and Electronic Equipment Wholesaling n.e.c.
7120- Telecommunication Services	2852- Electric Cable and Wire Manufacturing	7743-Plant Hiring or Leasing
7831- Data Processing Services		
7832- Information Storage and Retrieval Services		
7833- Computer Maintenance Services		
7834- Computer Consultancy Services		

**Table 3: Levels of ICT Activity based on the broad view of the ICT industry and ANZSIC 2006 classes**

Industry classes		
Il activity in-scope	Majority of activity in-scope	Some activity in-scope
2422- Communication Equipment Manufacturing	2419- Other Professional and Scientific Equipment Manufacturing	1620- Reproduction of Recorded Media
3491- Professional and Scientific Goods wholesaling	2421- Computer and Electronic Office Equipment Manufacturing	2411- Photographic, Optical and Ophthalmic Equipment Manufacturing
3492- Computer and Computer Peripheral Wholesaling	2431- Electric Cable and Wire Manufacturing	2412-medical and Surgical Equipment Manufacturing
3493- Telecommunication Goods Wholesaling		2429- Other Electronic Equipment Manufacturing
4222- Computer and Computer Peripheral Retailing		2439- Other Electrical Equipment Manufacturing
5420- Software Publishing		3109- Other Heavy and Civil Engineering Construction
5700- Internet Publishing and Broadcasting		3232- Electrical Services
5801- Wired Telecommunications Network Operation		3234- Fire and Security Alarm Installation Services
5802- Other Telecommunications Network Operation		3494- Other Electrical and Electronic Goods Wholesaling
5809- Other Telecommunication Services		3499- Other Machinery and Equipment Wholesaling n.e.c
5910- Internet Service Providers and Web Search Portals		3800- Commission based wholesaling n.e.c
5921- Data Processing and Web Hosting Services		4221- Electrical, Electronic and Gas Appliance Retailing
5922- Electronic Information Storage Services		4229- Other Electrical and Electronic Goods Retailing
7000- Computer System Design and Related Services		4242- Entertainment Media Retailing
		4273- Antique and Used Goods Retailing
		4279- Other Store Based Retailing n.e.c.

All activity in-scope	Majority of activity in-scope	Some activity in-scope
		4310- Non Store Retailing
		4320- Retail Commission-Based Buying and/or Selling
		6923- Engineering Design and Engineering Consulting Services
		6639- Other goods and Equipment Rental and Hiring n.e.c
		6640- Non-Financial Intangible Assets (Except Copyrights) Leasing
		6910- Scientific Research Services
		8101 Technical and Vocational Education and Training
		8102- Higher Education
		8219- Adult Community and Other Education n.e.c
		9209- Other Gambling Activities
		9421 Domestic Appliance Repair and Maintenance
		9422- Electronic (except Domestic Appliance) and Precision Equipment Repair and Maintenance
		9429- Other Machinery and Equipment Repair and Maintenance



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**

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**5<sup>TH</sup> WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, GENEVA, 11-13 OCTOBER 2006**

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**FOR INFORMATION**

**SOURCE:** National Information Society Agency, Korea (Rep.)

**TITLE:** ICT Core Statistics in Korea

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# ICT Core Statistics in Korea

*Presented by : Kwangmi Noh*

*National Information Society Agency(NIA)*

**Population :** Korea National Statistical Office newly re-estimated to reflect rapid decline of birth rate in December 2004.

(unit : 1,000 persons)

Classification	1999	2000	2001	2002	2003	2004	2005
populations	46,616.68	47,008.11	47,353.52	47,615.13	47,849.23	48,082.16	48,294.14

Source: National Statistical Office

**GNI and GDP :** GNI and GDP is revised. Because Korea adopted 1993 United Nations System of National Account(SNA) and changed reference year into 2000 year on March 2004 by Bank of Korea

(unit : billion won, billion \$)

Classification		2000	2001	2002	2003	2004	2005
GNI	Won	576,160.0	621,027.9	685,069.0	725,420.3	781,174.2	805,885.8
	US \$	509.6	481.1	547.5	608.6	682.4	786.8
GDP	Won	578,664.5	622,122.6	684,263.5	724,675.0	779,380.5	806,621.9
	US \$	511.8	482.0	546.9	608.0	680.9	787.5

Source: Bank of Korea

## Main fixed telephone lines

(unit : 1,000 lines, 1,000 persons)

Classification	1999	2000	2001	2002	2003	2004	2005(p)
Main lines	25,619.89	25,863.10	25,791.57	25,735.04	25,127.61	23,567.74	23,745.21
Main lines per 100 inhab.	54.96	55.02	54.48	54.02	52.51	49.02	49.17

Source: Korea Association of Information & Telecommunication (KAIT)

※ The National Information Society Agency(NIA) is the new name of the National Computerization Agency(NCA)

## Mobile phone subscribers

(unit : 1,000 persons)

Classification	1999	2000	2001	2002	2003	2004	2005(p)
Subscribers	23,442.72	26,816.40	29,045.60	32,342.49	33,591.76	36,586.05	38,342.32
Subscribers per 100 inhab.	50.29	57.05	61.35	67.89	70.09	76.08	79.39

Source: Korea Association of Information & Telecommunication (KAIT)

## Internet Users and Usage Rate

(unit : 1,000 persons)

Classification	1999	2000	2001	2002	2003	2004	2005
Internet User	10,860	19,040	24,380	26,270	29,220	31,580	33,010
Internet Usage rate	22.4	44.7	56.6	59.4	65.5	70.2	72.8

Source: National Internet Development Agency of Korea(NIDA)

Note: Internet Usage rate is calculated the number of internet users divided by number of people over 6 years old. Internet usage rate of the aged 3 or older is 71.9%, and the number of Internet users is 33.88 million persons

## Broadband subscribers

(unit : 1,000 persons)

Classification	2001	2002	2003	2004	2005
Broadband	7,805.52	10,405.49	11,178.50	11,921.44	12,190.71
Subscribers per 100 inhab.	16.5	21.8	23.4	24.9	25.4

Source: Ministry of Information and Communication

## Household online

Classification	2000	2001	2002	2003	2004	2005
Household online ratio (%)	70.1	82.3	89.3	91.5	92.8	92.7

Source: National Internet Development Agency of Korea(NIDA)

Note: households online ratio = households with internet access/households equipped PC

## PCs Supply

(unit : 1,000 PCs)

Classification	2000	2001	2002	2003	2004	2005
Number of PCs(Total)	18,615	22,495	23,502	24,248	24,857	25,685
PC penetration rate(%) for total population	39.6%	47.5%	49.3%	50.7%	51.7%	53.2%

Source: National Information Society Agency (NIA), National Internet Development Agency of Korea(NIDA)



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**SOURCE:** Telecommunication Authority, Turkey

**TITLE:** Data Collection by TA Turkey

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## **Data Collection by TA Turkey**

**Background Paper – ITU's World Telecommunications/ICT  
Indicators Meeting, Geneva, October 2006**

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## 1. Turkey In A Nutshell

TURKEY - Some facts	
Capital	Ankara
Language	Turkish
Population	72.520.000
Country size:	773,473 sq km
GDP per capita	4.023 €
Consumer Price Index	7.72 %

Map of Turkey



## 2. Telecommunication Authority (TA)


Telecommunication Authority (TA) was founded by the Law No. 4502 of January 27, 2000 amending the Telegram and Telephone Law No. 406 and Radio Devices Law No. 2813. The Authority is a public organization with private budget and administrative and financial autonomy, incorporated so as to implement the powers and responsibilities conferred by Laws and perform other tasks assigned. The Board is independent in performing his tasks. The Authority is related to the Ministry of Transportation.

TA executes among others its tasks under law to establish a dynamic telecommunication sector based on fair and free competition and to protect consumer rights.


Mission of the Telecommunications Authority:

- regulating and supervising the telecom market,
- monitoring the technical innovations,
- protecting competition,
- ensuring compliance with international norms,
- protecting consumers,
- observing the developments and security policies.


### 2.1 Liberalization Process Overview

 1994:

- Two GSM 900 mobile operators (Turkcell and Telsim) and cable TV operators started operation under revenue sharing agreements with Türk Telekom.

 1997:

- Turkey made commitments under the GATS agreement on basic telecommunication services to liberalise the Turkish basic telecommunication services market by 2006.

 1998:

- Revenue sharing agreements of the two mobile operators were transformed to 25-year licences issued by the Ministry of Transport.



2000:

- Telecommunications Authority was established as the sector specific regulatory body.
- GSM 1800 licences were granted.



2004

- Türk Telekom's monopoly rights concerning voice telephony and establishment and operation of telecommunications infrastructure abolished.
- Market liberalised.
- 43 long distance telephony service providers authorized.
- Foreign ownership restriction at Türk Telekom was abolished.



2005 and 2006:

- Cable TV services of Türk Telekom structurally separated.
- Infrastructure licenses granted.
- Cable TV licenses granted.









### **3. Telecommunications/ICT Statistics in Turkey**

#### ***TELECOMMUNICATIONS STATISTICS***

##### **3.1 Telecommunication Authority**

TA collects a considerable amount of data on the supply side, particularly from the operators in the Turkish telecommunications sector. This includes;

-  Number of subscribers
-  Traffic
-  Tariffs
-  Infrastructure
-  Employment
-  Revenue and Investment

Data collection in TA is coordinated and executed by Sectoral Research and Strategies Department. The core activity of the department is to collect information to enable TA to perform his role effectively. Another responsibility of the department is providing data for market informations and Annual Report and liaising with international and regional telecommunications organizations like ITU, OECD and EUROSTAT.

##### **3.1.1 From operators**

The process of data collection from telecom operators in Turkey began at the end of 2001. Questionnaires have been prepared by the coordination of all Departments in TA and sent out to operators. There are three type of questionnaires (monthly, quarterly and annually). Operators are obliged to send them back by the end of the next month following the end of the period. Questionnaires were in Microsoft Excel files and stored in Excel files after filling out by operator. But in 2005, studies have begun to introduce an online data collection system. A user name and a password have been given to the operators that enable them to log in to the system. After log in process, they saw the questionnaires in HTML format that they have to fill in. In early 2006, trial period has started with only Turk Telekom and 3 mobile operators (Turkcell, Vodafone and Avea). (See Annex B)

### 3.1.2 From end users

To understand and improve Turkishs' degree of awareness and understanding of telecommunications services, attitudes, and their rights and options; TA is now conducting a survey through an independent company to monitor the industry trends. The results of the survey will be published on our web site ([www.tk.gov.tr](http://www.tk.gov.tr)). TA also plans to conduct a business survey in the near future, too.

### 3.1.3 Users of TA Data

- TA staff
- Other government agencies
- Other regulators
- Telecom operators
- Students
- International bodies such as the ITU, OECD, EC, EUROSTAT etc.

### 3.1.4 Dissemination

Stats on TA's web site ( <http://www.tk.gov.tr/Yayin/istatistikler/istatistikler.htm> )




Annual Report (<http://www.tk.gov.tr/eng/pdf/eng-2005.pdf>)

International Organizations (ITU, OECD, EUROSTAT questionnaires)

## ***ICT STATISTICS***

### 3.2 Turkish Statistical Institute (TURKSTAT)

The main responsible body for collection of statistical information on telecommunications and ICT statistics in Turkey is TURKSTAT. TURKSTAT undertakes following ICT surveys:

-  Household Survey on ICT Usage
-  Enterprises Survey on ICT Usage
-  Technological Innovation Survey

 Research and Development Activities Survey

## **ANNEX – MARKET OVERVIEW**

Market information published in 2005 Annual Report of Telecommunication Authority.

## **2. TELECOMMUNICATION SECTOR IN TURKEY**

### **2.1. Operators and Provided Services**

Authorization efforts of the Authority were also continued in 2005 and the number of operators, which was 192 in 2004, was increased to 218. 2 Authorization Agreements were signed regarding “satellite and cable TV services” and “maritime communications and cruise safety communications services”. 1 Authorization Agreement was signed as Concession Agreement as required by legislation. 1 operator was authorized for the provision of satellite platform services, 5 operator was authorized for the provision of satellite telecommunications services, 7 operators were authorized for the provision of data transmission over terrestrial lines, 1 operator was authorized for the provision of GMPCS services, 1 operator was authorized for the provision of long distance telephony services, 43 operators were authorized for the provision of PAMR services and 16 operators are registered in the scope of General Authorization in order to be internet service provider. As the number of operators in the sector has increased, clients started to make use of several services for cheaper prices and in a more comfortable manner.

#### **2.1.1. Satellite Operators**

Satellite operators are categorized into two groups, namely operators providing satellite telecommunications services and satellite platform operators. Satellite telecommunications services cover the performance of unidirectional and bidirectional data transmission via satellites and earth stations. As of 31 December 2005, number of those operators supplying this service is 24. Totally, 413.160,91 YTL of authorization charge was recorded as revenue for the Treasury.

On the other hand, Satellite Platform Operation is realized through the combination and multiplication of analog or digital signals from various transmission media and finally their transmission to subscribers in form of digital packages via satellites. Among the services introduced in Satellite Platform Operation are high-speed Internet access, broadband data transmission, digital TV and radio broadcast, and multimedia applications. As of 31 December 2005, number of those operators supplying this service is 1. For Satellite Platform Service, no authorization was given in 2005. In 2005 totally 76.169,75 YTL of authorization charge was recorded as revenue for the Treasury.

#### **2.1.2. Operators Providing GMPCS Mobile Telephony Service**

As of 31.12.2005, there are 5 operators supplying GMPCS Mobile Telephony Service, which is described as a telecommunications service that directly provides users with services covered by GMPCS MoU (Memorandum of Understanding) over a group of satellites, either existing or being planned, whose position and operating frequencies are specified and designated by International Telecommunications Union (ITU), which can be fixed or mobile, broadband or narrowband, global or non-global, geostationary or non-geostationary. Totally 190.424,15 YTL of authorization charge for this service was recorded as revenue for the Treasury.

### **2.1.3. Operators Serving as Cable and Wireless Internet Service Provider**

Operators serving as Internet Service Providers (ISP) provide the necessary infrastructure, hardware and software and supply Internet access service to the end-user. Business of an ISP can be expressed as transporting the users to local and international Internet backbones via computer equipment belonging to it and lines that it leases. Serving in accordance with service provision contracts already made with Turk Telekom.

ISPs in our country also perform their activities based on a “General Authorization” like in developing countries and EU countries. Within this framework, as of 31.12.2005, there are 75 operators registered in the scope of General Authorization including 16 new operators which are registered in 2005. Totally 221.297,85 YTL for the said General Authorizations was recorded as revenue for the Treasury.

In addition, an amendment to the Authorization Implementing Regulation on Telecommunications Services and Infrastructures was made in order to be able to serve the internet service wirelessly, which is currently being served by General Authorization. Authorization of Cable and Wireless Internet Service Providing which is the annex to Authorization Implementing Regulation on Telecommunications Services and Infrastructures was published in the Official Gazette No. 25994 dated 15 November 2005.

### **2.1.4. Operators Providing Data Transmission over Terrestrial Lines**

Data Transmission over Terrestrial Lines means the transmission of data over terrestrial lines such as optical, copper, coaxial, etc. lines to the network termination points without treatment under any process. As of the end of 2005, in our country, there are 21 operators authorized to provide the said service. As a result of giving the said certificates, totally 318.047,23 YTL of authorization charge was recorded as revenue for the Treasury.

### **2.1.5. Operators Providing Long Distance Telephony Services**

Long Distance Telephony Services (LDTS) embraces the introduction of inter-provincial and/or international telephony service to the users over any telecommunications network and infrastructure belonging to the operators by use of any technology. In other words, operators can supply inter-provincial and/or international telephony service to the users over another fixed, mobile or developing network by any technology they wish to use. For LDTS, 1 company was awarded Telecommunications Licenses to provide Type C services. As a result of the authorizations, totally 877.294,41 YTL of authorization fee and was recorded as revenue for the Treasury.

### **2.1.6. Operators Providing PAMR Services**

PAMR Service covers a telecommunications service, which accommodates more than one closed user group within the same system by use of analog and digital technologies, consists of at least one repeater and adequate number of subscriber radio devices, involving the provision of unidirectional and/or bidirectional voice, data and optimized package data, message, image, etc. services to the subscribers, either cellular or non-cellular, and can be operated locally and regionally. As of 31.12.2005 there are 49 companies providing PAMR Services and 190.424,15 YTL of authorization charge was recorded as revenue for the Treasury

### 2.1.7. Electronic Certificate Service Providers

Following the completion of legislation works, E-Güven Corp., TÜRKTRUST Corp. and TÜBİTAK (The Scientific and Technical Research Council of Turkey) –UEKAE (The National Research Institute of Electronics and Cryptology) notified to the Authority to be electronic certificate service providers. After notifications, the Authority examined the documents provided and inspected the facilities of those three ECSPs. ECSPs straighten out nonconformities and/or infringement of any of the notification requirements determined by the Authority during the inspections and then commenced their operations.

*Table 2-1 The Notification Process of ECSPs*

ECSP	Notification Date	Assessment Date	Commencement Date
E-Güven Corp.	25.03.2005	12–13.05.2005 22.06.2005	24.06.2005
TÜBİTAK-UEKAE Public Certification Center	31.03.2005	26–27.05.205 28.06.2005	30.06.2005
TÜRKTRUST Corp.	13.05.2005	07–08.07.2005 14.07.2005	16.07.2005

### 2.1.8. Number of Operators

There is an increase in the number of licensed operators acting in the telecommunications sector of our country. Table 2-2 provides information on the number of licensed operators operating in our country.

*Table 2-2 Number of Licensed Operators*

Licensed Operators	2004 December	2005 December
Authorization Agreements	1	2
Concession Agreements	3	4
Satellite Platform Operators	3	1
Satellite Telecommunications Services Operators	23	24
Operators Providing GMPCS Mobile Telephony Service	5	5
Operators Performing Data Transmission over Terrestrial Lines	14	20
Internet Service Providers	91	74
Operators Providing Long Distance Telephony Services	43	40
Operators Providing Common Usage Radio Services	9	48
Total	192	218

As can be seen in Table 2-2, there are 218 licensed operators in our country as of December 2005. Therefore, depending on the market structure and investment variables, it is observed that the greatest number of licensed operators is observed in the Internet sector.

## 2.2. Telecommunications Indicators

### 2.2.1. PSTN Data for 2005

The Highest bid for 55% share of Türk Telekom was given by the Oger Telekom Common Enterprise with 6.650 billion \$ in 01.07.2005. The next step in the process has been taken with a concession agreement signed between TA and Türk Telekom by executing share transfer after Council of State Decision. The privatization therefore has proceeded successfully.

Showing a fast development since 1980s, in terms of both geographical availability and number of subscribers, PSTN has entered a slowdown process after the GSM services were introduced. Table 2-3 and Figure 2-1 provide information on the number of PSTN subscribers between 1995 and 2005.

*Table 2-3 Number of PSTN Subscribers*

Year	Number of Subscribers	Percentage of Increase (%)
1995	13.227.704	8,46
1996	14.286.460	8,00
1997	15.579.458	9,05
1998	16.806.982	7,88
1999	17.911.722	6,57
2000	18.395.171	2,70
2001	18.904.486	2,77
2002	18.890.000	-0,08
2003	18.916.721	0,14
2004	19.125.163	1,1
2005	18.997.669*	-0,66

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\*November 2005



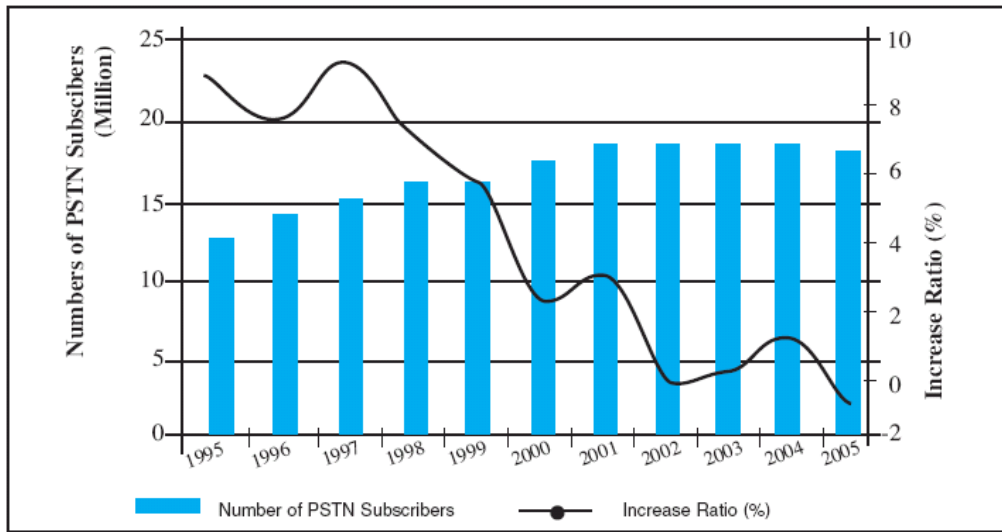


Figure 2-1 Number of PSTN Subscribers and Increase Rate (%)

As can be seen in Figure 2-1, between 1995 and 2001, average rate of increase in number of PSTN subscribers is about 7-8% per year. From 2001, it shows a horizontal trend and there is a 1% decrease in 2005. One of the reasons for this can be considered as the saturation in the market because penetration rate reached 27% (Table 2-4). Household telephone penetration rate reached 98%. Other reasons behind the horizontal trend may be increasing usage of mobile telephone services and LDTs

Table 2-4 PSTN Penetration Values

Year	Number of PSTN Subscribers	Telephone Penetration Values per Population (%)
1995	13.227.704	21,2
1996	14.286.460	22,4
1997	15.579.458	24,8
1998	16.806.982	26,3
1999	17.911.722	27,6
2000	18.395.171	28,0
2001	18.904.486	28,5
2002	18.890.000	27,1
2003	18.916.721	26,7
2004	19.125.163	27,0
2005	18.978.223	26,3*

\*Number of population for Turkey in 2005 was obtained from population projection tables of TÜİK.

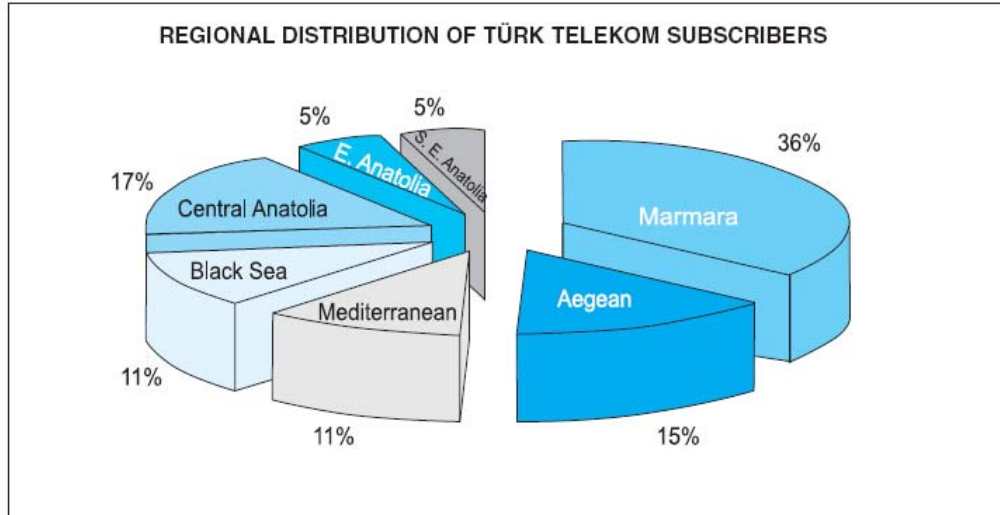


Although PSTN penetration rate is 50% in European Countries, we should consider household telephone penetration for Turkey instead. Family structure in Turkey is different from European family structure (number of average person in family). In this framework, in the future, it should be considered that increase in PSTN subscription has a close relationship with economic growth and the increase in number of new businesses and housing.

*Table 2-5 Regional Distribution of Türk Telekom Subscribers (December 2005)*

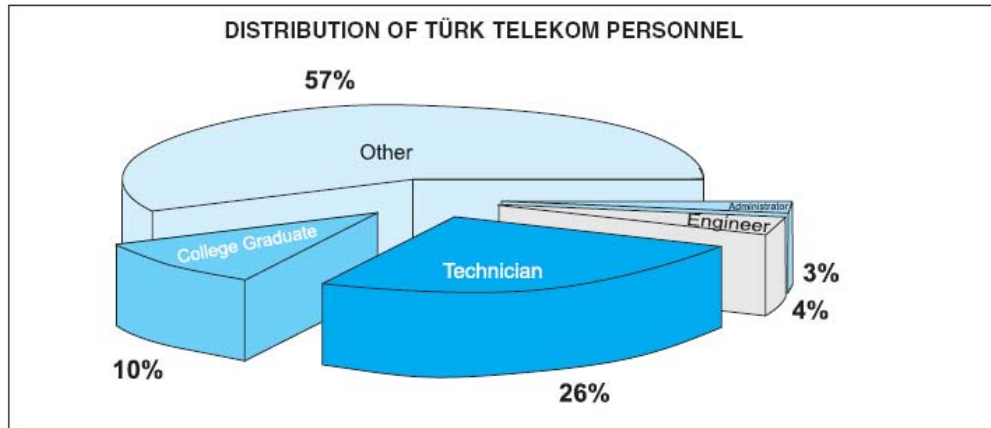
Regions	January	February	March	April	May	June	July	August	September	October	November	December
Marmara	6.788.761	6.780.408	6.783.300	6.780.396	6.786.801	6.784.827	6.763.532	6.746.085	6.749.433	6.747.772	6.741.997	6.735.096
Aegean	2.891.506	2.887.948	2.889.180	2.887.943	2.890.671	2.889.831	2.880.761	2.873.329	2.874.755	2.874.048	2.871.588	2.868.649
Mediterranean	2.188.897	2.186.204	2.187.137	2.186.200	2.188.266	2.187.629	2.180.763	2.175.138	2.176.217	2.175.681	2.173.819	2.171.594
Black Sea	2.089.488	2.086.918	2.087.808	2.086.914	2.088.885	2.088.278	2.081.723	2.076.353	2.077.384	2.076.873	2.075.095	2.072.971
Central Anatolia	3.329.316	3.325.220	3.326.638	3.325.214	3.328.355	3.327.387	3.316.943	3.308.387	3.310.029	3.309.215	3.306.382	3.302.998
Eastern Anatolia	929.830	928.686	929.082	928.684	929.561	929.291	926.374	923.985	924.443	924.216	923.425	922.480
S.E. Anatolia	911.643	910.521	910.910	910.520	911.380	911.115	908.255	905.912	906.362	906.139	905.363	904.437
Total	19.129.441	19.105.905	19.114.055	19.105.871	19.123.920	19.118.357	19.058.352	19.009.190	19.018.624	19.013.944	18.997.669	18.978.223

As it can be concluded from Table 2-5, subscriber density is maximum for the Marmara Region, which receives the largest share from gross national product, and it is minimum for the Eastern and South-Eastern Anatolian Regions which receive the least share. Figure 2-2 shows distribution of Türk Telekom subscribers across regions.



*Figure 2-2 Regional Distribution of Türk Telekom Subscribers*

Information related to the personnel distribution is given in Figure 2-3.



*Figure 2-3 Distribution of Türk Telekom Personnel*

When the personnel structure of Türk Telekom is analyzed, it is worth considering that the number of engineers in the total personnel is low. Compared to incumbent operators abroad, it is seen that Türk Telekom operates with a lower number of engineers. Total personnel of Türk Telekom in 2001 were 69.500, and as of September 2005 this number decreased to 53.608. This decrease in the number of personnel is considered to be balanced with increase in efficiency. After privatization, Türk Telekom has been trying to keep its personnel, especially technical personnel.

## Cable TV

As can be seen from the Figure 2-4, rate of capacity utilization in cable TV sector is less than 50%. So it is seen that network is not used efficiently. In recent years, the increase in the number of subscribers is low. If the status continues, it is hard to expect any improvement on the network efficiency in the next period. One of the major factors affecting this is that Türk Telekom runs two networks (Cable TV-Fixed Network) simultaneously both of whom can be thought as rivals. Finally, there are two main reasons for expecting important improvements. First one is, Türksat A.Ş. has acquired Cable TV network since April 2005, and the second and more important one is license of Cable Platform Service will be awarded.

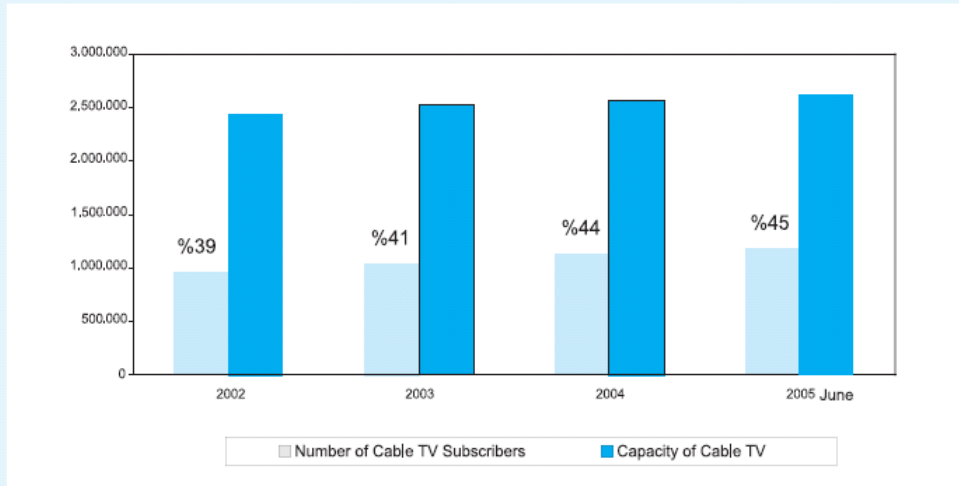


Figure 2-4 Data of Cable TV Services

### 2.2.2. GSM Data for 2005

GSM sector in our country shows a great development like it does all over the world. Turkey met with GSM in 1994 with two operators entering the market. The number of subscribers which was 80.000 in 1994, increased by 550 times and reached 44 million in 11 years (Figure 2-5). The estimated number of subscribers by the year 2011, made by using past changes of subscribers and with the assumption of the past upper limit of subscribers density of Turkey will be 70% in future, is given in Figure 2.5. The most important reason for taking 70% as an upper limit of subscribers' density is that, the average of Europe is about 80%.

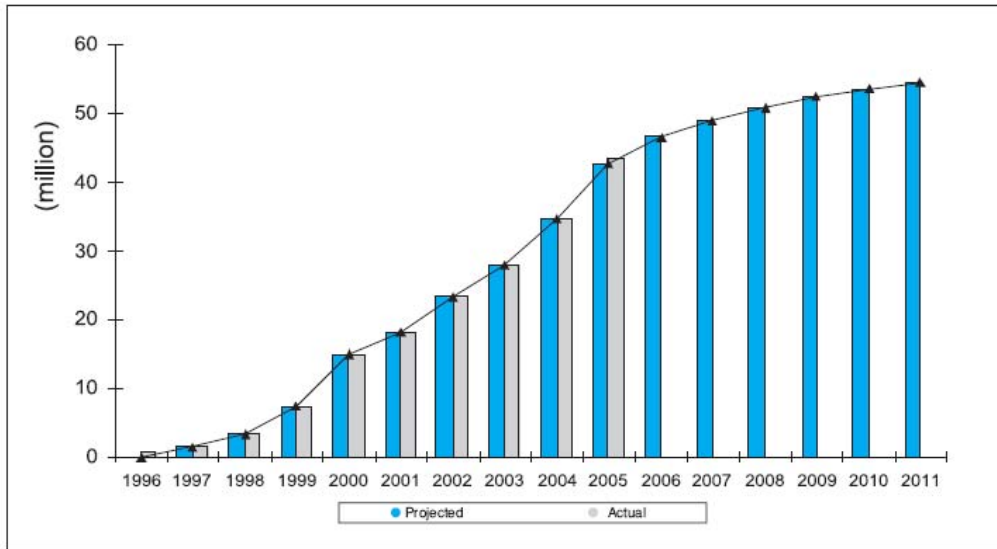


Figure 2-5 Number of GSM Subscribers in Our Country and Projection to 2011

Especially, at the end of 1980s, the wave of change increased in GSM sector. Telecommunication industry attracted not only domestic investors but also foreign ones. In this atmosphere, with the effect of the competition occurred after two new GSM licenses were given, the number of subscribers in GSM sector increased 24% between 2000 and 2005 and reached to today's number. Figure 2-6 and Table 2-6 provide information on number of subscribers and rate of increase in previous years.

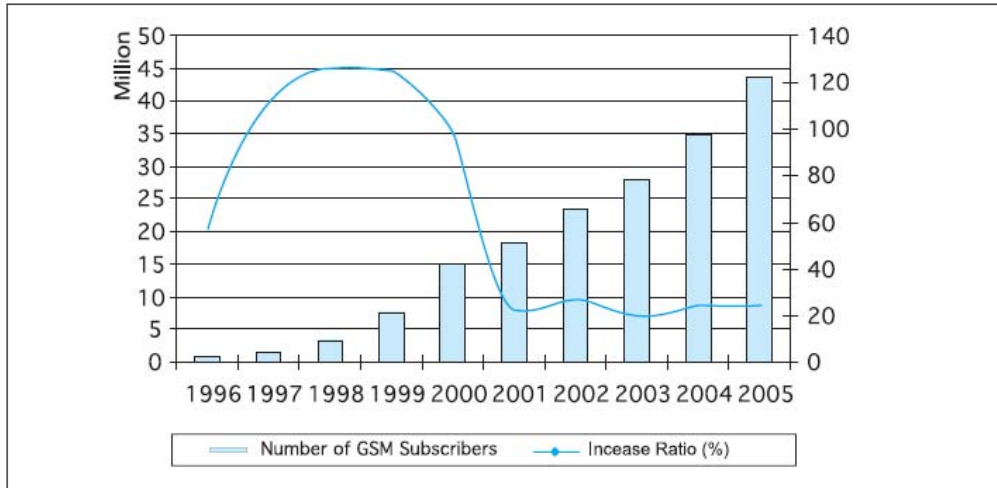


Figure 2-6 Number of GSM Subscribers

Table 2-6 Number of GSM Subscribers

Year	Number of Subscribers	Percentage of Increase (%)
1996	692.779	58,53
1997	1.481.323	113,82
1998	3.360.000	126,82
1999	7.560.000	125,00
2000	14.970.000	98,02
2001	18.228.598	21,77
2002	23.323.113	27,95
2003	27.887.535	19,57
2004	34.707.549	24,46
2005	43.608.965	25,64

Aycell and Aria entered market in 2001, during the period of the economic crisis. The market size exceeded 3.46 billion USD in 2000 reduced to 2.8 billion USD in 2001. Despite the recession in the market, the competition caused declines in prices after the entrance of new operators. In this period, with the influence of economic crisis, there has been a transition from postpaid subscribers to prepaid subscribers, and share of prepaid subscribers in the market rose to 78%. Transition from postpaid to prepaid had an important effect on decreases in revenues per subscribers.

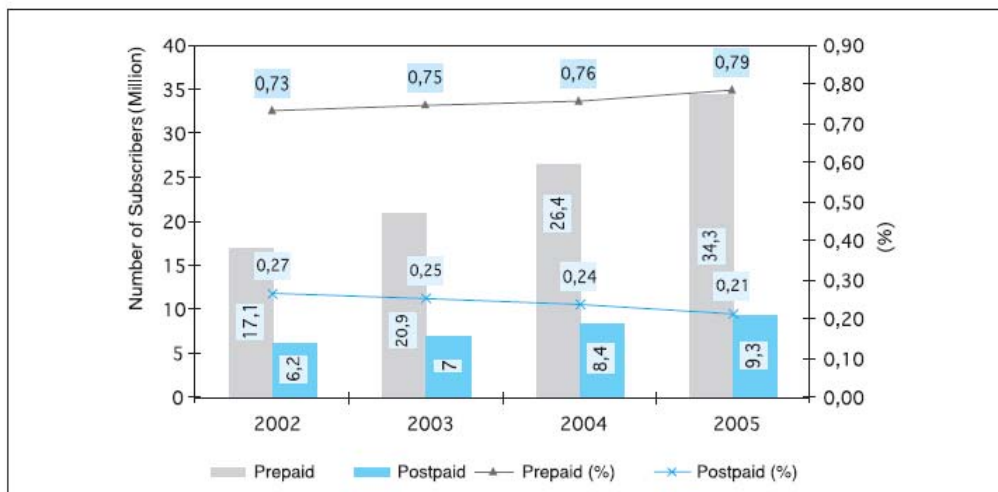


Figure 2-7 Distribution of Prepaid and Postpaid Subscriber of GSM

In our country the number of subscribers reached to 44 million by the end of 2005. GSM penetration rate in EU countries is about 80%, however in our country, the rate is 60%. Also the market revenue is not at the desired level. While the number of subscribers increased nearly 10 times in the six years period between 1998 and 2004, the revenues of GSM increased only 3.9 times. This means the revenues per user has decreased.

While the revenue per user was 30-40 USD in 1998, as can be seen in Figure 2.6 in 2004 it decreased to 12-13 USD because of both increased competition in the market and additional tax burdens imposed after 1999.

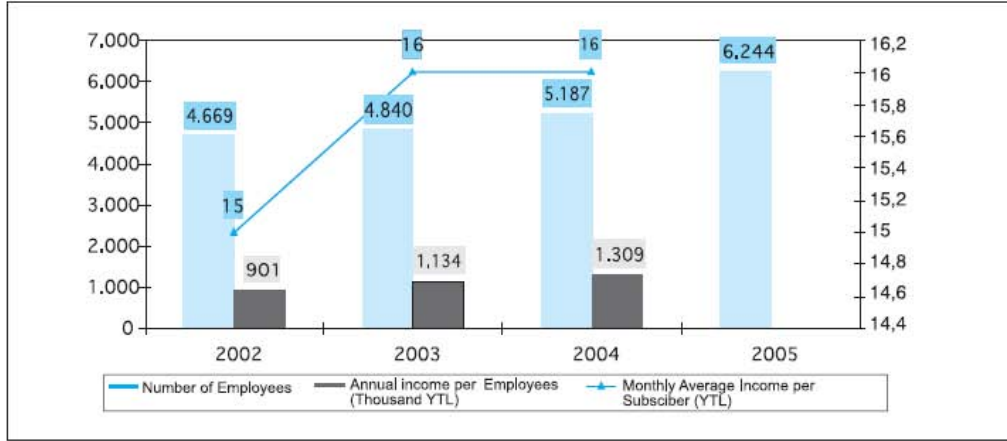


Figure 2-8 Number of Employees in GSM Companies, Annual Income per Employees and Average Monthly Revenues per Subscribers

Figure 2-9 and 2-10 compare SMS numbers in 2004 and 2005 and distribution of SMSs per month for 2005. The total number of SMSs in 2005 has increased 5 times compared to 2004 and reached to 16.728 million.

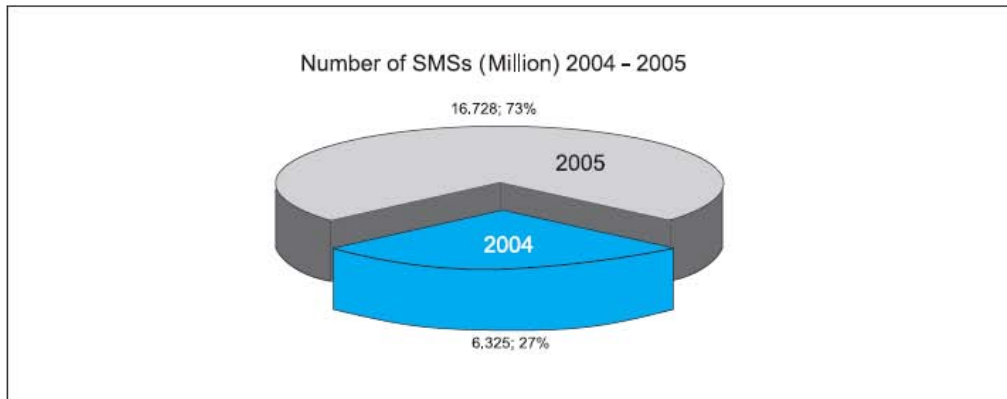


Figure 2-9 Numbers of SMSs in 2004 and 2005



When we analyze the distributions of SMSs by months; in 2005, there is an increase especially in spring and summer. By the religious holidays in autumn and winter the demand for SMSs also increases. So, there is a regular increase in these periods, too. Increase in the use of SMS can be explained by young user profile and diffusion of value added services using SMS.

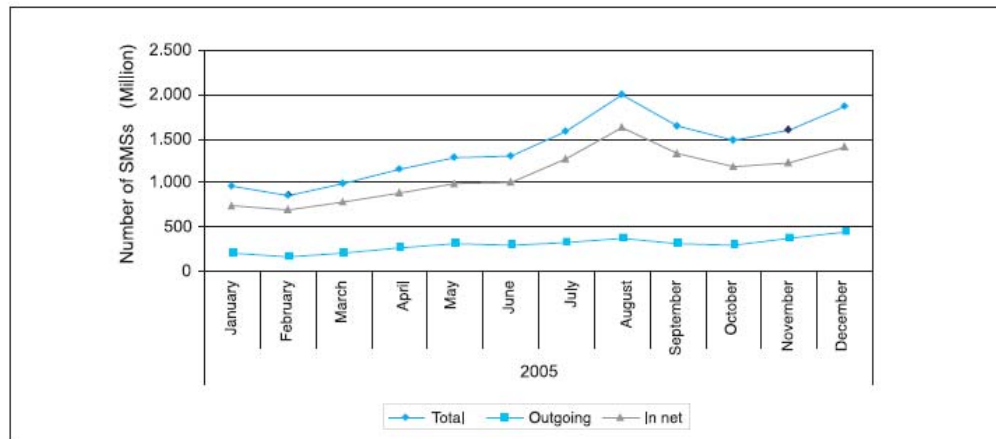


Figure 2-10 Distribution of Numbers of SMSs regard to Months

One of the major factors affecting coverage area and quality of service in GSM sector is the number of base stations. Figure 2-11 and 2-12 provide information about number of base stations and distributions according to years and regions. Increase in coverage area has a direct proportion with the increase in GSM base stations. It is also important for increasing quality of services.

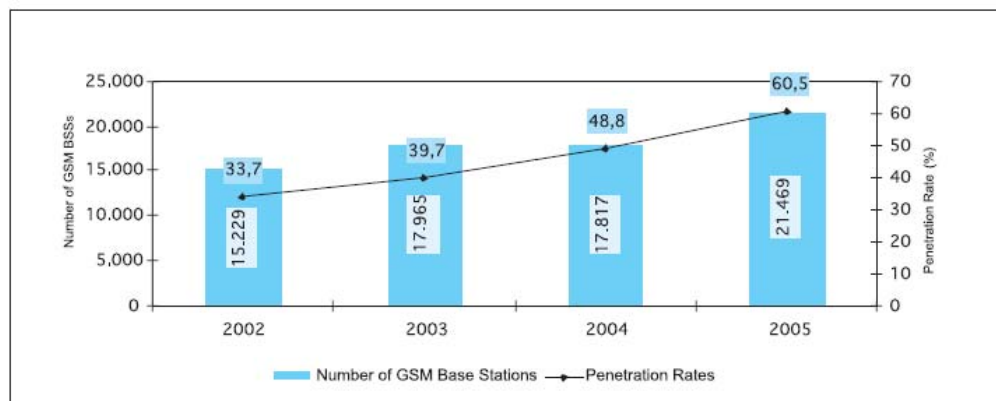


Figure 2-11 Number of GSM Base Stations, GSM Penetration Rate and Relationship between Them

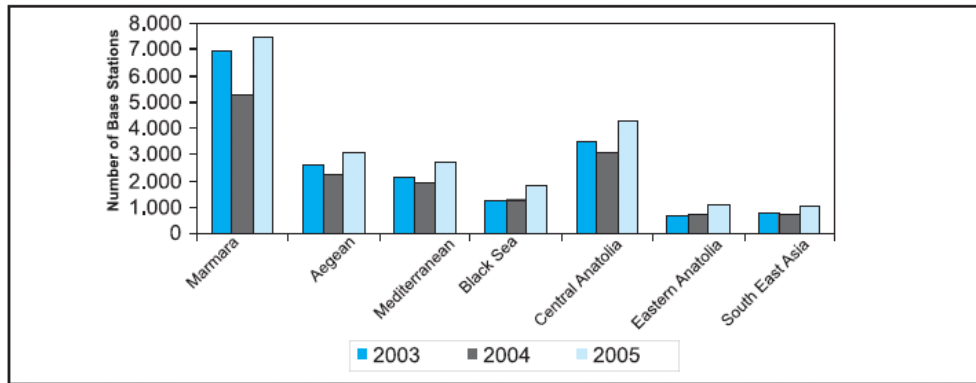


Figure 2-12 Distribution of the Base Station in respect of Years

At the end of 2005, number of base stations reached a total of 21.469 across the country, 7.477 of which are in Marmara, 4.284 in Central Anatolia and 3.52 in Aegean Region.

### 2.2.3. Comparison of GSM, PSTN and LDTS

In Figure 2-13, exchange of the number of PSTN and GSM subscribers between 1994 and 2005 can be seen. According to time, interception point of two curves is on February 2002. After this time, the number of GSM subscribers starts to increase at a faster rate whereas the number of PSTN subscribers shows a slow increase.

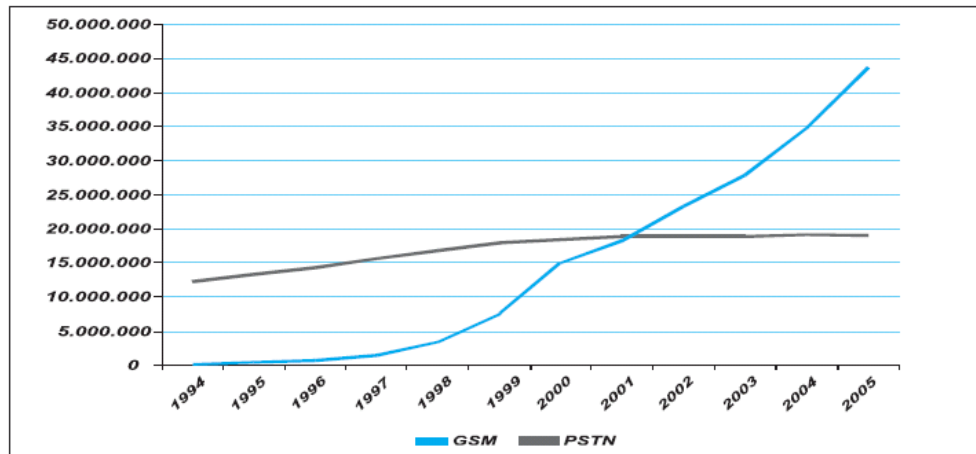


Figure 2-13 Exchange of Number of PSTN and GSM Subscribers

In 2001, due to fluctuations observed in economy, a decrease was observed in revenues of GSM operators. However, due to developments in economy and the dynamic structure of the sector, losses in revenues have been recovered in a short period. Table 2-7 provides information related to revenues and investment of telecommunications sector between 2000 and 2005.



*Table 2-7 Information related to Revenues and Investment of Telecommunications  
Sector (Billion USD)\**

(Billion \$)	2000	2001	2002	2003	2004	2005
<b>Fixed Revenue</b>	4,63	3,86	3,31	4,53	6,15	5,54
<b>Mobile Revenue</b>	3,89	1,99	2,43	3,06	4,77	6,43
<b>LDTs Revenue</b>	-	-	-	-	-	0,07
<b>Other</b>	-	-		0,43	0,57	0,33
<b>Fixed Investment</b>	0,63	0,36	0,19	0,23	0,37	0,35
<b>Mobile Investment</b>	2,89	2,59	1,9	1,83	0,65	1,04
<b>LDTs Investment</b>	-	-	-	-	-	0,01
<b>Total Revenue</b>	8,52	5,85	5,74	8,02	11,5	12,73
<b>Total Investment</b>	3,52	2,95	2,09	2,06	1,02	1,4

In Table 2-7, a decreasing trend is observed in investment level beginning from 2000, and as new GSM operators started to operate in the sector in 2001, an investment above the total revenues in the sector was made. In 2002, about 78% of annual revenue of GSM operators was converted into investment, whilst in 2003 rate of investment/revenue was at the level of 60%. Investments decreased considerably in 2004 to 0,65 billion USD. Investment revenue rate went down the level of 13,5 percentage. Alike GSM, PSTN investments were in low level, changing between 0.2 and 0.6 billion USD by years.

Although in a period, in which world telecommunication sector had difficulties and Turkey had a crisis, number of the subscribers continued to increase. This must be considered as a result of dynamic structure of the sector and efficient competition. Also in the next period, it is estimated that shares of the mobile service revenues in the total telecommunication service revenues will increased much more. The main reasons on this estimation rely on openness of penetration rates to the growth and density of young population in Turkey. Nonetheless, rate of increase isn't sufficient alone for the growth of the market. Hence, increase in GDP is an important factor for the growth of market.

Moreover, operation environment will be shaped again after the monopoly in PSTN services has disappeared and liberalization of market has been provided. We have to see these improvements as a part of natural development process for Turkey. On the other hand, according to concerned judgments of the Banking Law, Telsim Mobile Telecommunication Services A.Ş., whose management passed to Saving Deposit Insurance Fund, was sold to Vodafone for 4.5 billion USD. This was another development for enhancement of the competition.

After publishing annex about the Ordinance on LDTs, authorization of LDTs has been started at May 17, 2004. 44 LDTs operators were authorized since January 2006. Four operator's authorizations cancelled because one of the operators broke the judgments of Ordinance, and three of them demanded their cancellation. 26 operators made an interconnection agreement with other operators for providing services. 24 of these operators made an agreement with Türk Telekom, 24 of those operators made an agreement with Turkcell and Telsim for call termination and carrying traffic. 13 of operators made an agreement for the LDTs-LDTs interconnection between each other. Moreover, one of the operators made agreements with GMPCS operator for the LDTs-GMPCS interconnection.

\*Average exchange rate of US Dollar is used in calculations.

## Information Society and Internet

Nowadays, countries are racing to become information societies. They develop policies, strategies and projects about “diffusion of internet”, “increasing computer literacy”, “information sharing”, “begin on information society”, etc. Broadband access, known as High-Speed internet, is an important requirement for information society. Broadband access carries on its importance in most of the developed and developing countries. So, its importance can not be denied for Turkey that experiences the process of integration with world and information society.

Broadband access can be provided by some technologies. Cable Internet and ADSL (Asymmetric Digital Subscriber Line) are among the leading technologies. In Turkey, Broadband services are provided commonly by ADSL and Cable Internet and other technologies.

Considering that in OECD countries broadband penetration is about 12 percent, Turkey has a low penetration rate which is about 2%. But, in the recent years, number of ADSL subscribers has increased significantly in 2002, the number of ADSL subscribers was about 2.999 and was over 1.539.477 subscribers by the end of 2005 (Table 2-8). Asymmetric structure of ADSL is found to be one of the most convenient applications for subscribers who desire to use Internet or unidirectional data transfer. ADSL ensures faster access to Internet, transfer of higher resolution images and telephone speeches over the copper cables at the same instant. Some of the important reasons for the increase in ADSL subscribers in our country are; the new investments of Türk Telekom in its infrastructure, effectiveness of ADSL technology in meeting the customer needs and reasonable levels in charge tariffs for the service.

After publishing annex about the Ordinance on LDTS, authorization of LDTS has been started at May 17, 2004. 44 LDTS operators were authorized since January 2006. Four operator's authorizations cancelled because one of the operators broke the judgments of Ordinance, and three of them demanded their cancellation. 26 operators made an interconnection agreement with other operators for providing services. 24 of these operators made an agreement with Turk Telekom, 24 of those operators made an agreement with Turkcell and Telsim for call termination and carrying traffic. 13 of operators made an agreement for the LDTS-LDTS interconnection between each other. Moreover, one of the operators made agreements with GMPCS operator for the LDTS-GMPCS interconnection.

*Table 2-8 Number of ADSL Subscribers in Years*

Years	Number of Subscribers
2002	2.999
2003	56.624
2004	452.398
2005	1.539.477

When we consider it from Cable Internet, in other countries there is a significant improvement in Cable Internet technology like in ADSL. But in Turkey, there is no improvement in Cable Internet in parallel with ADSL services. Number of Cable Internet subscribers was 31.729 by the end of October.

As of the end of 2005, in our country, there are 74 operators licensed to provide Internet Service. As it is the case for the rest of the world, ISPs, in our country, provide the necessary infrastructure, hardware and software, and supply access and content over Internet to the end-user.

In our country, number of Internet users attained a continuously-increasing acceleration within 2000-2005. Number of users, being 2.5 millions in 2000, is estimated to exceed 16 million at the end of 2005. Table 2-9 provides information on the number of Internet users between 2000 and 2005.

*Table 2-9 Number of Internet Users in Years*

Years	Number of Users	Increasing Rate (%)
2000	2.500.000	25,00
2001	3.200.000	28,00
2002	4.300.000	34,38
2003	6.000.000	39,54
2004	10.220.000	70,33
2005	16.000.000	56,55

Despite the fast increase in number of Internet users in our country, it remains in low levels compared to developed countries. As can be seen in Table 2-9, rate of increase in use of Internet is 25,00% in 2000, 56,55% in 2005. The Internet user numbers increased 6,4 times between 2000 and 2005. The fact that the rates are in an upward trend is considered as an indication that the use of Internet will become more common in the medium term.

## ANNEX B – ONLINE DATA COLLECTION SYSTEM

TK-SAS - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: https://sas.tk.gov.tr/login.php

**TELEKOMÜNİKASYON KURUMU**

**Sektörel Araştırma ve Stratejiler Dairesi Başkanlığı**  
**Bilgi Yönetim Sistemi**

Kullanıcı adı: TURKCELL

Şifre:

Karakterler: M7FX6M

Şifre Hatırlatma

start

Microsoft Office ... TK-SAS - Microsoft In... TK-SAS - Microsoft In... untitled - Paint

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Pazartesi  
02.10.2006

TK-SAS - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address: https://sas.tk.gov.tr/html\_form\_yukle\_bekleyen.php

**TELEKOMÜNİKASYON KURUMU**

**Sektörel Araştırma ve Stratejiler Dairesi Başkanlığı**  
**Bilgi Yönetim Sistemi**

[Türkcell \[Çıkış\]](#)  
[\[Şifre Değiştirme\]](#)

[İşletmeciler](#) ▶ [Genel bilgi](#) | [Bekleyen formlar](#) | [İşletmecisi onay bekleyen formlar](#) | [Kullanıcı Bilgileri](#)

Form kodu	Form adı	Talep tarihi	Son yükleme tarihi	Durum	Yükleme durumu	Seçenekler
TK-SAS-25	GSM Abone Bilgi Formu	Eyl 18, 2006	Eki 6, 2006	BİLGİ BEKLİYOR	yüklemeye açık	<input type="button" value="Formu doldur"/> <input type="button" value="İşlemler"/>
TK-SAS-26	GSM Arabağlantı Ücretleri	Eyl 18, 2006	Eki 6, 2006	BİLGİ BEKLİYOR	yüklemeye açık	<input type="button" value="Formu doldur"/> <input type="button" value="İşlemler"/>
TK-SAS-27	GSM Trafik Formu	Eyl 18, 2006	Eki 6, 2006	BİLGİ BEKLİYOR	yüklemeye açık	<input type="button" value="Formu doldur"/> <input type="button" value="İşlemler"/>
TK-SAS-28	GSM Roaming Trafik Formu	Eyl 18, 2006	Eki 6, 2006	BİLGİ BEKLİYOR	yüklemeye açık	<input type="button" value="Formu doldur"/> <input type="button" value="İşlemler"/>
TK-SAS-29	GSM SMS Formu	Eyl 18, 2006	Eki 6, 2006	BİLGİ BEKLİYOR	yüklemeye açık	<input type="button" value="Formu doldur"/> <input type="button" value="İşlemler"/>

sayfa no 1

http://www.tk.gov.tr/

start

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Pazartesi  
02.10.2006





UNION INTERNATIONALE DES TÉLÉCOMMUNICATIONS

**BUREAU DE DÉVELOPPEMENT  
DES TÉLÉCOMMUNICATIONS**

**Document INF/030-F  
10 octobre 2006  
Original: français  
seulement**

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5<sup>ÈME</sup> REUNION SUR LES INDICATEURS DES TELECOMMUNICATIONS/TIC MONDIALES, GENEVE, 11-13 OCTOBRE 2006

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POUR INFORMATION

ORIGINE: ARPTC, D.R. Congo

TITRE: Etat des lieux du marché des télécommunications en RDC en 2005

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# **ETAT DES LIEUX DU MARCHE DES TELECOMMUNICATIONS EN RDC EN 2005**

**ARPTC**

**DIRECTION ECONOMIE ET  
PROSPECTIVES**

***Service Observatoire du marché  
et Prospectives***

**OCTOBRE 2006**

## **I. VUE D'ENSEMBLE**

### **1. CADRE REGLEMENTAIRE**

Pour s'aligner dans la marche du monde vers la troisième révolution, celle de l'information, la RDC s'est dotée de deux lois indispensables pour le développement harmonieux du secteur de télécommunications:

- ❖ LOI-CADRE N°013/2002 DU 16 OCTOBRE 2002  
SUR LES TELECOMMUNICATIONS EN  
REPUBLIQUE DEMOCRATIQUE DU CONGO
- ❖ LOI N°014/2002 DU 16 OCTOBRE 2002 PORTANT  
CREATION DE L'AUTORITE DE REGULATION DE  
LA POSTE ET DES TELECOMMUNICATIONS

Ainsi, les acteurs du secteur de télécommunications sont principalement:

❖ **le Ministère de la Poste et des Télécommunications :**

Il est appelé à concevoir , proposer au gouvernement et mettre en oeuvre la politique générale devant guider le développement du secteur

❖ **L'Autorité de Régulation de la Poste et des Télécommunications du Congo :** elle doit veiller principalement au respect des lois, règlements et conventions en matière de télécommunications; en outre, elle doit contribuer à définir et à adapter conformément aux orientations de la politique gouvernementale, le cadre juridique général dans lequel s'exercent les activités du secteur.

❖ **Les opérateurs**

En RDC, les opérateurs du secteur de télécommunications se répartissent en trois grandes catégories:

**I. LES OPERATEURS DE LA TELEPHONIE FIXE:**

OPERATEURS	Tél. Fax	Adresse Physique	E-mail	SITE WEB
SOGETEL	243 23 42 967 243 23 42 206	743, Av. Mama Yemo/ Lubumbashi	dg@sogetel.cd	www.sogetel.cd
CONGO KOREA TELECOM	243 511 0020 243 511 0005	36, Bld du 30 juin	ckt@ckt.cd	www.cktele.com
OCPT	243 12 20 115 243 12 21 885			



## II. LES OPERATEURS DE LA TELEPHONIE MOBILES :

OPERATEURS	Tél. Fax	Adresse Physique	E-mail	SITE WEB
CELTEL CONGO	243 996014900 243 999900101	1, croisement av. Tchad et Bas Congo/Kinshasa Gombe	info@cd.celtel.com	www.celtel.com
VODACOM	243 813131000 243 813131405	3157, Bld du 30 juin, Building Gulf Oil Kinshasa Gombe	vodacom@vodacom.cd	www.vodacom.cd
OASIS	243 890 1000 243 890 1001	Bld du 30 juin, Immeuble BCDC, 12ème Niveau	tumba@bob@raga.net	
CONGO CHINE TELECOM	243 8412 345 243 8423 888	8, av. Du port, Kinshasa/Gombe	Wang.xiangguo@zte.com.cn	<a href="http://www.zte.com.cn/cct">www.zte.com.cn/cct</a> <a href="http://www.cct.cd">www.cct.cd</a>

## III. FOURNISSEURS D'ACCES INTERNET (F.A.I)

NUM	OPERATEURS
1	SOGETEL
2	CONGO KOREA TELECOM
3	AFRICANUS
4	RAGA
5	INTERCONNECT
6	HITEC (Roffe Congo)
7	AFRINET
8	SATEL-KIN
9	MICROCOM
10	SAPROCOM
11	RUTEL CONGO

## **II. COLLECTE DES DONNEES DU SECTEUR DE TELECOMMUNICATION**

### **ORGANE CHARGE DE LA COLLECTE**

EN RDC, LA COLLECTE DES DONNEES DU SECTEUR DES TELECOMMUNICATIONS EST CONFIEE A L'ARPTC.

L'ARTICLE 4 DE LA LOI N°014/2002 DU 16 OCTOBRE 2002 PORTANT CREATION DE L'ARPTC, DE L'ALINEA 1 A 7, STIPULE CECI:

” Dans le but d'exercer son pouvoir effectif de contrôle, l'Autorité de Régulation peut procéder aux visites des installations, mener des enquêtes et des études, réaliser des expertises ainsi que recueillir toutes les données nécessaires requises à cette fin.”

## **III. PROCEDURE DE COLLECTE**

### **➤ FORMULAIRES**

UN FORMULAIRE PAR SEGMENT DE MARCHE EST ETABLI SUR BASE DES INDICATEURS EXAMINES A GENEVE ET DU QUESTIONNAIRE DE L'UIT.

### **➤ TRANSMISSION**

LA TRANSMISSION DU FORMULAIRE EST FAITE SUR BASE D'UNE LETTRE D'ENVOI ADRESSEE A CHAQUE OPERATEUR DU SEGMENT DE MARCHE CONCERNE.

### **➤ DELAI DE RECUPERATION**

UN DELAI DE 45 JOURS EST ACCORDE AUX OPERATEURS POUR RETOURNER LE FORMULAIRE DUMENT REMPLI ET SIGNE A L'ARPTC

➤ **PERIODICITE**

LA RECOLTE DE DONNEES EST TRIMESTRIELLE;  
CEPENDANT, TOUTE AUTRE INFORMATION PEUT FAIRE  
L'OBJET D'UNE DEMANDE PONCTUELLE EN CAS DE  
NECESSITE.

## **IV. DIFFICULTES RENCONTREES**

LA PRINCIPALE DIFFICULTE RENCONTREE EST LE NON  
RESPECT DU DELAI OU LA NON TRANSMISSION DES DONNEES  
A L'ARPTC PAR CERTAINS OPERATEURS

## **V. SOLUTION**

POUR LE NON RESPECT DU DELAI, L'ARPTC ADRESSE UNE  
LETTRE DE RAPPEL OU ENVOIE QUELQUES REGULATEURS EN  
MISSION DE RECUPERATION CHEZ L'OPERATEUR CONCERNE.

EN CAS DE NON TRANSMISSION DE DONNEES, L'OPERATEUR  
CONCERNE EST D'ABORD INVITE A L'ARPTC;  
SI LA SITUATION PERSISTE L'ARPTC LUI ADRESSE UNE  
LETTRE DE MISE EN DEMEURE.

## **VI. STATISTIQUES DISPONIBLES**

### **A. TELEPHONIE MOBILE**

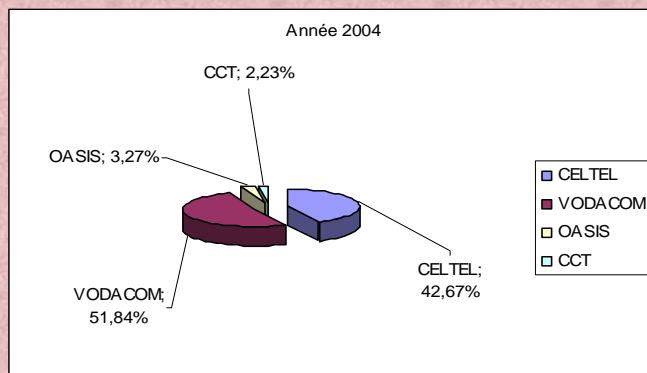
#### **1. PARC D'ABONNES**

OPERATEURS	2004		2005	
	Abonnés	Part par opérateurs	Abonnés	Part par opérateurs
CELTEL	849.399,00	42,67%	1.177.839,00	42,89%
VODACOM	1.032.000,00	51,84%	1.408.000,00	51,27%
OASIS	65.000,00	3,27%	60.255,00	2,19%
CCT	44.323,00	2,23%	100.000,00	3,64%
TOTAL	1.990.722,00	100,00%	2.746.094,00	100,00%
Densité des mobiles	3,43%		4,58%	
VARIATION	37,94%			

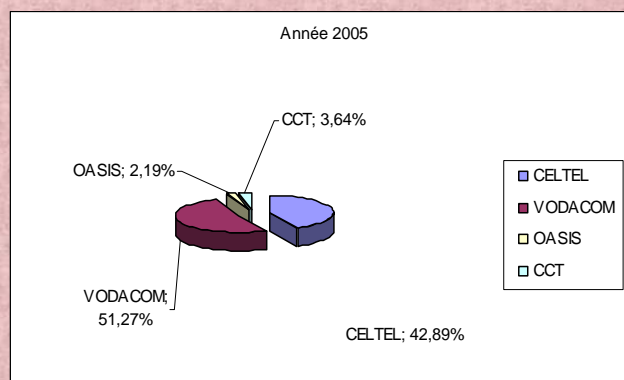
*Source : ARPTC, données opérateurs*

- Le nombre d'abonnés à la téléphonie mobile est passé de **1.990.722** en 2004 à **2.746.094** en 2005 soit un accroissement de **37.94%**.
- La densité des mobiles est passé de **3,43%** en 2004 à **4,58%** en 2005, soit de 3 téléphones à 5 téléphones portables pour 100 habitants
- Les parts du marché de chaque opérateur mobiles en rapport avec le nombre d'abonnés se présentent comme suit :

## ❖ 2004



## ❖ 2005



## 2. COUVERTURE DU RESEAU

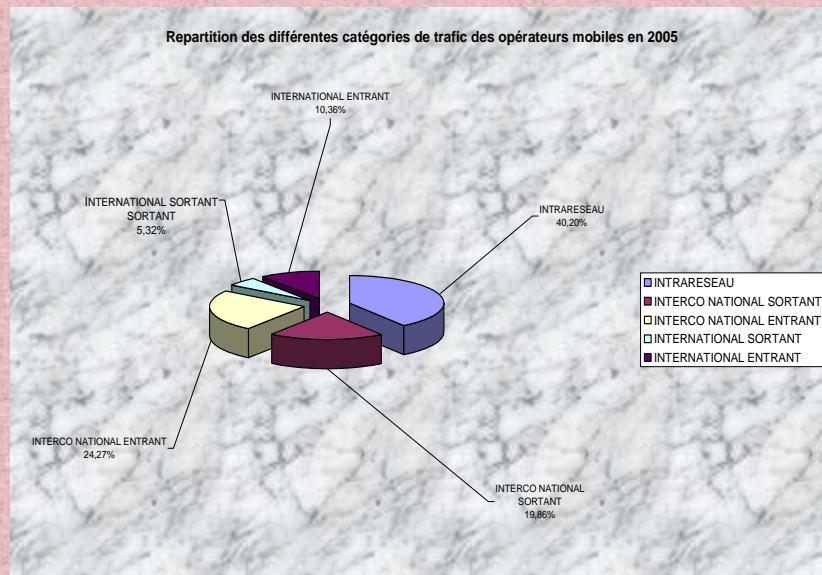
	Couverture
Territoire	+/- 20 %
Population	+/- 50 %

## 3. VOLUME TRAFIC

EN FIN 2005 LE VOLUME DU  
TRAFIC DES MOBILES SE  
PRESENTE COMME SUIVANT :

	INTRARESEAU	INTERCONNEXION NATIONAL		INTERNATIONAL		TOTAL
		SORTANT	ENTRANT	SORTANT	ENTRANT	
Volume (en minutes)	805.023.764,07	397.650.091,87	485.912.080,76	106.519.690,26	207.406.042,02	2.002.511.668,98
répartition	40,20 %	19,86 %	24,27%	5,32 %	10,36 %	100 %
	40,20 %	44,12 %		15,68 %		100 %

## DIAGRAMME DE REPARTITION



## 4.CHIFFRE D’AFFAIRE (USD)

CHIFFRE D’AFFAIRE	+/- 428.000.000,00
ARPU( revenu moyen par abonné par mois)	12.99



## **5. INVESTISSEMENT**

**JUSQU'À LA FIN DE L'ANNEE 2005,  
LES INVESTISSEMENTS S'ELEVENT A  
+/- 530.000.000 USD.**

## **6.EMPLOI**

**EMPLOIS DIRECTS A TEMPS PLEIN: 1855**



• **B. TELEPHONIE FIXE**

**1 parc d'abonnés**

OPERATEURS	2004		2005	
	Abonnés	part par opérateur	Abonnés	part par opérateur
SOGETEL	9.507,00	90,34%	9.695,00	91,64%
CKT	1.017,00	9,66%	884,00	8,36%
OCPT				
TOTAL	10.524,00	100,00%	10.579,00	100,00%
Télédensité	0,02%		0,02%	
Variation	0,52%			

❖ Le nombre d'abonnés à la téléphonie fixe est passé de **10.524** en 2004 à **10.579** en 2005 soit un accroissement de **0,52.%**

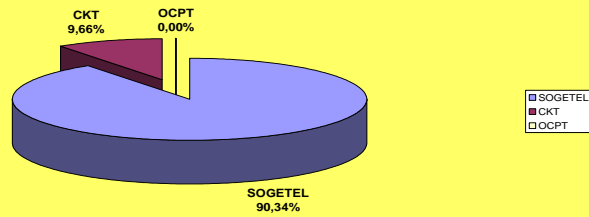
❖ La télédensité est restée quasi nulle soit **0,02%** ce qui veut dire pour 100 habitants, il n'existe presque pas de téléphones fixes; quant à l'OCPT, il n'a jamais transmis aucune donnée à l'ARPTC, d'où les vides dans les cases le concernant.

❖ Les parts du marché de chaque opérateur fixe en rapport avec le nombre d'abonnés se présentent comme suit :

## Parts du marché

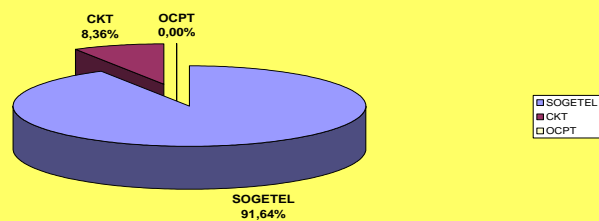
❖ **2004**

**Parts du marché des opérateurs de téléphonies  
fixes en rapport avec le nombre d'abonnés en  
2004**



❖ **2005**

**Parts du marché des opérateurs de téléphonies  
fixes en rapport avec le nombre d'abonnés en 2005**



## **C. INTERNET**

CE SEGMENT DE MARCHE SE RESUME DANS LE TABLEAU CI-APRES:

<b>INDACTEURS</b>	<b>ANNEE 2003</b>	<b>ANNEE 2004</b>	<b>ANNEE 2005</b>
<b>Nombre d'internautes</b>	<b>75.000</b>	<b>112.500</b>	<b>140.625</b>
<b>Abonnés à Internet (WLL)</b>	<b>12.000</b>	<b>17.000</b>	<b>24.000</b>
<b>Abonnés à Internet à large bande</b>	<b>1.000</b>	<b>1.450</b>	<b>1.500</b>
<b>Largeur de la bande internationale pour Internet (Mb/sec)</b>	<b>2,5 - 5</b>	<b>2,5 - 5</b>	<b>2,5 - 5</b>

## **VII. EDITION**

L'EDITION DE CES STATISTIQUES N'A PAS ENCORE ETE EXECUTEE

## USAGE DES STATISTIQUES EN RDC

LES PRINCIPAUX DEMANDEURS DE CES  
STATISTIQUES SONT LA BANQUE  
CENTRALE DU CONGO ET L'INSTITUT  
NATIONAL DE LA STATISTIQUE.

**THANK YOU VERY MUCH**



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**

**Document INF/031-E  
11 October 2006  
Original: English only**

**5<sup>TH</sup> WORLD TELECOMMUNICATION/ICT INDICATORS MEETING, GENEVA, 11-13 OCTOBER 2006**

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**FOR INFORMATION**

**SOURCE:** ITU

**TITLE:** Resolution 8: Collection and dissemination of information and statistics

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## RESOLUTION 8 (Rev.Doha, 2006)

### **Collection and dissemination of information and statistics**

The World Telecommunication Development Conference (Doha, 2006),

*recalling*

Resolution 8 (Rev.Istanbul, 2002) of the World Telecommunication Development Conference,

*considering*

- a) that the ITU Telecommunication Development Sector (ITU-D) performs a key role in the exchange and dissemination of information and statistics;
- b) the importance of the existing Telecommunication Development Bureau (BDT) databases, in particular the indicators database and the regulatory database;
- c) the usefulness of reports published by ITU-D, such as the World Telecommunication Development Report and the reports on Trends in Telecommunication Reform;
- d) the dissemination of the Blue Book for the Americas, the African Green Paper and the Arab White Book concerning the development of telecommunications in these regions,

*considering further*

- a) that the telecommunication sector at the national level is reforming at an incredible pace;
- b) that policy approaches vary and countries can benefit from the experiences of others,

*recognizing*

- a) that, by acting as a clearing house for the exchange of information and statistics, BDT will be able to assist Member States in making informed national policy choices;
- b) that the countries must participate actively in this endeavour in order to make it successful,

*recognizing further*

- a) that this kind of information and these statistics are extremely useful for the work of the study groups and in assisting ITU to assess the information and communication technology (ICT) landscape, including telecommunications;
- b) the new responsibilities to be held by ITU-D in relation to this subject, pursuant to the Tunis Agenda, in particular § 115 thereof,

*resolves to instruct the Director of the Telecommunication Development Bureau*

1 to support this activity by providing adequate resources and according it the necessary priority;

2 to continue to survey countries and produce world and regional reports which highlight country lessons and experiences, in particular on:

- trends in telecommunication sector reform;
- world telecommunication developments;
- trends on tariff policies, in collaboration with the ITU Telecommunication Standardization Sector (ITU-T);
- implementation of the General Agreement on Trade in Services;

- 3 to establish and collect community connectivity indicators and to participate in the establishment of core indicators to measure efforts to build the information society and, by doing so, to illustrate the scale of the digital divide;
- 4 to encourage countries to collect information illustrating national digital divides;
- 5 to further develop and improve benchmarking efforts, including the ICT Opportunity Index;
- 6 to strengthen ITU-D's role in the *Partnership on Measuring ICT for Development* by acting as a member of the steering committee and through active participation in discussions and activities geared toward achieving its main objectives;
- 7 to provide indicator and regulatory information on the ITU-D website and to establish appropriate mechanisms and modalities for countries which do not have electronic access to obtain this information;
- 8 to provide technical assistance to regulatory authorities for the development of national telecommunication databases containing statistical and policy and regulatory information, including support for making information available electronically and training of personnel in skills related to the process;
- 9 to provide information on specialized expertise of ITU-D Sector Members in different fields of telecommunication/ICT with the purpose of assisting those who might wish to request their services and to develop training material and conduct specialized training courses on information society statistics for developing countries;
- 10 to unify all BDT information and statistical databases on the BDT website so as to respond to the objectives as stated in §§ 113, 114, 115, 116, 117 and 118 of the Tunis Agenda, and to play a primary role in relation to §§ 119 and 120;
- 11 to assist countries with indigenous populations in developing indicators to evaluate the impact of ICTs on indigenous peoples that enable the achievement of the objectives set forth in C8 of the Geneva Plan of Action;
- 12 to continue to cooperate with the relevant international bodies, in particular the United Nations Statistics Division, and other international and regional organizations, such as the Organisation for Economic Co-operation and Development (OECD), involved in the collection and dissemination of ICT-related information and statistics,

*invites Member States and Sector Members*

to participate actively in this endeavour by providing the information solicited,

*encourages*

donor agencies and relevant United Nations agencies, as well as ITU non-members, to cooperate in providing relevant information on their activities.



INTERNATIONAL TELECOMMUNICATION UNION

**TELECOMMUNICATION  
DEVELOPMENT BUREAU**

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**SOURCE: ITU**

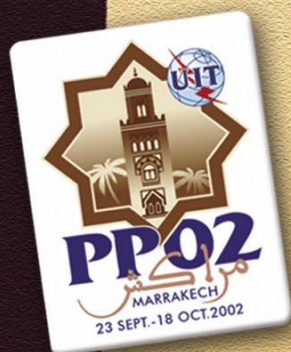
**TITLE: Resolution 131**

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International Telecommunication Union

# FINAL ACTS OF THE PLENIPOTENTIARY CONFERENCE (MARRAKESH, 2002)



International  
Telecommunication  
Union

## RESOLUTION 131 (Marrakesh, 2002)

**Community connectivity indicators<sup>1</sup>**

The Plenipotentiary Conference of the International Telecommunication Union (Marrakesh, 2002),

*aware*

- a)* that technological innovation, digitization and information technologies have significantly modified the ways in which people access knowledge and communicate with one another;
- b)* that there is a need to promote knowledge and the development of skills in all populations in order to achieve greater economic, social and cultural development and to raise the standard of living of the world's citizens;
- c)* that each Member State is seeking to establish its own policies and regulations in order to narrow as effectively as possible the digital divide between those who have access to communication and information and those who do not,

*recognizing*

- a)* that the World Summit on the Information Society represents an opportunity to establish a global strategy for narrowing the digital divide from the development standpoint;
- b)* that the basic indicator traditionally used in the telecommunication field was the number of fixed telephone lines per hundred inhabitants, but that that indicator no longer reflects the actual penetration of telecommunication services in those countries where community access programmes have been implemented,

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<sup>1</sup> Community connectivity is taken here to refer to the possibility to access telecommunication services from a terminal facility put at the disposal of a community, to facilitate ease of use.

*recognizing further*

- a) that fixed telephony is no longer the only means of communication between individuals, towns and countries;
- b) that, with a view to providing their populations with faster access to telecommunication services, many countries have implemented public community connectivity policies in those communities that are poorly served with telecommunication facilities;
- c) that a radically new trend is emerging in the provision of universal service, tending to favour community connectivity and broadband access instead of seeking in the short term to ensure that all households have a telephone line,

*bearing in mind*

- a) that in order to keep each country's public policy-makers properly informed, ITU gathers and periodically publishes a variety of statistics which provide some indication of the degree of progress in and penetration of telecommunication services in the different regions of the world;
- b) that current indicators cannot serve to measure the real impact of the introduction of community connectivity;
- c) that new indicators are needed to analyse the development of communities where community connectivity is introduced, thereby enabling the true impact and effectiveness of each country's public policies to be measured;
- d) that, according to the guidelines of the Plenipotentiary Conference, it is necessary to ensure as far as possible that the policies and strategies of the Union are fully in tune with the constantly changing telecommunication environment,

*noting*

- a) that the ITU World Telecommunication/ICT Indicators Meeting is to be held in 2003 to analyse telecommunication indicators;

b) that regional and world preparatory meetings will also be held to put forward proposals for the plan of action of the World Summit on the Information Society,

*resolves to instruct the Secretary-General*

to promote the adoption of measures necessary to ensure that community connectivity indicators are taken into account in regional and world meetings convened for the purpose of developing the plan of action of the World Summit on the Information Society,

*instructs the Directors of the Telecommunication Development Bureau and the Telecommunication Standardization Bureau*

1 to promote the activities required in their respective Sectors to define and adopt new indicators for the purpose of measuring the real impact of community connectivity on the development of communities;

2 to include on the agenda of the ITU World Telecommunication/ICT Indicators Meeting, to be held in January 2003, an item on the study of this new community connectivity indicator,

*invites Member States*

to participate actively in the work to be carried out at the regional and world levels to prepare these new community connectivity indicators.



UNIÓN INTERNACIONAL DE TELECOMUNICACIONES

**OFICINA DE DESARROLLO DE  
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5<sup>DA</sup> REUNIÓN SOBRE LOS INDICADORES DE LAS TELECOMUNICACIONES/TIC MUNDIALES,  
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PARA INFORMACION

ORIGEN: CONATEL, Ecuador

TÍTULO: Sistema Ecuatoriano de Indicadores para la Sociedad del Conocimiento  
Sistema Ecuatoriano de Indicadores para la Sociedad del Conocimiento

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# Sistema Ecuatoriano de Indicadores para la Sociedad del Conocimiento

Presentación de Proyecto

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## Transición

El desarrollo de las Tecnologías de Información y Comunicación (TIC) ha provocado una revolución social en los ámbitos políticos, culturales y económicos, dando paso a un nuevo contexto denominado Sociedad del Conocimiento (SC).

La Sociedad del Conocimiento es un proceso dinámico, complejo y fuertemente heterogéneo, que se desarrolla de manera desigual en cuanto a zonas geográficas o tipo actividad sectorial, creando brechas digitales entre organizaciones y personas.

## Sociedad del Conocimiento

Una nueva forma de desarrollo económico y social en el que la gestión de la información y el conocimiento con vistas a la satisfacción de las necesidades de las personas y de las organizaciones, juega un papel central de la actividad económica, en la creación de riqueza y en la definición de la calidad de vida y las prácticas sociales y culturales de los ciudadanos.

## Potencial SC

Es ampliamente reconocido el potencial de Sociedad del Conocimiento para fomentar el desarrollo socioeconómico y cultural, mediante el mejor aprovechamiento de los avances de las TIC.

Varias Instituciones están abordando cómo potenciar de manera sistemática, una mayor integración de los sectores que intervienen en el desarrollo socioeconómico.



## Problema

El Ecuador carece de instrumentos consistentes para la identificación sistemática y continua de los impactos sociales que la nueva sociedad genera, existe información dispersa e incompleta, que no esta orientada a medir la difusión y aprovechamiento de las TIC en los distintos sectores sociales y productivos.

## Importancia

Para comprender y monitorear este fenómeno social y tecnológico su desarrollo, además de contar con una herramienta que permita orientar el accionar público y privado a fin de aprovechar las oportunidades y mitigar los riesgos que esta transformación social encierra.



## Importancia

Formular políticas y estrategias concernientes al crecimiento posibilitado por dichas tecnologías, favorecer la cohesión y la inclusión social, y efectuar el seguimiento y la evaluación de los efectos de esas tecnologías en la evolución económica y social.

## Objetivo General

El Proyecto tiene por objetivo implementar un sistema de indicadores en el ámbito estatal, productivo, académico y comunitario, capaz de proporcionar información agregada, oportuna y confiable para la toma de decisiones relacionadas con la implementación de políticas y programas destinados a favorecer el aprovechamiento de las tecnologías de información y comunicación.

## Objetivos específicos

1. Diseñar un conjunto de indicadores relevantes para evaluar el impacto social del uso y aprovechamiento de las tecnologías de información y comunicación.
2. Definir técnicas y procedimientos estandarizados que garanticen la obtención de la información sectorial sobre el impacto social de las tecnologías de información y comunicación.
3. Establecer una red de centros de investigación, a través de alianzas estratégicas, que permitan la actualización permanente del sistema.
4. Realizar un estudio de línea base para los sectores productivo, estatal y social.
5. Difundir los resultados de la Investigación, a través de su publicación.

## Alcance

Las preguntas que busca responder esta investigación son:

- ¿Qué sectores sociales y productivos son los más vulnerables en el nuevo contexto de la sociedad?
- ¿Cuál es la infraestructura y acceso de tecnologías de información y comunicación que disponen las organizaciones y personas en el Ecuador?
- ¿Qué aplicaciones y contenidos se han desarrollado para aprovechar la SC?
- ¿Cómo se prepara el capital humano para afrontar a la SC?
- ¿Cuáles son las iniciativas más relevantes en función de aprovechar la Sociedad del Conocimiento?.

## Sectores / Dimensiones

	Público	Privado	Social
Acceso / Infraestructura			
Contenidos y Aplicaciones			
Uso y Capacidades			

## Metodología

**Matriz de Indicadores de la Sociedad de la Información**

Telecomunicaciones		Informática y Servicios de alto valor agregado		
	Infraestructura	Capacidades	Inversiones/Esfuerzos	Aplicaciones
Empresas				
Hogares				
Gobierno				
Otras Instituciones				
Educación		Ciencia y Tecnología		

Propuesta metodológica para la medición de la sociedad del conocimiento en el ámbito de los países de América Latina; Carlos Lugones

## Actividades

- Recopilación y análisis de estudios sectoriales e información estadística existente.
- Entrevistas con Líderes de opinión.
- Establecer alianzas para la conformación de la red.
- Validación de Indicadores.
- Definición de procesos y métodos para obtención de indicadores.
- Realización de Encuesta.
- Análisis y Sistematización de Resultados.
- Difusión de los resultados.

## Asociación

- Académico
- Público
- Privado



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# Unbeatable Mobile Communications Expertise



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