

29th Voorburg Group Meeting on Services Statistics

Dublin, Ireland

September 22-26, 2014

Sector Paper:
Programming and Broadcasting
Activities

Hina Kikegawa

Bank of Japan

The views expressed in this paper are those of the author and do not necessarily represent the position of the Bank of Japan or any other organizations with whom the author may be affiliated.

1.0 Introduction

This sector paper provides a summary of the experiences of Australia, Finland, Malaysia, Turkey, the United States, and Japan as presented and discussed at the 28th Voorburg Group (VG) Meeting along with the results of the VG “Survey of Country Progress.”

This paper aims to provide best practices so that countries developing or revising their programs will have a benchmark or point of reference to work from. The best method for each country will be influenced by market conditions in the country, availability of data sources, and resources within their national statistical institute.

This paper is organized as follows. Section 2 focuses on classifications, Section 3 on turnover statistics, Section 4 on Services Producer Price Indexes, and Section 5 on treatment of this sector in the National Accounts. Section 6 concludes, providing a summary and discussing future issues.

2.0 Classification

The *Programming and Broadcasting Activities* sector covers a wide range of services, such as advertising and programming services. The services are provided to business customers and individuals by radio/TV networks and syndicators.

The services provided by this sector can be bundled with services falling into other sectors such as telecommunications. For example, as a result of digitalization and other technological developments, telecommunication companies these days may operate pay TV networks, while cablecasters may provide internet connection services.

2.1 Industry Classification

Six industry classifications were considered as part of the mini-presentations: the UN *International Standard Industrial Classification* (ISIC Revision 4.0), the *Statistical Classification of Economic Activities in the European Community* (NACE 2008), the *North American Industrial Classification System* (NAICS 2012), the *Australian and New Zealand Standard Industrial Classification* (ANZSIC 2006), the *Malaysia Standard Industrial Classification* (MSIC 2008), and the *Japan Standard Industrial Classification* (JSIC 2007).

The classification session noted three differences between the industry classifications.

First, ISIC, NACE, and MSIC include “Internet provision of broadcasting service,” while NAICS, ANZSIC, and JSIC exclude this service. Second, JSIC contains a breakdown of public and private broadcasters, while other classifications do not. Third, some countries have different subclasses by transmission mode (broadcasting, cable, satellite), and/or by coverage (local, regional, national).

Discussion during the 28th VG meeting suggests that more consideration about the following topics would benefit the measurement of this sector.

- Where to classify “Internet provision of broadcasting”
- Where to classify establishments that bundle broadcasting with telecommunication services
- Greater consistency across international classifications

Detailed descriptions of the industry classifications are provided in Appendix 1.

2.2 Product Classification

Three product classifications were considered as part of the mini-presentations: the *Central Product Classification* (CPC ver.2.0), the *Classification of Products by Activity* (CPA 2008), and the *North American Product Classification System* (NAPCS).

CPC includes product subclasses to distinguish four services: sale of advertising space or time, programming services, broadcasting services, and radio programme production services. CPA and NAPCS include similar product subclasses to identify the above services.

The classification session noted three differences between the product classifications.

First, CPC excludes “Purchase or sale of advertising space or time, on commission” from the *Programming and Broadcasting Activities*, while CPA includes the service. Second, CPC includes “Production services” in this sector, while NAPCS excludes the services. Third, NAPCS has product subclasses to distinguish programming services for “public, noncommercial” and “private, commercial,” while CPC and CPA do not have those subclasses.

Detailed descriptions of the product classifications are provided in Appendix 2.

3.0 Turnover Statistics

3.1 Data Availability

Countries responses to the “Survey of Country Progress” show that the participating countries generally have good turnover data availability. For “Radio broadcasting,” of the twenty-five countries that responded to the survey, two countries compile product-level turnover and twenty-three countries compile industry-level turnover. For “Television broadcasting,” also two countries compile product-level turnover and twenty-three countries compile industry-level turnover.

Table 1: Availability of Turnover Data

ISIC Rev.4	Product-level turnover	Industry-level turnover
6010 Radio broadcasting	2	23
6020 Television broadcasting	2	23

Source: 2013 Voorburg Group Detailed Status Summary Report

Detailed results of the “Survey of Country Progress” are provided in Appendix 3.

The *Programming and Broadcasting Activity* sector is concentrated to different degrees across the presenting countries. For example, this sector is less concentrated in Turkey, where a high number of private enterprises provide radio and television broadcasting. On the other hand, the sector is relatively highly concentrated in France, where a small number of “generalist channels” enterprises produce a large share of the turnover.

3.2 Collection of Data

Turnover data come from a variety of sources in the presenting countries. Those sources include censuses, administrative data, and sample surveys.

Turnover data are collected annually and/or sub-annually.

Annual surveys usually collect not only turnover data but also additional data such as employment, expenses, cost of purchased goods and services, gross investments, etc. Annual surveys are a mixture of census and sample based collections.

In the EU countries, the Structural Business Statistics (SBS) surveys collect the above information under the SBS legislation. In other countries, original surveys such as the Survey of Services Establishments in Malaysia and the Basic Survey on the Information and Communications Industry in Japan collect the information.

Sub-annual (monthly/quarterly) surveys usually collect information on a more limited number of data.

Sub-annual surveys are usually sample based collections.

3.3 Data Issues

The turnover session raised four output/turnover measurement issues.

3.3.1 Output of public broadcasters

The measurement method for output of public broadcasters depends on the source of revenues. Finland had measured output based on license fees until 2012 when the fees were replaced with a special tax based on income. Since 2013, Finland has been measuring output of public broadcasting based on input costs. The change in funding sources resulted in Finland's public broadcasters being classified as general government rather than non-financial corporations.

3.3.2 Internet broadcasting

The measurement method for internet broadcasting differs across the countries.

Turkey measures the internet broadcasting turnover in the *Programming and Broadcasting Activities* sector, while Japan stated that they measure the turnover not in the sector, but in the *Internet Based Services* sector.

3.3.3 Ancillary units

The measurement method for ancillary units is yet to be discussed.

Malaysia has difficulties in separating out ancillary units, since there are strong connections among ISIC classes 6010 Radio broadcasting, 6020 Television programming and broadcasting activities, and 5911 Motion picture, video and television programme activities.

3.3.4 The value of intellectual property

The measurement method for the value of intellectual property is yet to be discussed.

Finland stated that payments of royalties and license fees to/from other countries are important for domestic production and that the method of measuring radio and television related intellectual property is yet to be discussed.

3.4 Options for Turnover Statistics for the Sector

Table 2 provides an overview of the options for developing or re-developing turnover statistics for this sector. The options are ranked into best, good, and minimum methods based on presentations and discussions during the VG meeting.

Table 2: Options for Developing Turnover Statistics for Programming and Broadcasting Activities

Category	Data Source	Level of Detail Collected	Frequency	Cost	Comment
Best	Survey/Census	Industry turnover <u>and</u> product turnover detail	Annual and/or sub-annual collection	- Most expensive - Highest response burden	- Due to the variety of services provided, what is to be collected in this sector must be considered carefully.
Good	Survey/Census	Industry detail <u>only</u>	Annual and/or sub-annual collection	- Expensive - High response burden	- Industry detail may not be sufficient to delineate sources of revenue.
Minimum	Administrative (tax data, industry association data, etc.)	Industry detail only	Annual collection	- Least expensive - Little respondent burden	- Suitability for turnover measurement must be checked carefully.

4.0 SPPI

4.1 Data Availability

Although turnover data availability was high, only eight of the twenty-five countries that responded to the “Survey of Country Progress” compile the SPPIs for the *Programming and Broadcasting Activities* sector. For “Radio broadcasting,” three countries compile product-level SPPIs and five countries compile industry-level SPPIs. For “Television broadcasting,” also three countries compile product-level SPPIs and five countries compile industry-level SPPIs.

Pricing methods discussed during the VG meeting were based on a limited set of experiences but are useful to consider.

Table 3: Availability of SPPI Data

ISIC Rev.4	Product-level SPPI	Industry-level SPPI
6010 Radio broadcasting	3	5
6020 Television broadcasting	3	5

Source: 2013 Voorburg Group Detailed Status Summary Report

Detailed results of the “Survey of Country Progress” are provided in Appendix 3.

4.2 Sources of SPPI data

Price data for this sector are usually collected via dedicated SPPI survey programs.

The use of the CPI as a proxy for the SPPI has some limitations in this sector, in that the CPI covers only households. Pricing mechanisms for households may differ from those for businesses.

4.3 Target Coverage

Conceptually, price collection in this sector can be divided into the collection of prices in four types of transactions: business to business (B2B), business to consumer (B2C), business to export (B2E), and business to all (B2All). The services in this sector are provided to a variety of customers and the pricing mechanism may differ depending on the type of customers.

France distinguishes the services in terms of the types of market: “TV programs (fees for broadcasting programs)” and “Advertising time sold to media marketers” are classified as falling into the B2B market, while “pay TV” and “Public fee” are classified as falling into the B2C market. France compiles the price indexes separately and aggregates those indexes in the “Television Programming and Broadcasting” SPPI. The United States does not distinguish services in terms of the types of markets and produces B2All SPPIs.

4.4 Pricing Methods used

The *Programming and Broadcasting Activities* sector consists of three major services: advertising services, programming services, and public broadcasting services.

The selection of the pricing method will depend on the type of pricing mechanisms used for a particular service.

Advertising services are usually priced per spots, per program. The Unit Value method is used in France and the United States.

Programming services are usually priced per program, per month. The Contract Price method is used in France and the United States.

For public broadcasting services, when those services are financed by taxes, the general challenge is to identify appropriate market prices. Australia introduced three methods: input cost factors, costs per unit of outputs, and the output price of commercial TV broadcasting as a proxy. Australia does not currently compile an SPPI for this sector, but those approaches are useful to consider.

When public broadcasting services for final consumption are financed by license fees, the services are assumed that the price is given by the license fee per household.

In France, the Unit Value method is used for final consumption of public broadcasting services.

4.4.1 Advertising services – Unit Value method

Advertising prices are highly negotiable, leading to a wide range of prices for the same type of transaction in a given month.

The Unit Value method surveys the value of a stratified group of similar services. The method generally reflects discounting and competitive pricing more comprehensively than the prices of single transactions. The United States calculates the Unit Value as a monthly average spot rate for a specific type of advertisement aired at a specific time.

Example of price calculation:

$$\text{Unit value} = \frac{\text{Revenue for local 30 second spots aired weekdays 6-10 AM}}{\text{Number of local 30 second spots aired weekdays 6-10 AM}}$$

The Unit value method can be used in cases where services in a group are sufficiently homogeneous. If it were not the case, changes in reported prices would be erroneously recorded as pure price changes.

4.4.2 Programming services – Contract Price method

Programming services are usually priced as flat fees per month, per year.

The Contract Price method surveys the prices of specified single transactions. The method reflects actual transaction prices.

France collects the Contract Price by specifying the representative program, distributor, etc.

Example of services specification:

EUROSP, France, Annual fee for distribution by Orange (Internet and mobile phone provider)

The Contract price method can be used when the specified services remain representative. If it were not the case, changes in reported prices would not reflect price developments in the *Programming and Broadcasting Activities* sector as a whole.

4.4.3 Public broadcasting services – three methods for pricing public broadcasters’ output

When public broadcasting services are financed by taxes, the general challenge is to identify appropriate market prices.

Australia presented the following three methods during the VG meeting.

4.4.3.1 Based on Input Cost Factors

This method calculates a weighted average of all cost factors. For each program, the total cost is broken down into a number of cost factors, namely, labor cost, various resources, and intermediate inputs. For each factor, a price index is compiled from sample data or where possible existing price indexes may be used as a proxy.

The input cost method can be used in cases where the price based on input costs reflects market prices, and the productivity in this sector remains constant.

4.4.3.2 Costs per Unit of Outputs

This method calculates the weighted average of unit costs for all categories as a proxy for the average output price. The method calculates unit cost by dividing the total cost of broadcasting programs in a particular category by the total hours of programs broadcast.

The method is generally regarded as more robust than the method based on Input Cost Factors. In principle, it can capture changes in productivity.

4.4.3.3 Output Price of Commercial TV Broadcasting

This method uses the output price of commercial TV broadcasting. The method can be used in cases where public broadcasters operate and price their services in the same way as commercial broadcasters.

4.4.4 Public Broadcasting Services for Final Consumption – Unit Value method

When public broadcasting services for final consumption are financed by license fees, the services are assumed that the price is given by the license fee per household.

France calculates the Unit Value using the monthly license fee per household.

Example of price calculation:

$$\text{Unit value} = \frac{\text{License fees paid to public TV channels}}{\text{Number of household in France}}$$

4.5 Weights

The types of weights used vary depending on whether product-level SPPIs or industry-level SPPIs are compiled. Product-level SPPIs require product-level weights calculated using product-level turnover data, while industry-level SPPIs require industry-level weights calculated using industry-level turnover data.

Turnover and prices should be well aligned when compiling SPPIs. However, only one country reported that detailed turnover and prices are well aligned and four countries reported that industry-level turnover and prices are aligned. The majority of countries reported that turnover and prices are not yet aligned.

Detailed results of the “Survey of Country Progress” are provided in Appendix 3.

4.6 Main Issues in Price Measurement

The prices session raised four price measurement issues.

4.6.1 Different Pricing Methods Required for Different Business Types

Due to the existence of different business types in this sector, different pricing methods are required for price measurement as described in 4.4. The selection of pricing method will depend on the type of pricing mechanism used for a particular service.

4.6.2 Pricing Methods for the Public Broadcasting Services

The pricing of public broadcasting services is yet to be discussed. Australia presented the three pricing methods (see.4.4.3), but there is still room for discussion. The selection of the pricing method depends on the method of measuring output of public broadcasting in the National Accounts.

4.6.3 Pricing Bundled Services

The Pricing of bundled services is yet to be discussed. The presenters stated that TV broadcasting services are bundled with other services, usually with telecommunications (e.g. TV on mobile phones). The method of unpacking the bundled services and pricing each service is yet to be discussed.

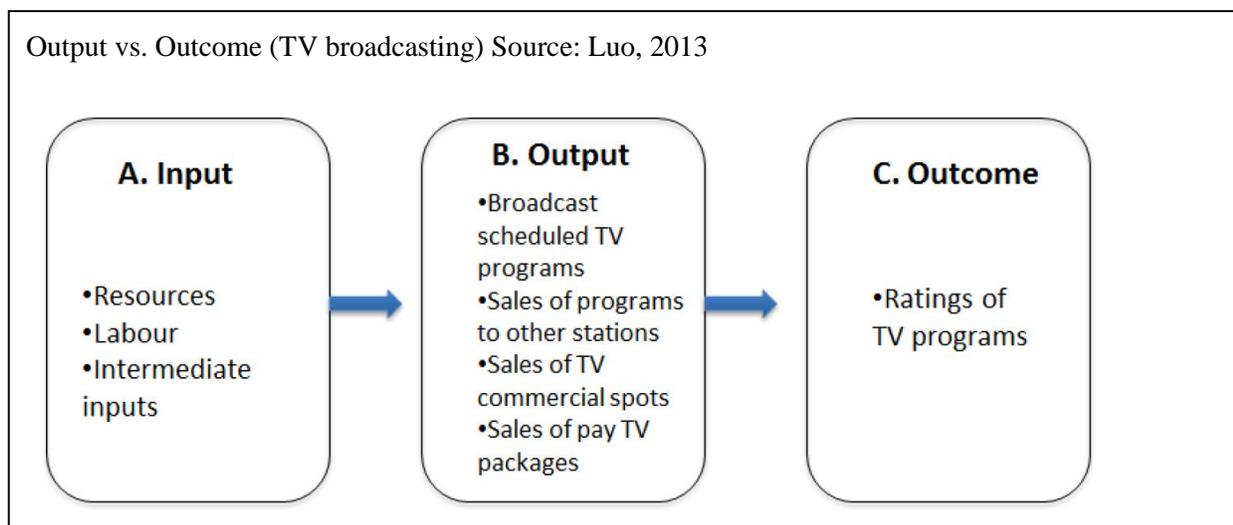
4.6.4 Quality Adjustments

Quality adjustments are yet to be considered.

Whether audience size should be used for quality adjustment has been discussed in recent years (e.g. Pegler et al, Loranger, 2012). However, the theoretical issue remains unresolved.

In practice, France has developed but not yet implemented quality adjustment based on audience size. The United States does not implement quality adjustment based on audience size. The United States recognizes that there is no consistent relationship between audience size and the cost of providing the programming in which the advertisements are aired.

Australia highlighted the conceptual differences in “outputs” versus “outcomes.” Output is the result of production, i.e., what are produced. Outcome is a value derived from consumers ratings.



The “output” base quality adjustment assumes that the outcome (=ratings of TV programs) plays no role in production. Audience size does not need to be taken into account.

The “outcome” base quality adjustment assumes that the outcome (=ratings of TV programs) plays an important role in production. Audience size may need to be taken into account.

The following hypothetical example shows the effect of the two different approaches.

		Period 1	Period 2
(i)	Cost per second spot (thousand dollars)	10	21
(ii)	Audience reach (thousand)	1,000	2,000
(iii)	Cost per 1000 impacts (i)/(ii)	10	10.5
(iv)	Price index without any quality adjustment	100	210
(v)	Price index with “output” base quality adjustment	100	210
(vi)	Price index with “outcome” base quality adjustment	100	105

The “output” base quality adjustment treats the increase in cost per second spot as a pure price movement ((v) price index: 100→210). The “outcome” base quality adjustment treats the increase in revenue due to larger audience size mainly as an increase in the volume output ((vi) price index: 100→105).

4.7 Options for Pricing Methods for the Sector

Table 3 provides an overview of the options for developing or re-developing SPPIs for this sector. Each method has its own advantages and disadvantages. The best method for each country is influenced by market conditions, availability of data sources, and resources within their national statistical institute.

Table 3: Options for Developing SPPIs for the Programming and Broadcasting Activities

Data Source	Services	Pricing Mechanism	Pricing Method	Comment
PPI surveys	Advertising services	Per spot, per program	The Unit Value method	<ul style="list-style-type: none"> - This method reflects discounting and competitive pricing more comprehensively than the prices of single transactions. - The method can be used in cases where services in a group are sufficiently homogeneous.
	Programming services	Per program, per month	The Contract Price method	<ul style="list-style-type: none"> - This method collects actual transaction prices. - The method can be used in cases where the specified services remain representative.
	Public broadcasting services	Financed by taxes	Input Cost Factors, Unit Costs,	<ul style="list-style-type: none"> - This method can be used in cases where the price determined based on costs reflects market prices.
			Market Properties	<ul style="list-style-type: none"> - This method can be used in cases where public broadcasters operate and price their services in the same way commercial broadcasters do.
		Financed by license fees	The Unit Value method	<ul style="list-style-type: none"> - This method reflects discounting and competitive pricing more comprehensively than the prices of single transactions. - The method can be used in cases where services in a group are sufficiently homogeneous.
CPI	Commercial TV, Public broadcasting	Per subscriber	CPI as a proxy (Direct use of prices of repeated services)	<ul style="list-style-type: none"> - This method costs little. - The CPI only covers households.

5.0 Treatment of This Sector in the National Accounts

The System of National Accounts does not provide specific guidance on measuring the output of the *Programming and Broadcasting Activities* sector.

In practice, turnover and price statisticians need to consider how national accounts in each country measure current price outputs for this sector.

6.0 Summary of Main Conclusions

Regarding the *Programming and Broadcasting Activities* sector, the following issues need to be considered.

Classifications:

- Where to classify “Internet provision of broadcasting”
- Where to classify establishments that bundle broadcasting with telecommunication services
- Greater consistency across international classifications

Turnover measurement:

- Public broadcasters
- Internet broadcasting
- Ancillary units
- The value of intellectual property

Price measurement:

- Different pricing methods required for different businesses types
- Public broadcasting services
- Bundled services
- Quality adjustments

More consideration regarding the above issues would benefit the measurement of this sector, as the *Programming and Broadcasting Activities* sector continues to evolve.

Appendix 1 Overview of Industry Classification

ISIC Rev.4

J: Information and Communication

60: Programming and broadcasting activities

601: Radio broadcasting

6010: Radio broadcasting

602: Television programming and broadcasting activities

6020: Television programming and broadcasting activities

NACE Rev.2

J: Information and Communication

60: Programming and broadcasting activities

60.1: Radio broadcasting

60.10: Radio broadcasting

60.2: Television programming and broadcasting activities

60.20: Television programming and broadcasting activities

NAICS United States 2012

51: Information

515: Broadcasting (except Internet)

5151: Radio and Television Broadcasting

51511: Radio Broadcasting

515111: Radio Networks

515112: Radio Stations

51512: Television Broadcasting

515120: Television Broadcasting

5152: Cable and Other Subscription Programming

51521: Cable and Other Subscription Programming

515210: Cable and Other Subscription Programming

519: Other Information Services

5191: Other Information Services

51913: Internet Publishing and Broadcasting and Web Search Portals
519130: Internet Publishing and Broadcasting and Web Search Portals

ANZSIC 2006

J: Information Media and Telecommunications
56: Broadcasting (except Internet)
561: Radio Broadcasting
5610: Radio Broadcasting
562: Television Broadcasting
5621: Free-to-Air Television Broadcasting
5622: Cable and Other Subscription Broadcasting
57: Internet Publishing and Broadcasting
570: Internet Publishing and Broadcasting
5700: Internet Publishing and Broadcasting

MSIC 2008

J: Information and communication
60: Programming and broadcasting activities
601: Radio broadcasting
6010: Radio broadcasting
60100: Radio broadcasting
602: Television programming and broadcasting activities
6020: Television programming and broadcasting activities
60200: Television programming and broadcasting activities

JSIC 2007

G: Information and Communications
38: Broadcasting
381: Public broadcasting, except cablecasting
3811: Public broadcasting, except cablecasting
382: Private-sector broadcasting, except cablecasting

3821: Television broadcasting, except satellite broadcasting
3822: Radio broadcasting, except satellite broadcasting
3823: Satellite broadcasting
3829: Miscellaneous private-sector broadcasting
383: Cablecasting
3831: Cable television broadcasting
3832: Cable radio broadcasting
40: Internet based services
401: Internet based services
4012: Application service contents provider

Appendix 2 Overview of Product Classification

CPC ver.2

836: Advertising services and provision of advertising space or time
8363: Sale of advertising space or time (except on commission)
83632: Sale of TV/radio advertising time (except on commission)
846: Broadcasting, programming and programme distribution services
8461: Radio and television broadcast originals
84611: Radio broadcast originals
84612: Television broadcast originals
8462: Radio and television channel programmes
84621: Radio channel programmes
84622: Television channel programmes
8463: Broadcasting services and multi-channel programme distribution services
84631: Broadcasting services
84632: Home programme distribution services, basic programming package
84633: Home programme distribution services, discretionary programming package
84634: Home programme distribution services, pay-per-view
961: Audiovisual and related services
9612: Motion picture, videotape, television and radio programme production services
96121: Motion picture, videotape and television programme production services
96122: Radio programme production services

CPA 2008

- 60.10.30: Radio advertising time
- 60.10.12: Radio broadcasting originals
- 60.20.20: Television broadcast originals
- 60.10.20: Radio channel programmes
- 60.20.31: Television channel programmes, except for subscription television
- 60.20.32: Subscription television channel programmes
- 60.20.11: On-line television programming and broadcasting services, except by subscription
- 60.20.12: Other television programming and broadcasting services, except by subscription
- 60.20.13: On-line television subscription programming and broadcasting services
- 60.20.14: Other television subscription programming and broadcasting services
- 61.10.51: Home programme distribution services over wired infrastructure, basic programming package
- 61.10.52: Home programme distribution services over wired infrastructure, discretionary programming package
- 61.10.53: Home programme distribution services over wired infrastructure, pay-per-view
- 61.20.50: Home programme distribution services over wireless networks
- 61.30.20: Home programme distribution services via satellite
- 59.11.11: Motion picture production services
- 59.11.12: Promotional or advertisement motion picture and video production services
- 59.11.13: Other television programme production services
- 59.20.21: Radio programme production services

NAPCS

- 51211.2: Production services for audiovisual works protected by copyright
- 51229.1.3: Studio recording services for radio material
- 515.1.1: Television air time
- 515.1.2: Radio air time
- 515.1.3.1: Public and non-commercial programming services, television
- 515.1.3.2: Public and non-commercial programming services, radio
- 515.1.4.1: Basic programming package
- 515.1.4.2: Premium programming package

515.1.4.3: Pay-per-view and video-on-demand

515.1.5.1: Licensing of rights to broadcast specialty television programming protected by copyright

515.1.5.2: Licensing of rights to broadcast specialty audio programming protected by copyright

515.1.6.1: Licensing of rights to broadcast television programming protected by copyright (Television Program Rights)

515.1.6.2: Licensing of rights to broadcast radio programs protected by copyright (Radio Program Rights)

Appendix 3 Overview of International Progress

ISIC6010 Radio broadcasting	Survey Categories	# of countries
	a.PPI details>=CPC	3
	b.PPI details>=CPC soon	0
	c.Turnover details>=CPC	2
	d.Turnover details>=CPC soon	0
	e.Industry prices calculated	5
	f.Industry turnover collected	23
	1.Detailed turnover and prices well aligned	1
	2.Detailed turnover and prices well aligned soon	0
	3.Industry level turnover and prices well aligned	4
	4.Industry level turnover and prices well aligned soon	0
	5.Other – no industry coverage for prices and/or turnover, etc.	20

Source: 2013 Voorburg Group Detailed Status Summary Report

ISIC6020 Television broadcasting	Survey Categories	# of countries
	a.PPI details>=CPC	3
	b.PPI details>=CPC soon	0
	c.Turnover details>=CPC	2
	d.Turnover details>=CPC soon	0
	e.Industry prices calculated	5
	f.Industry turnover collected	23
	1.Detailed turnover and prices well aligned	1
	2.Detailed turnover and prices well aligned soon	0
	3.Industry level turnover and prices well aligned	4
	4.Industry level turnover and prices well aligned soon	0
	5.Other – no industry coverage for prices and/or turnover, etc.	20

Source: 2013 Voorburg Group Detailed Status Summary Report

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United Nations Central Product Classification ver 2.0

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EUROSTAT Standard Classification of Economic Activities in the European Community, NACE Rev.2

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EUROSTAT Classification of Products by Activity

http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Glossary:CPA

North American Industrial Classification System

<https://www.census.gov/eos/www/naics/>

North American Product Classification System

<http://www.census.gov/eos/www/napcs/>

Australia and New Zealand Standard Industrial Classification

<http://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0>

Malaysia Standard Industrial Classification

http://www.statistics.gov.my/portal/index.php?option=com_content&id=1492&Itemid=99&lang=en

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