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**Sector Paper on
Industry ISIC 61
TELECOMMUNICATIONS**

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Foreword

The objectives of the sector papers is to present a synthesis of the state of the art on the methodology and practices in developing classification, production (turnover) and price statistics for service industries and commodities. The papers are based on individual country's experience as they were reported through a series of mini-presentation, as well as the results of the discussions during the various meeting of the Voorburg Group.

The purpose of this series of sector papers is not to replicate what is already presented in the mini-presentation reports, nor to rehash general issues regarding the needs of service statistics of the national accountants or the general methodology framework for the establishment of price and turnover statistics. These issues are described in another series of paper that will be available on the Website of the Voorburg Goup.

The value added of the sector paper is that it provides, to countries that are starting the development of new services statistics, a framework that allows them to identify different practices and opportunity costs that are derived from the experience of others. As such the paper gives indication that help a country in deciding whether given its institutional conditions it can afford to use one method over another.

This sector paper on Telecommunications is the first attempt of highlighting the characteristics and opportunity cost of the various experiences that were presented at the Voorburg meeting of Aguascalientes in 2008.

1.0 Introduction

This sector paper on Telecommunications presents the principal findings and the different practices used in the various countries. It also identifies the challenges associated with classification of this service and provides a framework for discussing and choosing options for countries wishing to develop or revise their turnover statistics and Service Producer Price Index (SPPI) programs.

During the meeting of the Voorburg Group in Aguascalientes (2008) a series of papers on turnover statistics were presented by Canada, Norway and The Netherlands and an another series of presentations on prices were given by Austria, Germany and France. Moreover, country experiences have already been presented in the context of Voorburg Group meetings several times (namely Örebro 2001; Tokyo 2003; Ottawa 2004). The sources of information for this paper also include: presentations and summary notes from the *23rd Voorburg Group Meeting on Services Statistics, Aguascalientes, Mexico (2008)*; the *OECD-Eurostat 2005 Inquiry on National Collection of Services Producer Prices*; the *Eurostat and OECD Methodological Guide For Developing Producer Price Indices For Services, 2005* and the *United Nations Statistics Division – Classification Registry* (cf. Appendix 1 for references).

The paper is divided into three main sections. The first part deals with the issues related to the classification of service industries and commodities. The second one addresses the different characteristics drawn from the collection practices of various countries, while the last section presents the methodological price collection options chosen by different countries. In these two last sections, some general considerations on the various approaches are presented as well as their trade-off. The paper ends with appendices providing overview of some international classifications (appendices 2 and 3) as well as an overview of progress in the development of this sector in 20 countries (appendix 4).

2.0 Classification

Telecommunications is a high innovative and very dynamic service industry, which is susceptible to rapid changes in regulation, technology and customer movement to new services. There is a global movement towards communications convergence, which may result in the integration of telecommunication services with IT services.

So the classification issue is difficult because an up-to-date classification can become obsolete in a few years. The last version of the International Standard International Classification (ISIC Rev. 4) is now identical with the North American Industry Classification System (NAICS 2007). These new classifications for industry suit the information needs better than the preceding ones but they may become obsolete with the introduction of new services or bundling of mobile and fixed -lined.

2.1 Industry Classification

On an industry basis, the various classification systems are now fairly harmonized for telecommunications services.

The three main industrial classifications considered in this paper are the International Standard Industry Classification (ISIC Rev. 4), the NACE Rev. 2 2008 (*Nomenclature des Activités économiques dans la Communauté Européenne*, i.e. Statistical Classification of Economic Activities in the European Community) and the North American Industry Classification System (NAICS v. 2007 US).

The ISIC (Rev. 4) represents the most broadly used international classification system of economic activities. Under Section J (Information and communication) in the ISIC hierarchy, the division 61 “Telecommunications” includes the activities of providing telecommunications and related service activities, i.e. transmitting voice, data, text, sound and video. The transmission facilities that carry out these activities may be based on a single technology or a combination of technologies. The commonality of activities classified in this division is the transmission of content, without being involved in its creation. The breakdown in this division is based on the type of infrastructure operated. In the case of transmission of television signals this may include the bundling of complete programming channels (produced in division 60) in to programme packages for distribution. This Division is divided into the following Groups and Classes:

- 6110 - Wired telecommunications activities
- 6120 - Wireless telecommunications activities
- 6130 - Satellite telecommunications activities
- 6190 - Other telecommunications activities

The explanatory notes of ISIC Rev 4 for these classes are in appendix 2.

A second internationally used industry classification system is the NACE classification system used by EU countries. For the division 61 of ISIC rev 4 , the NACE and the ISIC classification are identical.

The NAICS 517 Telecommunications class comprises establishments primarily engaged in providing telecommunications and/or video entertainment services over their own or leased networks, on a resale basis or over client-supplied high speed Internet connection. The establishments are grouped into industries on the basis of the nature of services provided (fixed or mobile), the type of network used to deliver those services (wired or wireless) and the business model they employ (facilities based or resale). “Industries in the Telecommunications subsector group establishments that provide telecommunications and the services related to that activity (e.g., telephony, including Voice over Internet Protocol (VoIP); cable and satellite television distribution services; Internet access; telecommunications reselling services). The Telecommunications subsector is primarily engaged in operating, and/or providing access to facilities for the transmission of voice, data, text, sound, and video. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in the Telecommunications subsector are grouped into four industry groups. The first three are comprised of establishments that operate transmission facilities and infrastructure that they own and/or lease, and provide telecommunications services using those facilities. The distinction among the first three industry groups is the type of infrastructure operated (i.e., wired, wireless, or satellite). The fourth industry group is comprised of establishments that provide support activities, telecommunications reselling services, or many of the same services provided by establishments in the first three industry groups, but do not operate as telecommunications carriers. Establishments primarily engaged as independent contractors in the installation and maintenance of broadcasting and telecommunications systems are classified in Sector 23, Construction. Establishments known as Internet cafes, primarily engaged in offering limited Internet connectivity in combination with other services such as facsimile services, training, rental of on-site personal computers, game rooms, or food services are classified in Subsector 561, Administrative and Support Services, or Subsector 722, Food Services and Drinking Places, depending on the primary activity” (NAICS explanatory note, see Appendix 2 for more details).

2.2 Product Classification

Unlike the industry classification comparison, product classifications are not harmonized to the same degree. The Central Product Classification (CPC Rev 2) is the main product classification systems applicable to this industry and the relevant categories are namely : group 841 “Telephony and other telecommunications services”, 842 “Internet communication services” and 8463 “Broadcasting, programming and programme distribution services”. There are 15 different subclasses for the Telecommunications services, with a breakdown according to technical criteria.

Another classification is the European statistical Classification of Products by Activity, version 2008 (CPA 2008). There is a direct link between this classification of products and the NACE industry classification; there are 24 items for the Telecommunications services. The CPC Rev 2 and the CPA 2008 are comparable but slightly different. The CAP structure with explanatory notes is in Appendix 3.

3.0 Turnover Statistics

This section presents the principal findings of the mini-presentations on turnover statistics from the 2008 Voorburg meeting, for Canada, Norway and The Netherlands.

Turnover data can be collected either by survey or through administrative sources such as regulatory reporting, tax data, trade association statistics and company reports. There are advantages and disadvantages with each type of collection methods and the decision for using one rather than another often depends on the resources available and the institutional environment (e.g. the presence of good administrative data).

For most statistical office, the privileged method of collecting statistics remains the survey instrument. The main benefit of conducting a survey is that precise turnover detail can be defined and collected with the desired periodicity (monthly, quarterly, or annually). Depending on the uses of the information (e.g. for current economic intelligence or for benchmarking purposes), the choice of using a survey instrument depends on factors such as: i) the resources available, ii) the ability for the respondent to answer the question and iii) the burden that one wants to impose to the respondents. If resources are not a limiting factor, the sample can vary in size (random or census) and in complexity (industries and product details). The periodicity can also be increased to provide more current economic information.

Another option to collect information is to use administrative data sources when available. They can be less precise in terms of the level of detail they provide, and turnover revenues may include bundled items and other revenues that do not relate to the service category under examination. The great advantage is that it does not impose additional burden on respondent. This is an important feature as firms active in the service industries are generally of small and medium size and may have little resources to respond to surveys. In comparison surveys present a more accurate method for collecting turnover data, however they are more costly to administer and impose respondent burden. Depending on user needs, annual data is the minimum requirement for the purpose of benchmarking the economy. Where resources permit, sub-annual data provides more timely information on the industry which is essential for calculating a quarterly GDP and providing current economic information.

Canada collects information on turnover by type of telecommunication services with 2 surveys, one annual, one quarterly. The statistical infrastructure to measure the outputs of telecommunications industries has been redesigned with the integration of surveys conducted by the regulator (The Canadian Radio-Television and Telecommunications Commission or CRTC) and the statistical agency (Statistics Canada) since the 2007 survey cycle (conducted in 2008).

The *Annual Survey of Telecommunications* collects information on revenues and expenses, fixed assets and capital expenditures by type as well as data on the number of fixed and wireless accesses by type and on telecommunications traffic. This survey is a census of all the telecommunications services providers above a given size threshold. Large providers are asked for detailed information through an on-line data collection

system while smaller providers are asked for a few variables through a paper-based data collection. This annual survey is complemented by a quarterly survey that collects a subset of key variables of the annual survey from the largest entities, namely revenues (or turnover) by broad type of services

In Norway, turnover data is based on data from administrative registers for annual data and from Value Added Tax for quarterly data. The turnover is defined as the sum of remuneration for rendering services to customers, sales of merchandise and gross income from other activities; rental income and commissions are included, while special taxes, public grants and profit on the disposal of fixed assets are not.

In The Netherlands turnover is collected on a quarterly and annual basis in order to answer the European regulation on Short-Term Statistics (STS) and Structural Business Statistics (SBS). Statistical surveys are conducted for enterprises with 10 or more employees while tax data is used for the enterprises with less than 10 employees. So there is a mix model combining administrative data and statistical surveys.

3.1 Main issues with Turnover Measurement

One important issue is the definition of turnover ; in a statistical survey one can provide a precise definition of turnover as for example” the value of invoiced sales of goods and services supplied to third parties during the reference period”; but when using tax declaration for value added tax one has to take what is collected for tax purposes, for example, VAT reports may include revenue from non-turnover producing activities as sales of fixed assets. The precise definition can be collected via statistical surveys and used for definitive annual figures ; an approximate definition in tax data may be sufficient for trend figures for short-term statistics.

When data from the regulation authority is used, the turnover may be broken down first into broad service category (local, long distance, Internet, ...) and further by type and by market served (residential, business, wholesale,...) as it is the case for Canada ; this approach aimed to give a good description of the market structure for monitoring needs. Even when data from the regulation authority is not used, the surveys are frequently designed with a specific collection classification in line with the market structure. So these specific classification in line with the market structure are different from the official classification of products and very often at a less detailed level than the CPC (15 items) or the CPA (24 items). There is a trade-off between a relevant and efficient classification structure for collecting products data and a difference with official classification products.

Table 3.0 provides an overview of development options for surveying turnover, in terms of practices (best practice, good practice and the minimum requirements) for a turnover series to be produced.

Table 3.0: Options for Developing Turnover Statistics

Category	Data Source And method of collection	Level of Detail Collected	Frequency	Advantages And Disadvantages
Best practice	One or many surveys with different frequencies (may include Economic Census) Methods: Mail survey Interview and mail survey Census If available, data from the regulation authority may be a substitute	Industry detail according to ISIC or NAICS Product detail (CPC, NAPCS, CPA)	Annual and sub-annual collection (monthly or quarterly)	Advantages: Provide detailed information for the national accounts on a timely manner (monthly, quarterly and annual data) Provides benchmarking and current economic analysis Allows the construction of I-O tables (commodities by industries) Disadvantages: This option is the most expensive given complexity of the survey Large response burden Response rate are normally lower for this kind of survey
Good practice	One or many surveys with different frequencies Methods: Mail survey Interview and mail survey	Industry detail <u>only</u>	Annual and Sub-annual	Advantages: Provide detailed information for the national accounts on a timely manner (monthly, quarterly and annual data) Provides benchmarking and current economic analysis Disadvantages: This option is the most expensive given complexity of the survey Large response burden Response rate are normally lower for this kind of survey
Minimum requirement	Administrative or mix model	Industry detail <u>only</u>	Annual	Advantages: Least expensive Little or no response burden Large coverage Disadvantages: Data coverage and definition can be imprecise Least timely

4.0 Service Producer Price Index (SPPI)

This section presents the main findings of the mini-presentation on service prices from the 2008 Voorburg meeting for Austria, Germany and France. It describes some key aspects for the development and improvement of service price indices for the Telecommunications. The pricing methods used in the various countries are defined in *the Thesaurus of Producer Price Indices for Services* which was presented at the 2006 and 2007 Voorburg meeting. Moreover, country experiences in the development of an SPPI for telecommunication services have been presented in the context of Voorburg Group meetings several times (namely Örebro 2001; Tokyo 2003; Ottawa 2004).

The most commonly used pricing methods are : the bill method, the rate method and the unit value method.

The basic principle of the bill method is the selection of individual telephone bills which represent a calling structure. These bills are characterized by clearly identifiable service components that could be held constant over time to guarantee that exactly the same service can be re-priced by the respondent in the following periods. These bills can consist of the various different services of telecommunications like long and short distance calls, calls to mobile, etc. It is advisable to incorporate given discounts in the calculation of the SPPI. The main drawback is that the respondent burden is very high and it may result in non-response. Another drawback is that bundling or unbundling of services may cause problems in the case that enterprises cannot provide data for the before unbundled or bundled service products.

An alternative pricing method is the rate method. In cases where companies complained about the respondent burden of the bill method, the rate method is an acceptable alternative for the enterprise. Using the rate method companies no longer have to re-calculate the requested original bill of the bases period by filling in the tariffs; instead of that respondents provide tariffs or rates for completely specified services whose characteristics were held constant over time. The rate method is step one of the bill method. The drawbacks of this method are the same than for the bill method but the respondent's burden is lower. The bill method and the rate method are "component pricing" methods according to the Glossary of the Voorburg Group.

The third method is the unit value method. It is now the standard and the more preferred method because it eliminates the main drawbacks of the two before mentioned methods. In general, due to rarely met homogeneity of services in miscellaneous subgroups, unit values are not the favored pricing method ; but reported respondent burden, technological developments and frequent changes in invoicing systems make other pricing methods so difficult and costly that unit values are more and more used for the index calculation for telecommunication in most countries (some countries originally adopted the rate method and thereafter moved to unit value, e.g. US, Canada and UK). Moreover, unit values may also take changes in productivity into account. In general, the respondent has to report two kinds of information on the most detailed level : the revenue for a precisely defined

single telephone service (e. g. calls from fixed link to mobiles within the country for business customers), the respective quantity (here minutes); in most cases these data can be provided easily by the respondents because enterprises are interested in their revenue on a quantity basis on their own; furthermore given discounts should be incorporated in their reported revenue.

In Austria, the data source for the calculation of unit values is the Austrian Regulatory Authority for Telecommunications and Broadcasting (RTR). This regulatory authority is obliged to collect quarterly revenue and volume data in the different fields of telecommunications. Quarterly data for the index calculation on the most detailed level as well as the respective weighting information are provided by the RTR ; in the overall, about 193 unit values are calculated and four indexes are disseminated (fixed-link telecommunications, mobile telecommunications, broadband, leased lines) since June 2007.

In Germany, the regulation authority is not allowed by law to provide the data to the Statistical office. So, the Statistical office has to do the collection work on its own; this has been done with technical advice from the regulator, moreover regulator's annual questionnaires were used as a basis for statistical questionnaires. Pricing method is the unit value approach in a breakdown for several activities. The German price statistics is organized in such a way that SPPI and CPI for services are collected by the same organizational unit.

In France, there is a regulation authority (ARCEP, "*Autorité de Régulation des Communications Electroniques et des Postes*") that collects very detailed data (quarterly surveys by final- customer type, mostly unit price per minute for different calls). These data can be provided to the Statistical office for calculating the Producer price index

4.1 Main issues with price measurement

One of the main issues is to obtain data from the regulation authority. If possible, it is the best solution as regards collection costs and response burden. But the data transmission may cause problem if the complete telecommunications market is not subject to the supervision of the authority; this may happen in the case of liberalization of markets if there is enough competition and no need of supervision any more (e.g. in Germany for parts of fixed line and mobile telephony).

Another main issue is to obtain unit value data for very homogeneous subgroups in order to track all price-determining factors. As data are those asked by the regulator, one can get very detailed and relevant data. However the breakdown of data must be kept up-to-date and adapted to new market developments (e.g. higher data transmission rates in the Internet bundling of services, convergence between Internet use and fixed line and mobile telephony) in close consultation with the regulator. The introduction of flat rate for telephony or Internet uses changes the behavior of clients towards more extensive uses of this service. So very often, the products groupings are influenced by marketing,

technological and mainly regulatory considerations, and in consequence the structure of the collected data may be quite different from the CPC.

Another main issue is quality adjustment for this innovative activity with frequent new services. Especially for the Internet, the shift to higher data transmission rates is to be taken into account. One possible solution is to calculate Laspeyres indexes with frequent updating of the weighting structure (each year and not every five years for example).

Another issue is whether to calculate Business to Business (B to B) or Business to All (B to All) price indexes. A priori, the services in focus in the SPPI program are mainly business services so what is to be measured is Business to Business price transactions ; the current European STS regulation considers only the B to B approach; but a wider scope may be interesting, namely for national accounts and international recommendations (OECD, IMF) are in favor of a B to All approach. In practice, it may be easier to follow a B to All approach as for certain services, it is difficult to distinguish between use for business or for private households (especially for mobile phone).

According to the European “Handbook on Price and Volume Measures in National Accounts” (Eurostat, 2005), the use of unit value price indexes is considered as a B method. But if SPPI is calculated according to numerous homogeneous subgroups, one should obtain a relevant aggregate SPPI.

Table 4.0: Choices for Developing SPPI Statistics

Category	Pricing method	Data type in the survey and frequency	Quality and Accuracy
Best	1. Unit Value	Revenue and amount sold.	<p>Advantages Transactions in a group must be sufficiently homogeneous (i.e. quality of individual services is unchanged and their quantities in the transactions do not vary). More flexible towards market changes than other methods.</p> <p>Disadvantages: Revenues have to be well-defined for consistency in comparison. Breakdown of data must be kept up-to-date (quality changes, bundling, etc). Least expensive, lowest response burden</p>
Good	Rate method	Tariff data	<p>Advantages: Detailed service specifications are held constant over a period of time, which allows time-consistent comparisons.</p> <p>Disadvantages: Less expensive, high response burden.</p>
Minimum	Bill method	Bill data	<p>Advantages: Detailed service specifications allow time-consistent comparisons.</p> <p>Disadvantages: Most expensive, with highest response burden.</p>

Appendix 1 : References

Eurostat and OECD, **Methodological Guide For Developing Producer Price Indices For Services**, ed. 2005. Chapter 4.8 <http://www.oecd.org/dataoecd/44/40/36274111.pdf>>

United Nations Statistics Division – Classification Registry, <<http://unstats.un.org>>.

Seppo Varjonen, OECD Statistics Directorate. **OECD-Eurostat 2007 Inquiry on National Collection of Services Producer Prices**. <<http://www.oecd.org/dataoecd/0/37/27257808.pdf>>.

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Peter Roemer (2008), *Producer Price Index for Wired, Wireless, Satellite and Telecommunications Services in Germany*, 23rd Meeting of the Voorburg Group, Aguascalientes, Mexico.

Andreas Martin, Peter Roemer, Anne Salbach-Schneider (2008), *New producer price indices for post and telecommunications*, www.destatis.de >english > prices

Denis Gac (2008), *SPPI for Telecommunications in France*, 23rd Meeting of the Voorburg Group, Aguascalientes, Mexico.

Appendix 2: Overview of International Industry Classifications

Industry classification : explanatory notes of ISIC Rev 4

The class **6110** includes:

- operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound and video **using a wired telecommunications infrastructure**, including:
 - operating and maintaining switching and transmission facilities to provide point-to-point communications via landlines, microwave or a combination of landlines and satellite linkups
 - operating of cable distribution systems (e.g. for distribution of data and television signals)
 - furnishing telegraph and other non-vocal communications using own facilities

The transmission facilities that carry out these activities, may be based on a single technology or a combination of technologies.

This class also includes:

- purchasing access and network capacity from owners and operators of networks and providing telecommunications services using this capacity to businesses and households
- provision of Internet access by the operator of the wired infrastructure

This class excludes:

- *telecommunications resellers, see 6190*

The class **6120** includes:

- operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound, and video **using a wireless telecommunications infrastructure**
 - maintaining and operating paging as well as cellular and other wireless telecommunications networks
- The transmission facilities provide omni-directional transmission via airwaves and may be based on a single technology or a combination of technologies.

This class also includes:

- purchasing access and network capacity from owners and operators of networks and providing wireless telecommunications services (except satellite) using this capacity to businesses and households
- provision of Internet access by the operator of the wireless infrastructure

This class excludes:

- *telecommunications resellers, see 6190*

The class **6130** includes:

- operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound and video **using a satellite telecommunications infrastructure**
- delivery of visual, aural or textual programming received from cable networks, local television stations or radio networks to consumers via direct-to-home satellite systems (The units classified here do not generally originate programming material.)

This class also includes:

- provision of Internet access by the operator of the satellite infrastructure

This class excludes:

- *telecommunications resellers, see 6190*

The class **6190** includes:

- provision of specialized telecommunications applications, such as satellite tracking, communications telemetry, and radar station operations
- operation of satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems
- provision of Internet access over networks between the client and the ISP not owned or controlled by the ISP, such as dial-up Internet access etc.
- provision of telephone and Internet access in facilities open to the public
- provision of telecommunications services over existing telecom connections:
 - VOIP (Voice Over Internet Protocol) provision

- telecommunications resellers (i.e. purchasing and reselling network capacity without providing additional services)

This class excludes:

- *provision of Internet access by operators of telecommunications infrastructure, see 6110, 6120, 6130*

Industry classification : explanatory notes of NAICS 2007

5171 Wired Telecommunications Carriers

51711 Wired Telecommunications Carriers

517110 Wired Telecommunications Carriers US

This industry comprises establishments primarily engaged in operating and/or providing access to transmission facilities and infrastructure that they own and/or lease for the transmission of voice, data, text, sound, and video using wired telecommunications networks. Transmission facilities may be based on a single technology or a combination of technologies. Establishments in this industry use the wired telecommunications network facilities that they operate to provide a variety of services, such as wired telephony services, including VoIP services; wired (cable) audio and video programming distribution; and wired broadband Internet services. By exception, establishments providing satellite television distribution services using facilities and infrastructure that they operate are included in this industry.

Illustrative Examples:

Broadband Internet service providers, wired (e.g. cable, DSL)

Local telephone carriers, wired

Cable television distribution services

Long-distance telephone carriers, wired

Closed circuit television (CCTV) services

VoIP service providers, using own operated wired telecommunications infrastructure

Direct-to-home satellite system (DTH) services

Telecommunications carriers, wired

Satellite television distribution systems

Multichannel multipoint distribution services (MMDS)

Cross-References. Establishments primarily engaged in--

Producing and distributing a channel of television programming for cable or satellite television systems--are classified in Industry 515210, Cable and Other Subscription Programming;

Operating coin-operated pay telephones--are classified in Industry 812990, All Other Personal Services;

Operating and maintaining wireless telecommunications networks--are classified in Industry 517210, Wireless Telecommunications Carriers (except Satellite);

Producing and distributing radio programs for cable or satellite radio systems--are classified in U.S. Industry 515111, Radio Networks;

Reselling telecommunications services (except satellite telecommunications), without operating a network--are classified in U.S. Industry 517911, Telecommunications Resellers;

Publishing telephone directories--are classified in Industry 511140, Directory and Mailing List Publishers;

Reselling satellite telecommunications services--are classified in Industry 517410, Satellite Telecommunications;

Providing Internet access services via client-supplied telecommunications connections (e.g. dial up ISP's)--are classified in U.S. Industry 517919, All Other Telecommunications;

Providing voice over Internet protocol (VoIP) services via client-supplied telecommunications connections--are classified in U.S. Industry 517919, All Other Telecommunications;

Providing limited Internet connectivity at locations known as Internet cafes, in combination with other services such as facsimile services, training, rental of on-site personal computers, games rooms, or food services--are classified in U.S. Industry 561439, Other Business Service Centers (including Copy Shops) or Subsector 722, Food Services and Drinking Places, depending on the primary activity.

5172 Wireless Telecommunications Carriers (except Satellite)

51721 Wireless Telecommunications Carriers (except Satellite)

517210 Wireless Telecommunications Carriers (except Satellite)

This industry comprises establishments engaged in operating and maintaining switching and transmission facilities to provide communications via the airwaves. Establishments in this industry have spectrum licenses and provide services using that spectrum, such as cellular phone services, paging services, wireless Internet access, and wireless video services.

Illustrative Examples:

Cellular telephone services

Wireless Internet service providers, except satellite

Paging services, except satellite

Wireless telephone communications carriers, except satellite

Cross-References. Establishments primarily engaged in--

Operating and maintaining wired telecommunications networks--are classified in Industry 517110,

Wired Telecommunications Carriers;

Operating and maintaining satellite networks--are classified in Industry 517410, Satellite

Telecommunications;

Providing satellite television distribution services--are classified in Industry 517110, Wired

Telecommunications Carriers; and

Operating as mobile virtual network operations (MVNO)--are classified in U.S. Industry 517911,

Telecommunications Resellers.

5174 Satellite Telecommunications

51741 Satellite Telecommunications

517410 Satellite Telecommunications

This industry comprises establishments primarily engaged in providing telecommunications services to other establishments in the telecommunications and broadcasting industries by forwarding and receiving communications signals via a system of satellites or reselling satellite telecommunications.

Cross-References.

Establishments primarily engaged in providing direct-to-home satellite television services to individual households or consumers are classified in Industry 517110, Wired Telecommunications Carriers.

5179 Other Telecommunications

51791 Other Telecommunications

This industry comprises establishments primarily engaged in (1) purchasing access and network capacity from owners and operators of telecommunications networks and reselling wired and wireless telecommunications services (except satellite) to businesses and households; (2) providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation; (3) providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems; or (4) providing Internet access services or Voice over Internet protocol (VoIP) services via client-supplied telecommunications connections. Establishments in this industry do not operate as telecommunications carriers. Mobile virtual network operators (MVNO) are included in this industry.

517911 Telecommunications Resellers US

This U.S. industry comprises establishments engaged in purchasing access and network capacity from owners and operators of telecommunications networks and reselling wired and wireless telecommunications services (except satellite) to businesses and households. Establishments in this industry resell telecommunications; they do not operate transmission facilities and infrastructure. Mobile virtual network operators (MVNOs) are included in this industry.

Cross-References. Establishments primarily engaged in--

Operating and maintaining wired telecommunications networks--are classified in Industry 517110,

Wired Telecommunications Carriers;

Operating and maintaining wireless telecommunications networks--are classified in Industry

517210, Wireless Telecommunications Carriers (except Satellite); and

Reselling satellite telecommunications services--are classified in Industry 517410, Satellite Telecommunications.

517919 All Other Telecommunications US

This U.S. industry comprises establishments primarily engaged in providing specialized telecommunications services, such as satellite tracking, communications telemetry, and radar station operation. This industry also includes establishments primarily engaged in providing satellite terminal stations and associated facilities connected with one or more terrestrial systems and capable of transmitting telecommunications to, and receiving telecommunications from, satellite systems. Establishments providing Internet services or voice over Internet protocol (VoIP) services via client-supplied telecommunications connections are also included in this industry.

Illustrative Examples:

Dial-up Internet service providers

VoIP service providers, using client-supplied telecommunications connections

Internet service providers using client-supplied telecommunications connections (e.g., dial-up ISPs)

Satellite tracking stations

Cross-References. Establishments primarily engaged in--

Providing wired broadband Internet services via own operated telecommunications infrastructure--are classified in Industry 517110, Wired Telecommunications Carriers;

Providing wired VoIP services via own operated telecommunications infrastructure--are classified in Industry 517110, Wired Telecommunications Carriers;

Providing expert advice in the field of information technology or in integrating communication and computer systems--are classified in Industry 54151, Computer Systems Design and Related Services; and

Providing satellite telecommunications services--are classified in Industry 517410

Appendix 3 : Overview of Product Classifications

CPA 2008 - Structure and explanatory notes

61.10.1 Data and message transmitting services

This subcategory includes:

- provision of access to and use of the public switched telephone network for the transmission and switching of voice, data, and video from a fixed customer location or from public and semi-public coin and card operated phones
- inbound and outbound telephony to and from national and international destinations
- calling features bundled with the access service

This subcategory excludes:

- provision of fixed telephony calling features for a separate fee, see 61.10.12
- provision of fixed telephony private line services, see 61.10.13
- provision of a local loop to other wired telecommunications service providers, see 61.10.20
- rental of terminal equipment, see 77.39.14

61.10.11 Fixed telephony services - access and use

This subcategory includes:

- provision of call management services for use from a fixed customer location for a fee, separate from the access fee

This service is made possible by specialised software and database applications linked to telecommunications networks. It includes features such as:

- call waiting, call forwarding, caller identification, three-way calling, call display, call return, call screen, call blocking, automatic call-back, call answer, voice mail and voice menus

61.10.12 Fixed telephony services - calling features

This subcategory includes:

- provision of wired telecommunication link(s) between specified points for the exclusive use of the client

This subcategory excludes:

- provision of private links by a telecommunication carrier to a wired telecommunication service provider, see 61.10.20

61.10.13 Private network services for wired telecommunications systems

61.10.2 Carrier services for wired telecommunications

This subcategory includes:

- provision by a telecommunication carrier of wired facilities to originate, terminate, or transit calls for another telecommunications service provider
- charging for interconnection, settlement or termination of domestic or international calls
- charging long-distance carriers for calls originating at a pay phone or within another carriers local network
- charging for jointly used facilities such as pole attachment
- charging for the exclusive use of circuits

This subcategory excludes:

- carriage of wired Internet traffic by one ISP for another ISP, see 61.10.41

61.10.20 Carrier services for wired telecommunications

61.10.3 Data transmission services over wired telecommunications networks

This subcategory includes:

- provision of access to wired facilities and services specifically designed for the efficient transmission of data on a pay-as-you-use basis

This subcategory excludes:

- provision of wired telecommunication link(s) between specified points for the exclusive use of the client, see 61.10.13

61.10.30 Data transmission services over wired telecommunications networks

61.10.4 Wired Internet telecommunications services

This subcategory includes:

- carrier services of Internet traffic by one ISP for another ISP (generally known in the industry as peering and transit charges)

61.10.41 Internet backbone services

This subcategory includes:

- provision of a direct wired connection to the Internet at speeds below 256 Kbps. The Internet Service Provider (ISP) may also provide free services along with Internet access such as E-mail, space for the customer's web page, tools for simple web page design, chat, and technical support

This service may also include remote access or other types of Internet access and package upgrades such as international roaming and extra E-mail boxes, usually for additional costs to customers.

61.10.42 Narrow-band Internet access services over wired networks

This subcategory includes:

- provision of a direct wired connection to the Internet at speeds 256 Kbps and higher. The Internet Service Provider (ISP) may also provide free services along with Internet access such as E-mail, space for the customer's web page, tools for simple web page design, chat, and technical support.

This service may also include remote access or other types of Internet access and package upgrades such as international roaming and extra E-mail boxes, usually for additional costs to customers.

61.10.43 Broad-band Internet access services over wired networks

This subcategory includes:

- provision of wired telecommunications services over the Internet other than Internet access This includes services such as fax, telephony, audio conferencing and video conferencing over the Internet.

61.10.49 Other wired Internet telecommunications services

61.10.5 Home programme distribution services over wired infrastructure

This subcategory includes:

- providing subscriber access to a basic range of programming services via wired infrastructure generally for a monthly fee

This package contains the minimum number of channels available to subscribers, as defined by each cable operator, and must be purchased to obtain any higher-level programming package. Charges for initial connection to the network, or for reconnection to the network, are included here.

61.10.51 Home programme distribution services over wired infrastructure, basic programming package

This subcategory includes:

- providing subscriber programming services via wired infrastructure in addition to those included in the basic package for a fee separate from, and in addition to, the basic monthly fee

This programming service can be provided in bundles determined by the cable operator or by the subscriber.

61.10.52 Home programme distribution services over wired infrastructure, discretionary programming package

This subcategory includes:

- providing subscribers the ability to view a specific program (movie or event) via wired infrastructure from his home for a fee separate from, and in addition to, the monthly fee for basic or discretionary programming packages

61.10.53 Home programme distribution services over wired infrastructure, pay-per-view

61.20.1 Mobile telecommunications services and private network services for wireless telecommunications systems

This subcategory includes:

- provision of access to, and use of, switched or non-switched networks for the transmission of voice, data, and video where the call originates from or terminates into a portable handset or device, such as cellular, PCS (Personal Communications Services), ESMR (Enhanced Specialised Mobile Radio), and satellite phones; pagers; and mobile radios

- calling features bundled with the access service

- provision of Short Message Service (SMS) and Multimedia Messaging Service (MMS)

This subcategory excludes:

- provision of mobile calling features for a separate fee, see 61.20.12
- provision of wireless facilities for the exclusive use of the customer, see 61.20.13
- provision of wireless facilities to originate, terminate or transit calls for another telecommunications service provider, see 61.20.20
- provision of wireless facilities on a pay-as-you-use basis for the transmission of data to and from fixed locations, see 61.20.30
- provision of a connection to the Internet compatible with mobile devices, see 61.20.4

61.20.11 Mobile telecommunications services - access and use

This subcategory includes:

- provision of call management services for use with a portable handset or device for a fee separate from the access fee. This service is made possible by specialised software and database applications linked to telecommunications networks

It includes features such as:

- call waiting, call forwarding, caller identification, three-way calling, call display, call return, call screen, call blocking, automatic call-back, call answer, voice mail and voice menus

61.20.12 Mobile telecommunications services - calling features

This subcategory includes:

- provision of wireless telecommunication link(s) between specified points for the exclusive use of the client

This subcategory excludes:

- provision of private links by a wireless telecommunication carrier to a telecommunication service provider, see 61.20.20

61.20.13 Private network services for wireless telecommunications systems

61.20.2 Carrier services for wireless telecommunications

This subcategory includes:

- provision by a telecommunication carrier of wireless facilities to originate, terminate, or transit calls for another telecommunications service provider
- charging for interconnection, settlement or termination of domestic or international calls
- charging long-distance carriers for calls originating at a pay phone or within another carriers local network
- charging for jointly used facilities such as pole attachments
- charging for the exclusive use of circuits

This subcategory excludes:

- carriage of wireless Internet traffic by one ISP for another ISP, see 61.20.4

61.20.20 Carrier services for wireless telecommunications

61.20.3 Data transmission services over wireless telecommunications networks

This subcategory includes:

- provision of access to wireless facilities and services specifically designed for the efficient transmission of data on a pay-as-you-use basis

This subcategory excludes:

- provision of wireless telecommunication link(s) between specified points for the exclusive use of the client, see 61.20.13

61.20.30 Data transmission services over wireless telecommunications networks

61.20.4 Wireless Internet telecommunications services

This subcategory includes:

- provision of a direct wireless connection to the Internet at speeds below 256 Kbps. The Internet Service Provider (ISP) may also provide free services along with Internet access such as E-mail, space for the customer's web page, tools for simple web page design, chat, and technical support.

This service may also include remote access or other types of Internet access and package upgrades such as international roaming and extra E-mail boxes, usually for additional costs to customers.

61.20.41 Narrow-band Internet access services over wireless networks

This subcategory includes:

- provision of a direct wireless connection to the Internet at speeds 256 Kbps and higher. The Internet Service Provider (ISP) may also provide free services along with Internet access such as E-mail, space for the customer's web page, tools for simple web page design, chat, and technical support.

This service may also include remote access or other types of Internet access and package upgrades

such as international roaming and extra E-mail boxes, usually for additional costs to customers.

61.20.42 Broad-band Internet access services over wireless networks

This subcategory includes:

- provision of wireless telecommunications services over the Internet other than Internet access

This includes services such as fax, telephony, audio conferencing and video conferencing over the Internet.

61.20.49 Other wireless Internet telecommunications services

61.20.5 Home programme distribution services over wireless networks

61.20.50 Home programme distribution services over wireless networks

61.30.1 Satellite telecommunications services, except home programme distribution services via satellite

This subcategory includes:

- operating, maintaining or providing access to facilities for the transmission of voice, data, text, sound and video using satellite telecommunications infrastructure

This subcategory also includes:

- provision of Internet access by the operator of the satellite infrastructure

61.30.10 Satellite telecommunications services, except home programme distribution services via satellite

61.30.2 Home programme distribution services via satellite

This subcategory includes:

- providing subscriber access to a basic range of programming services via satellite generally for a monthly fee. This package contains the minimum number of channels available to subscribers, as defined by each satellite operator, and must be purchased to obtain any higher-level programming package. Charges for initial connection or for reconnection are included here.

- providing subscriber programming services via satellite in addition to those included in the basic package for a fee separate from, and in addition to, the basic monthly fee. This programming service can be provided in bundles determined by the cable, satellite or MDS operator, in bundles determined by the subscriber, or a la carte.

- providing subscribers the ability to view a specific program (movie or event) via satellite from his home for a fee separate from, and in addition to, the monthly fee for basic or discretionary programming packages

61.30.20 Home programme distribution services via satellite

61.90.1 Other telecommunications services

This subcategory includes:

- provision of specialised telecommunications applications, such as satellite tracking, communications telemetry, and radar station operations

- operation of satellite terminal stations and associated facilities operationally connected with one or more terrestrial communications systems and capable of transmitting telecommunications to or receiving telecommunications from satellite systems

- provision of Internet access over networks between the client and the ISP not owned or controlled by the ISP, such as dial-up Internet access etc.

- provision of telephone and Internet access in facilities open to the public

- provision of telecommunications services over existing telecom connections:

• VOIP (Voice Over Internet Protocol) provision

- provision of network capacity without providing additional services

- provision of telecommunications services n.e.c., such as telegraph, telex and audio conferencing bridging services

61.90.10 Other telecommunications services

Appendix 4 : Overview of International Progress

The 23rd Voorgburg group meeting in Aguascalientes, Mexico in 2008 presented the results from a survey of 33 participating countries. The survey asked countries to report on their progress in developing services statistics. One sub-component of the survey dealt with the development of turnover and SPPI data for telecommunications. Specifically, questions were asked about the level of detail by industry and by commodity for which data were produced by the responding country. Industry was defined under the International Standard Industrial Classification (ISIC), and product was defined under the Central Product Classification (CPC). Countries were also asked to provide information on the alignment of their turnover and price data.

Summary Results of Voorburg Survey in number of countries

Category	6110	6120	6130	6190
1. Countries responding	20	20	20	20
2. SPPI detail <i>currently</i> available is greater than or equal to the CPC detail	3	3	0	2
3. SPPI detail <i>soon to be available</i> will be greater than or equal to the CPC detail	0	1	0	0
4. Turnover detail <i>currently</i> available is greater than or equal to the CPC detail	4	3	3	3
5. Turnover <i>soon to be available</i> will be greater than or equal to the CPC detail	2	2	1	1
6. Industry-level prices calculated	15	15	1	4
7. Industry-level turnover collected	11	11	8	9
8. Detailed turnover and prices well aligned	2	2	0	1
9. Detailed turnover and prices well aligned <i>soon</i>	0	0	0	0
10. Industry-level turnover and prices aligned	7	7	1	1
11. Industry-level turnover and prices aligned <i>soon</i>	3	3	2	2
12. Other-no industry coverage for prices and/or turnover	8	8	17	16

For the two main classes (6110 and 6120), of the 20 countries who responded, 15 produce industry level prices indexes and 11 collect industry turnover data. The level of detail is limited in both cases, however. At the product dimension, only 6 or 5 out of the 20 countries indicated that their turnover detail currently available either was or would soon be greater than or equal to the CPC detail. In terms of current Services Producer Price Index (SPPI) detail, only 3 countries produce detail greater than or equal to the CPC detail. Internationally there is a low degree of alignment of detailed turnover and prices data. Only 2 countries reported that they collected detailed and well-aligned turnover and prices data, although 10 countries did indicate that their industry-level turnover and prices data were either currently aligned or would soon be aligned. Based on the results of the OECD-Eurostat 2005 Inquiry on National Collection of Services Producer Prices, 28 countries currently produce or are developing an SPPI for this service. These countries collect unit value or list prices.