

Telecommunications Services

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INTRODUCTION

1. This paper presents an elaboration of the CPC for Telecommunications services. Before going out to respondents to test the classification, it was decided to establish the precise content of the classes and to define them.
2. This was done by analysing some annual reports, marketing documentation and the detailed operating revenue accounting structures of businesses in the industry, and such general background documentation as was available.
3. In examining each class it was found useful to elaborate some classes, to merge two classes into a wider class and to adopt a different approach to the breakdown of one class. An explanation of why these changes were regarded as necessary is provided in paragraphs 14 to 20 below.
4. The proposal is presented in the form of an alternative classification to the CPC at the three and four digit levels. It is proposed that radio and television cable services be separated into a different three digit class because they have different characteristics to those of the services included under the other four digit classes.
5. The purpose of listing classes at the five and six digit level is to detail the content of the main classes for the purpose of defining them. They are not being proposed for the CPC though we shall be examining the possibility of collecting some or all of the more detailed information in Canada.
6. This elaboration and definition of CPC classes is presented for discussion. It is suggested that countries who will be

testing the implementability of the CPC might like to examine the suitability of adopting these definitions for the content of the classes.

BACKGROUND

7. The approach taken in interpreting the classification is that it categorizes transactions between telecommunication carriers and their clients.
8. Telecommunication carriers provide their clients with access to and use of network facilities adapted to meet their communication needs. These needs can be expressed in terms of the type(s) of communication the network can handle, its capacity in terms of volume and speed of transmission and finally the possible destination of the transmission (specific points or wide access). For example, the communication needs of an enterprise which does not make numerous calls to the same locations and does not transmit significant volumes of data can be met by subscribing to the basic public telephone service. On the other hand, an enterprise which regularly transmits large volumes of data between specific points can meet its requirements more efficiently (both from a technical and cost point of view) by leasing a dedicated data network.
9. The approach adopted to delineate classes was therefore to identify network services (or a family of similar services) with sufficiently unique characteristics in terms of the type(s), volume, speed and pattern of communication provided to be marketed and priced separately.
10. The delineation of some classes was influenced by the particular pricing practices in use in Canada. The distinction between local (75211) and long distance (75212) telephone services, for example, is largely based on this criterion. It can be argued that these services are not

intrinsically different. The types of communication and the volume and speed at which they can be transmitted are the same for both services. The difference between these services lies in the distance of the communications (which is becoming a less significant factor with the use of satellite technology) and, more importantly, in their pricing. Local services are available for a flat monthly fee independently of the number of calls made while long distance services are priced on a per call basis where time and distance influence the charge. These pricing conventions are in place in many but not all countries. Where these conventions are used, the distinction is useful for deflation purposes.

11. The "pricing convention factor" was also one of the criteria used to delineate the following classes:
 - (a) All 6-digit breakouts of classes 75211 - Public local telephone services, 75212 - Public long distance services and 75231 - Data network services
 - (b) The 5-digit breakouts of class 7522 - Business telephone network services

THE CURRENT CPC PROPOSAL AND THE PROPOSED ALTERNATIVE

12. The relationship between the classes of the proposed classification and the 4-digit classes of the current CPC is as follows:

CPC	Proposed Classification
7521 Telephone services	7521 Public telephone services 7522 Business telephone network services
7522 Telegraph services	7523 Data and message transmission services
7523 Data transmission services	
7524 Radio and television cable services	753 Radio and television cable services
7525 Sound and images transmission services on a fee or contract basis	7524 Program transmission services 7525 Interconnection services
[75251 Sound and images transmission services by satellite	
75252 Other sound and images transmission services via air	
75253 Other sound and images transmission services via cable]	
7529 Other telecommunications services	7526 Integrated telecommunication services 7529 Other telecommunication services
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	754 Telecommunications related services

13. Since definitions are not yet available for the CPC classes, the above conversion table is based on an interpretation of their intended coverage. The main differences between the CPC and the proposed classes are reviewed below.
14. CPC 7521 - Telephone services has been further elaborated into two 4-digit categories for the following reasons:

(a) There is an intrinsic difference between public telephone services and business telephone network services. The former allows the user to communicate with all other users connected to the public network while the latter provides the ability to communicate to specific points only. As a result, users of business telephone network services are large businesses and institutions who need to communicate frequently between specific locations.

(b) In Canada, public local and long distance services are "monopoly" services, that is, offered by one carrier only in a given territory. The business telephone network services market however is increasingly competitive; suppliers include major carriers as well as resellers. The classification should support the observation of these distinct markets since they are both statistically significant and likely to grow at different rates.

15. In the CPC, telegraph services are separated from data transmission services but there are in fact other competing services for the electronic transmission of messages.

It is suggested that there should be one category for Data and message transmission services. This category can then consist of the two types of services, data network services and electronic messaging and information services. Telegraph services are then part of the latter group together with competing services such as Telex, etc.

16. Radio and television cable services are given a separate three digit class (753) in the proposed classification in order to emphasize the different nature of these services. Suppliers of radio and television cable services, in contrast to telecommunication carriers, do not generate revenues by selling access to and use of their network facilities but rather by selling television and radio programming packages for a flat monthly fee. ¹

[This difference is explicitly recognised in the Canadian SIC. Cable companies form a separate industry (4814) and are grouped, at the 3-digit level, with other broadcasting industries. Telecommunication carriers form a distinct industry (4821) and industry group.]

17. It is our view that it is not possible to distinguish transmission on a fee or contract basis by type of technology employed (see CPC 75251, 252 and 253) because most carriers use and fully integrate a combination of technologies.

It happens that satellite transmission services over the domestic territory could be isolated in Canada since the only domestic satellite carrier (Telsat) does not operate other types of transmission systems. However, it is likely to be more difficult to obtain information for international communications by satellite. Canada's international carrier (Teleglobe) operates a cable and a satellite system and most transmission it handles can be routed through either system. In fact clients of Teleglobe do not buy satellite or cable services but rather buy access to and use of facilities that carries a communication to its destination.

The distinction between cable and microwave services is even more problematic. Most carriers fully integrate these different systems.

18. The alternative that we propose is to classify transmission services on a fee or contract basis in two broad categories,

namely program transmission (7525) and interconnection services(7526). The former includes transmission services provided by carriers to broadcasters and the latter includes the transmission services provided by carriers to other carriers when a communication (of any type) originating in one carrier's territory must travel through another carrier's network in order to reach its destination. Program transmission services are given a separate class for the following reasons:

- (a) The nature of the information transmitted is different;
- (b) It constitutes a distinct market, that is, these services are provided to a distinct group of customers;
- (c) The transactions for these services are very significant. For example, more than half of Canada's domestic satellite carrier operating revenues (of more than \$100 million) come from the sale of program transmission services. Other carriers also offer this service.

The last two arguments are also the justification for a separate class for Interconnection services.

- 19. A new class is proposed for integrated telecommunications services (split from CPC 7529 - Other telecommunication services) to accomodate the most sophisticated private business network services now available. These networks are very flexible in that they can be used to transmit voice, data and/or image simultaneously or alternatively. Although the use of this type of service is not yet widespread, it will likely gradually replace the traditional separate private telephone and data network services (class 75222 and 752312).
- 20. An additional class (754) is proposed for telecommunication related services which do not seem to be accounted for in the CPC. It includes services which are not, strictly speaking, telecommunication services such as the rental, sales and

maintenance of telecommunication equipment and consulting services on matters related to telecommunication and telematic. These services are also offered by producers classified to other industries (e.g. retail and management consulting). However, Telecommunication carriers may be the most important providers of these services. If such is the case, and if separate establishments providing these services cannot be delineated within telecommunication enterprises, these services should be treated as primary outputs of the telecommunication industry.

CLASSIFICATION STRUCTURE

752 Telecommunications services

7521 Public telephone services

- 75211 Public local telephone services
 - 752111 Basic service - residence
 - 752112 Basic service - business
 - 752113 Payphone service
 - 752114 Centrex service
 - 752119 Other services
- 75212 Public long distance telephone services
 - 752121 Basic service - residence
 - 752122 Basic service - business
 - 752123 WATS type services
 - 752124 Specialty services
 - 752129 Other services
- 75213 Mobile telephone services

7522 Business telephone network services

- 75221 Shared network services
- 75222 Dedicated network services

7523 Data and message transmission services

- 75231 Data network services
 - 752311 Public data network services
 - 752312 Dedicated data network services
- 75232 Electronic messaging and information services
 - 752321 Telegraph services
 - 752322 Telex/TWX services
 - 752323 Value added network services
 - 752329 Other messaging services

7524 Program transmission services

- 75241 Television broadcast transmission services
- 75242 Radio broadcast transmission services

7525 Interconnection services

7526 Integrated telecommunication services

7529 Other telecommunication services

75291 Paging services

75292 Teleconferencing services

75299 Other

753 Radio and television cable services

754 Related services

7541 Equipment rental services

7542 Equipment sales services

7543 Connection services

7544 Consulting services

7545 Maintenance services

7549 Other services

Explanatory Notes

752 Telecommunication services

7521 Public Telephone services

- 75211 Public local telephone services - The provision of the switching and transmission services necessary to establish and maintain communications within a local calling area. This service is primarily designed (used) to establish voice communications but may serve other applications such as text communication (facsimile or teletex) and is generally provided for a flat monthly fee independently of the number of calls made by the subscriber. This category does not include the provision of private line services or the rental of terminal equipment (class 7522 and 7531).
- 752111 Basic service - residence - The public local telephone service provided to residential customers.
- 752112 Basic service - business - The public local telephone service provided to business customers.
- 752113 Payphone service - The public local telephone service where the outgoing call is made from a payphone.
- 752114 Centrex service - A PBX type service which provides for direct inward dialing to extensions, transfer of incoming calls from one extension to another, and identification of extension telephones for billing of long distance calls placed from extensions.
- 752119 Other service - Public local telephone services not elsewhere classified.

- 75212 Public long distance telephone services - The provision of the switching and transmission services necessary to establish and maintain communications between local calling areas. This service is primarily designed (used) to establish voice communications but may serve other applications such as text communications (facsimile or teletex) and may be provided on a toll or flat rate basis. This service provides the customer with access to the supplier's and connecting carrier's entire telephone network or, in some instances, to a limited number of exchange areas (WATS service).
- 752121 Basic service - residence - The public long distance service provided to residential customers. This service is charged for on a per call basis where the charge is dependent on the time and distance of the communication.
- 752122 Basic service - business - The public long distance service provided to business customers. This service is charged for on a per call basis where the charge is dependent on the time and distance of the communication.
- 752123 WATS type service - A long distance service provided to business customers enabling the subscriber to dial certain distant exchanges on either a flat rate or a measured time basis or to be called from certain exchanges at no cost to the calling party (in-WATS or 800 number).
- 752124 Specialty services - The provision of the network and support services necessary to provide customer sponsored services such as party lines and electronic polling (900 and 976 numbers).
- 752129 Other services - Public long distance telephone services not elsewhere classified.

- 75213 Mobile Telephone Services - A radiotelephone service which, by means of transportable equipment, gives both-way access to the public telephone network or other mobile telephones. Some versions of this service, with proper terminal equipment, may be used to transmit facsimiles as well as voice communications. Air-to-ground and maritime mobile communications services are not included here (class 75299)

7522 Business network services

- 75221 Shared network services - The provision of the network services necessary to establish telephone communications between selected (point-to-point or multi-point) locations (terminals) via a public (shared) network. This type of service is primarily used to establish long distance voice communications but some versions can also accomodate facsimile and data transmission. It is provided on a pay as you use basis at discount rates over regular long distance telephone charges.

- 75222 Dedicated network services - The provision of the network services necessary to establish telephone communications between selected (point-to-point or multi-point) locations (terminals) via private line(s). This type of service is primarily used to establish voice communications between distant PBX's (tie line), between a distant location and a PBX (off premises extension), between a PBX and a distant exchange area (foreign exchange) or between designated telephone sets but may also accomodate data transmission. It is provided on a lease basis.

7523 Data and message transmission services

- 75231 Data network services - The provision of the network services necessary to transmit data between equipment

using the same or different protocols. This service can be provided via a public or dedicated data network.

- 752311 Public data network services - The provision of data network services via a public network. This service is provided on a pay as you use basis where charges can be based on any or a combination of the following factors: time, distance, speed (bps) and/or volume (kilopackets) of information transmitted. Public data network services typically serve applications involving low to medium volumes of data.
- 752312 Dedicated data network services - The provision of data network services via a network dedicated to the customer's use. This service is generally provided on a lease basis. Dedicated data network service typically serve applications involving medium to high volumes of data.
- 75232 Electronic message and information services - The provision of the network and related services (hardware and software) necessary to send and receive electronic messages and/or to access and manipulate information in data bases.
- 752321 Telegraph services - The transmission of written messages by telegraphy.
- 752322 Telex/TWX services - The provision of the network and related services necessary to send and receive written messages between telex/twx terminals.
- 752323 Value-added network services - The provision of the network and support services (hardware or software) necessary to establish "intelligent" computer based communication. This type of service typically offers one or a combination of the following communication applications:

- 1) electronic mail - A communication application which allows users to create, edit, review, send, receive, file, scan and store (E-mail box) messages using word processors, personal computers and similar equipment. This service can also be used in conjunction with postal and courier services (priced separately) to communicate with non-subscribers.
- 2) electronic data interchange - A communication application which allows users (typically trading partners) to exchange business documents such as purchase orders, shipping advices, invoices ... using existing computer equipment.
- 3) gateway to databases - A communication application which provides users a single access point to several public databases with the ability to retrieve, record and file data in their computer memory and send it to other users via electronic messaging.
- 4) electronic bulletin boards - A communication application which allows users to post notices into and read notices from an electronic noticeboard.
- 5) Dataconferencing - A communication application which allows users to hold data conference by sharing the same information on their terminal screens.
- 6) Electronic calendar - A communication application which allows users to organize meetings electronically by providing access to each other's electronic appointment book.
- 7) Voice messaging - A communication application which allows users to send, receive and save spoken messages through an electronic mailbox.

752329 Other message services - Electronic messaging services not elsewhere classified.

7524 Program transmission services

75241 Television broadcast transmission services - The provision of the network services necessary for the transmission of television signals, independently of the type of technology (network) employed. This class does not include satellite-to-cable services where the provider sells T.V. signals via satellite to cable companies (as opposed to selling use of satellite facilities) nor does it include DTH (direct-to-home) satellite services where the provider sells television program packages directly to households located in remote areas.

75242 Radio broadcast transmission services - The provision of the network service necessary for the transmission of audio signals such as radio broadcasting, wired music and loudspeaker service.

7525 **Interconnection services** - The provision of network services by one carrier to another when a communication originating in a carrier's territory must travel through another carrier's network to reach its destination.

7526 **Integrated telecommunication services** - The provision of private point-to-point or multipoint network services which enables the users to simultaneously or alternatively transmit voice, data and/or image. This type of service offers high bandwidth capacity and flexible, customer controlled network reconfiguration to accommodate changing traffic patterns.

7529 Other telecommunication services

- 75291 Paging services - The summoning of a person to the telephone through the use of an electronic pager. This class includes tone, voice and digital display paging services.
 - 75292 Teleconferencing services - The provision of the network and related services necessary to hold a one-way or two-way fully interactive video conference.
 - 75299 Other telecommunication services n.e.c. - The provision of telecommunication services not elsewhere classified. This class includes mobile maritime and air-to-ground communication services.
- 753 Radio and television cable services** - The provision of radio and television programming packages via cable. This class includes both basic and "pay-TV" services.
- 754 Telecommunication related services**
- 7541 **Equipment rental services** - The provision of telecommunication terminal equipment through a rental or lease agreement (generally for a flat monthly fee).
 - 7542 **Equipment sales services** - The retail or wholesale sales of telecommunication terminal equipment.
 - 7543 **Connection services** - The provision of access to telecommunication network services by connecting the customer's premises to the carrier's facilities.
 - 7544 **Consulting services** - The provision of advice and assistance to businesses and/or institutions on matters related to telecommunications and telematics.

7545 Maintenance services - The provision of maintenance services for communications and communications related products on a fee or contract basis. Equipment maintained includes modems, multiplexers, earth stations, micro-computers, peripherals, telex terminals, telephones etc.

7549 Other services n.e.c. - The provision of telecommunications related services not elsewhere classified such as operator services furnished to other carriers, billing and collection services for customer sponsored services etc.