

National Accounts



Satellite Accounts

Draft Information and Communication Technology satellite
account for South Africa, 2005

Discussion document: D0405.3.1

March 2013



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Draft Information and Communication Technology satellite account for South Africa, 2005

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Contents

List of tables	iii
List of abbreviations.....	iv
Key findings	5
1. Introduction	6
1.1 Why a satellite account	7
2. The compilation of the Information and Communication Technology satellite account for South Africa	8
2.1 The Information and Communication Technology sector	9
3. The draft Information and Communication Technology satellite account for South Africa	13
3.1 The Information and Communication Technology satellite account for South Africa, 2005	13
3.1.1 Information and Communication Technology Table 1: Information and Communication Technology share of gross domestic product	14
3.1.2 Information and Communication Technology Tables 2 and 3: Domestic output of Information and Communication Technology products	15
3.1.3 Information and Communication Technology Table 4: Imports and exports of Information and Communication Technology products.....	17
3.1.4 Information and Communication Technology Table 5: Income components of Information and Communication Technology industries	18
3.1.5 Information and Communication Technology Table 6: Supply and use of Information and Communication Technology products	19
3.1.6 Information and Communication Technology Table 7: Capital formation in Information and Communication Technology products.....	21
3.1.7 Information and Communication Technology Table 8: Household final consumption expenditure of Information and Communication Technology products.....	22
3.1.8 Information and Communication Technology Table 9: Employment in the Information and Communication Technology sector	23
4. Conclusion and way forward	25
5. Glossary	26
6. References	28
Annexure 1	30
Annexure 2	32

List of tables

Table 1: Information and Communication Technology share of gross domestic product by Information and Communication Technology related activity, 2005.....	14
Table 2: Domestic output of Information and Communication Technology products by industry, 2005.....	15
Table 3: Domestic output of Information and Communication Technology products by producing industry, 2005.....	16
Table 4: Imports and exports of Information and Communication Technology products by type of product, 2005.....	17
Table 5: Income components of Information and Communication Technology industries, 2005.....	18
Table 6: Supply and use of Information and Communication Technology products, 2005.....	20
Table 7: Capital formation in Information and Communication Technology products, 2005.....	21
Table 8: Household final consumption expenditure on Information and Communication Technology products, 2005.....	22
Table 9: Employment of Information and Communication Technology professionals within industries, 2005.....	24
Table 10: A condensed production account for the ICT sector in South Africa, 2005.....	31
Table 11: Information and Communication Technology products.....	32
Table 12: Information and Communication Technology 'content and media' products.....	36
Table 13: Industries conforming to the Information and Communication Technology sector definition available in the benchmarked Supply and Use tables, 2005.....	40
Table 14: Industries conforming to the Information and Communication Technology 'content and media' definition available in the benchmarked Supply and Use tables, 2005.....	41

List of abbreviations

AFS	Annual Financial Survey
CPC	Central Product Classification
CPPI	Computer and peripherals price indexes survey
DoC	Department of Communications
DST	Department of Science and Technology
GFCF	Gross fixed capital formation
GDP	Gross domestic product
GHS	General Household Survey
GPRS	General packet radio service
GVA	Gross value added
HS	Harmonised System
HFCE	Household Final Consumption Expenditure
ICT	Information and Communication Technology
IEA	Integrated Economic Accounts
IES	Income and Expenditure Survey
ISIC	International Standard Industrial Classification of all Economic Activities
IT	Information Technology
LFS	Labour Force Survey
LSS	Large Sample Survey
nr	Number
OECD	Organisation for Economic Cooperation and Development
QLFS	Quarterly Labour Force Survey
SARB	South African Reserve Bank
SARS	South African Revenue Service
SIC	Standard Industrial Classification of all Economic Activities
SITA	State Information Technology Agency
SNA	System of National Accounts
Stats SA	Statistics South Africa
SU-tables	Supply and Use tables
the dti	Department of Trade and Industry
USAASA	Universal Service and Access Agency of South Africa
WPIIS	Working Party on Indicators for the Information Society

Key findings

The estimated contribution to gross domestic product (GDP) by the Information and Communication Technology (ICT) sector¹, for the reference year 2005 was 4,3%. Of this, telecommunication services is estimated to have contributed 3,4 percentage points. Manufacturing, trade, computer services and activities, and content and media contributed 0,2 of a percentage point respectively toward the total ICT sector GDP.

Total domestic output at basic prices² of the ICT sector for 2005 was R153 691 million, with telecommunication services making the largest contribution (R112 935 million or 73,5%). Estimated gross value added (GVA) for the ICT sector for 2005 was R62 577 million (and 81,0% of the GVA was from telecommunication services). The estimated taxes paid by the ICT sector for 2005 was R4 537 million (2,7% of the total tax for the economy in 2005).

It is estimated that South Africa imports a total of R47 575 million worth of ICT products³, which is 10,9% of the total imports⁴ for South Africa for 2005. South Africa is a net importer of ICT products (the ICT trade deficit is R34 856 million for 2005). ICT products exported for 2005 was R12 719 million (3,0% of the total exports⁵).

The compensation of employees paid by the ICT sector for 2005 totalled R18 287 million, with telecommunication services making the largest contribution to compensation of employees (R11 101 million), followed by computer services and activities (R2 649 million), content and media (R2 507 million) and manufacturing (R2 030 million).

Household final consumption expenditure (HFCE) on ICT products and services was R42 918 million in 2005 (4,3% of the total HFCE for 2005). Telecommunications, broadcasting and information supply services was the major expenditure item (R28 174 million or 65,7% of the total ICT HFCE). Radio, television and communication equipment was the second biggest (R8 360 million or 19,5% of ICT HFCE).

The total employment of ICT professionals within the economy was 38 772 people (0,3% of the total number of employed persons in the economy for 2005).

¹ Including ICT related industries

² Excludes trade margins, transport margins and net taxes on products

³ includes both goods and services

⁴ includes both goods and services

⁵ includes both goods and services

1. Introduction

Information and Communication Technology (ICT) is at the forefront of the modern economy. Computer processing power is increasing exponentially, with technology giving rise to a cultural, social, and productivity shock. Communication has been completely reformed. Cellular telephones and other mobile devices connect individuals and businesses in a way that is not only fast, but accessible. Data are transferred between individuals and businesses seamlessly⁶. Businesses, countries and people are connected like never before and communication has been totally reformed with email systems and online messaging that deliver instant responses.

The ICT sector in South Africa is an important component of the national economy. Technology is involved in almost every facet of the economy – from telecommunications, to increasing productivity in manufacturing with robots, and more efficient computer hardware and software. Despite the importance of the ICT sector in South Africa's and the world's economy, it is not a clearly defined industry, according to the International Standard Industrial Classification of all Economic Activities (ISIC). ICT instead is a component of multiple industries throughout the economy, including manufacturing, business services, trade and telecommunications.

There are multiple components to the ICT sector; however, they are measured through either ICT indicators, which measure the educational part and the socio-economic part, or the ICT satellite account which measures the economic activity through National Accounts data. Statistics South Africa (Stats SA), along with other governmental stakeholders, is working towards creating a compendium of ICT statistics which shall include both ICT indicators and the ICT satellite account.

This discussion document represents the culmination of over three years worth of work, including two publications, published March 2011 and 2012 as discussion documents: *'The status of the Information and Communication Technology satellite account for South Africa'* (discussion document number: D0407). They are available online at www.statssa.gov.za. It is recommended that both discussion documents are consulted for a better understanding of the development of the draft ICT satellite account for South Africa.

The purpose of this discussion document is to supplement the existing discussion document with the following information:

- The compilation methodology of the ICT satellite account for South Africa, 2005;
- The ICT satellite account for South Africa, 2005; and
- The way forward for the ICT satellite account for South Africa.

⁶ Organisation for Economic Cooperation and Development – Guide to Measuring the Information Society (DSTI/ICCP/IIS(2005)6)

1.1 Why a satellite account

In order to measure the ICT sector in an economy from National Accounts data, a satellite account is required. The 1993 System of National Accounts (SNA) recommends the development of satellite accounts for the measurement of economic phenomena that are not explicitly shown in the core set of accounts. A satellite account is an extension of the SNA that allows a component of the national framework to be examined with greater flexibility than the framework of the National Accounts typically allows. The advantage of a satellite account is that it can isolate the ICT supply and demand in various industries. It will define which industries and products⁷ are ICT specific and related; and which industries and products are not ICT related.

Another feature of an ICT satellite account is that it combines monetary aggregates with non-monetary data while still conforming to the SNA standards for the monetary aggregates. There are no recommended guidelines and frameworks for an ICT satellite account. The Organisation for Economic Cooperation and Development (OECD) released guidelines proposing a conceptual model for the information economy⁸. They form the basis for the recommended ICT industries and ICT products used in the draft ICT satellite account for South Africa.

The advantage of a completed draft ICT satellite account is that ICT data included within the National Accounts framework are explicitly estimated. The production, output, GVA and taxes paid by the ICT sector, the GDP contribution of the ICT sector, employment, imports and exports of ICT products, household consumption of ICT products, and investment of ICT products within the economy are attainable values from an ICT satellite account. These values are important to policy-makers, investors and line ministries.

⁷ Products includes both goods and services

⁸ Organisation for Economic Cooperation and Development – Guide to Measuring the Information Society (DSTI/ICCP/IIS(2005)6)

2. The compilation of the Information and Communication Technology satellite account for South Africa

The draft ICT satellite account framework forms the foundation of the draft ICT satellite account. The ICT framework allows for the compilation of the ICT satellite account, by confronting supply and demand. This chapter provides a brief description of the methodology used in compiling the nine tables within the ICT satellite account, and this includes changes that have been made since the previous discussion document was published. It is highly recommended that the previous discussion documents are read in conjunction with this document (please consult the discussion documents⁹: *'The status of the Information and Communication Technology satellite account for South Africa'*, discussion document number: D0407, available at www.statssa.gov.za).

It is assumed that various concepts, approaches and methodologies are understood by the reader. These are all covered in detail in the previous publications. This chapter serves to update the existing documents, with the changes to the methodology required to compile the draft ICT satellite account for South Africa.

The draft ICT satellite account was initiated and developed by Stats SA (with the assistance of an ICT inter-institutional working group). A core requirement of developing the draft ICT satellite account was the identification of ICT industries and products for South Africa. The ICT inter-institutional working group provided feedback allowing Stats SA to create a recommended list of ICT products and an identified ICT sector for South Africa based on guidelines from the OECD¹⁰.

The ICT inter-institutional working group has assisted with the development of the draft ICT satellite account. The ICT inter-institutional working group met quarterly to review the progress of the draft ICT satellite account. The ICT inter-institutional group was chaired by Stats SA and included the following organisations:

- Stats SA;
- Department of Communications (DoC);
- National Treasury;
- Department of Trade and Industry (the dti);
- Department of Science and Technology (DST);
- Universal Service and Access Agency of South Africa (USAASA); and
- State Information Technology Agency (SITA).

⁹ There have been two discussion documents published (March 2011 and 2012) both detailing the progress and development of the Information and Communication satellite account

¹⁰ For a list of the ICT products and industries, please see Annexure 2

International experience was limited in the development of ICT satellite accounts as only two other countries (Australia and Chile) have officially released an ICT satellite account. Stats SA has examined these countries' ICT satellite accounts, along with the work performed by the OECD¹¹ (internal guidelines) on the formation of the first draft South African ICT satellite account. However, because there is limited research in comparison to other satellite accounts, certain assumptions and concepts had to be developed exclusively for use in the context of the South African economy. This is in direct response to South Africa's data availability and the classification systems used.

As there is no established international framework or guideline for the development of an ICT satellite account, it was decided that the South African ICT satellite account should reflect not only the data needs of the stakeholders of ICT but also the data that are available in the country. Therefore it was recommended that at least the following tables be included in a South African ICT satellite account:

- ICT share of GDP;
- Production of ICT products;
- Income components of ICT GVA;
- Imports and exports of ICT products;
- Supply and use of ICT products;
- Capital formation of ICT products;
- Household final consumption expenditure on ICT products; and
- Employed persons.

2.1 The Information and Communication Technology sector

The identification of the ICT sector in South Africa was a crucial step forward in the development of the draft ICT satellite account for South Africa. The identification of the ICT sector is examined in detail in a previous document: *'The status of the Information and Communication Technology satellite account for South Africa'*, discussion document number: D0407, March 2011, available at www.statssa.gov.za.

¹¹ Statistics South Africa *'The status of the Information and Communication Technology satellite account for South Africa'* discussion document (D0407), March 2011

The ICT sector definitions and classifications adopted by Stats SA conform to the OECD international standards and thus maintain international comparability. The ICT definitions used for the draft ICT satellite account are as follows¹²:

- ICT products must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display.
- For the ICT sector, the production (goods and services) of a candidate industry must primarily be intended to fulfil or enable the function of information processing and communication by electronic means, including transmission and display.
- For the 'content and media' sector, the production (goods and services) of a candidate industry must primarily be intended to inform, educate and/or entertain humans through mass communication media. These industries are engaged in the production, publishing, and/or the distribution of content (information, cultural and entertainment products), where content corresponds to an organised message intended for human beings.
- 'Content' corresponds to an organised message intended for human beings published in mass communication media and related media activities. The value of such a product to the consumer does not lie in its tangible qualities but in its information, educational, cultural or entertainment content.

The benchmarked SU-tables (for the reference year 2005) were released in September 2010. The SU-tables are classified according to the Central Product Classification (version 2) and the Standard Industrial Classification of all economic activities 5th edition (SIC). While the SIC has not yet been updated to conform to the ISIC (4th revision), the CPC used within the SU-tables allows a direct link to OECD ICT product recommendations. There are industries classified under the SIC which are no longer directly linked to the newer ISIC (4th revision).

Research was undertaken to identify these industries, based on whether they comply with the ICT sector definition or not. The identification of ICT-specific industries consisted of two stages. Firstly, the ICT products were identified within the SU-tables (any industry producing more than 50%¹³ ICT products was regarded as an ICT-specific industry). The second stage was a filtering process, and this examined each identified industry and determined whether it met with the OECD definition of an ICT industry. If the industry did not, it was excluded from the ICT sector. The same process was undertaken for the content and media¹⁴ sector.

¹² Organisation for Economic Cooperation and Development – Guide to measuring the Information Society, 2009

¹³ Please see previous discussion documents (D0407) for how this percentage was derived.

¹⁴ Content and media is included as a single line item within the draft ICT satellite account for South Africa.

The SU-tables are classified according to the CPC (Version 2) mostly at a two-digit level. The OECD guidelines¹⁵ classify all ICT products at a five digit level (this implies that products on the SU-tables are substantially aggregated when compared to the classifications put forward by the OECD and this is mainly due to product data limitations for South Africa and is a phenomenon not isolated to the ICT sector). The implication of this is that certain non-ICT products are classified within the same CPC product code as ICT products (due to the aggregation). The implications of this aggregation are that certain assumptions need to be made in order to calculate and extract the ICT product data. An example is CPC 73 (Leasing or rental services without operator) which at a two digit level includes all types of leasing and not just ICT products leasing (it would, for example, include the leasing of vehicles and machinery which are clearly not ICT products).

In order to extract ICT products from the aggregated data, certain assumptions are made in the treatment of ICT products:

- It is assumed that ICT products are only produced (in volume) within identified ICT industries that make up the ICT sector. There might be production of ICT products outside the ICT sector, produced as secondary output in other industries. This production is assumed to be very small in volume, and at this stage¹⁶ it cannot be accurately calculated;
- Certain industries meet the OECD ICT sector definition but the volume of ICT products produced is less than 50% of total output. These industries are regarded as ICT related, and while they fall outside the ICT sector, they are included within the GDP calculation. An example of such an industry is trade services;
- In calculating GDP and GVA for the related industries, it is assumed they have a fixed-cost structure, and this implies their cost of output is the same regardless of the product mix produced; and
- In calculating the net taxes and margins it is assumed that the taxes are distributed evenly within an aggregated CPC code and, as a result of this, ICT and non-ICT products are taxed at the same rate.

In order to calculate the estimates of ICT products that were imported and exported, data supplied by the South Africa Revenue Service (SARS) were used to generate ratios that allowed the extraction of import and export data from the aggregated CPC product codes. The same import ratios were used in estimating ICT capital formation¹⁷ (these ratios were chosen because it was assumed that investment formed part of gross fixed capital formation, and as such, most capital goods are imported into South Africa). This is in line with South Africa being a net technology importer and until more detailed data are available, this assumption will be used to estimate ICT capital formation.

HFCE on ICT products was calculated using a weighted ratio between ICT imports and ICT product output from the ICT sector. This ratio was then used to extract the ICT products from aggregated CPC codes. It was assumed that most households purchase a mix of locally produced and imported ICT products. The weighted ratio attempts to estimate this mix of products. Unfortunately at this stage¹⁸ there are insufficient data at a disaggregated level to detail household expenditure to the individual ICT products and their origin of production.

¹⁵ Organisation for Economic Cooperation and Development – Guide to measuring the Information Society, 2009

¹⁶ March 2013

¹⁷ Equivalent to gross fixed capital formation

¹⁸ March 2013

The cornerstone of the ICT framework is the production account. The production account is used to confront supply and demand data. It identifies the ICT sector and isolates it from the rest of economy, allowing for the calculations of domestic output, GDP, GVA and taxes. The production account supplies the data to populate the ICT tables (excluding the employment, imports and exports, and final household consumption expenditure tables). The condensed production account is available as Annexure 1.

ICT Table 6 (Supply and use of ICT products) is the summation of data contained within the ICT satellite account. It is in principle a commodity flow table, and while based on data supplied from the production account, certain assumptions needed to be made. The column non-specific products is the production of non-ICT products produced within the ICT sector and this is included within the ICT GDP. For this publication, there are little data on the flow of software within the economy, and as a result these are not shown. Trade data are based entirely on National Accounts data from the SU-tables. Research into improving trade data is ongoing and at this stage¹⁹ trade data for ICT are based on two industries that were identified as the wholesale and retail trade of ICT products. These industries are unfortunately not exclusive in the trade of ICT products, so as a result they fall under the ICT related industries. Domestic output of these industries is split into retail and wholesale in ICT Table 2 (this is an experimental estimate and should be regarded as such).

The ICT products included within the draft ICT satellite account, along with the identified industries making up the ICT sector are included in Annexure 2. These ICT products and industries were identified and examined in the previous discussion documents (discussion nr: D0407).

The draft ICT satellite account for South Africa includes the following tables²⁰:

1. ICT share of GDP;
2. Domestic output of ICT products, by industry;
3. Domestic output of ICT products, by producing industry;
4. Imports and exports of ICT products, by type of product;
5. Income components of ICT industries;
6. Supply and Use of ICT products;
7. Capital formation in ICT products;
8. Household final consumption expenditure on ICT products; and
9. Employment in the ICT sector.

All figures, calculations, tables and methods are regarded as experimental in nature.

¹⁹ March 2013

²⁰ Some of these tables may appear different to the draft versions published in previous discussion documents; this is due to data considerations and to reflect the ICT sector with better accuracy.

3. The draft Information and Communication Technology satellite account for South Africa

The draft ICT satellite account for South Africa was compiled using 2005 as a reference year. The reason 2005 was chosen is because the benchmarked 2005 SU-tables are the current base year for the GDP; as a result they contain the most detail for products and industries. This is the base year for the draft ICT satellite account. Following any future suggestions and comments from stakeholders, data users and the public, the draft ICT satellite account will be compiled for 2006 to 2011. A decision as to whether it will in future be a yearly publication will be made at a later date, following consultations.

This chapter provides the nine tables within the ICT satellite account. The individual tables will be supplied in Excel format for a more detailed analysis. For further reading on the development of the draft ICT satellite account for South Africa, please consult the discussion document: *'The status of the Information and Communication Technology satellite account for South Africa'*, discussion document number: D0407, available at www.statssa.gov.za.

3.1 The Information and Communication Technology satellite account for South Africa, 2005

The SU-tables form the basis for the draft ICT satellite account, and the data sources that have therefore supplied the draft ICT satellite account are:

- Large Sample Survey (LSS);
- Annual Financial Survey (AFS);
- General Household Survey (GHS); and
- Income and Expenditure Survey (IES)

Data from the South African Revenue Service (SARS) supplied additional ratios for calculating the estimates of imports and exports of ICT products, along with capital formation data estimates.

3.1.1 Information and Communication Technology Table 1: Information and Communication Technology share of gross domestic product

ICT Table 1: ICT share of GDP is the headline table of the ICT satellite account. It contains the calculated values for the ICT contribution to the economy in terms of contribution to the GDP and the ICT gross value added. The primary data source is the ICT SU-tables. Table 1 shows the GDP and GVA at an aggregated level of the ICT sector for 2005.

Table 1: Information and Communication Technology share of gross domestic product by Information and Communication Technology related activity, 2005

	ICT industry output (Rand million)	ICT gross value added (Rand million)	Share of ICT gross value added (%)	Share of total gross value added (%)	ICT GDP (Rand million)	Share of ICT GDP (%)	Share of GDP (%)
ICT-specific activities							
Manufacturing	13 202	3 395	5,0	0,2	3 573	5,0	0,2
Telecommunication services	112 935	50 707	81,0	3,6	53 372	80,0	3,4
Computer services and activities	13 304	3 288	5,0	0,2	3 460	5,0	0,2
Content and media	9 114	3 029	5,0	0,2	3 188	5,0	0,2
ICT related activities							
Trade	4 979	2 136	3,0	0,2	3 216	5,0	0,2
Related industries	156	23	0,0	0,0	305	0,0	0,0
Total	153 691	62 577	100	4,5	67 115	100	4,3

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

The ICT GVA and the GDP are the two economic aggregates that are important for explaining ICT in the economy. The SNA defines GVA as the value of output less the value of intermediate consumption. It measures the value created by production and is measured before the deduction of consumption of fixed capital²¹.

ICT GVA is therefore the value of output of ICT products minus the value of intermediate consumption used while producing ICT products²². ICT GVA can be directly compared with other industries, for example, agriculture. ICT GDP measures ICT GVA at purchaser's prices, as opposed to basic prices for ICT GVA. It allows for comparing with the national GDP as well as a comparison with other countries' ICT GDP figures.

²¹ System of National Accounts 1993

²² Australian Bureau of Statistics – Information and Communication Technology satellite account, 2002

The contribution to the economy (GDP) from the ICT sector²³ was R67 115 million or 4,3% of GDP in 2005. Telecommunication services contributed the most of the ICT GDP (3,4 percentage points). This makes telecommunication services the largest ICT industry by some margin.

The ICT GVA was R62 577 million (or 4,5% of GVA). The domestic output at basic prices for the ICT sector was R153 691 million in 2005.

3.1.2 Information and Communication Technology Tables 2 and 3: Domestic output of Information and Communication Technology products

The domestic output of ICT products provides a supply perspective. ICT Table 2 shows domestic output of ICT by industry for 2005. Industries are grouped at an aggregated level.

Table 2: Domestic output of Information and Communication Technology products by industry, 2005

	(Rand million)
ICT-specific activities	
Manufacturing	13 202
Telecommunication services	112 935
Computer services and activities	13 304
Content and media	9 114
Total	148 556
ICT related activities	
ICT wholesale trade	4 619
ICT retail trade	361
Other manufacturing	152
Related content and media	4
Total	5 135
Total	153 691

*Trade data is an estimate based on National Accounts data

**Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

Total ICT domestic output of the ICT sector at basic prices is R153 691 million. ICT-specific industries produced R148 556 million of domestic output and ICT related industries (including trade) contributed R5 135 million. The largest industry is telecommunication services (domestic output of R112 935 million). The domestic output of trade services is an estimated ICT output.

ICT Table 3 offers an alternate format of ICT domestic output which is grouped by producing industry for 2005

²³ Including related industries

Table 3: Domestic output of Information and Communication Technology products by producing industry, 2005

	Manu- facturing (Rand million)	Telecom- munication services (Rand million)	Computer services and activities (Rand million)	Content and media (Rand million)	ICT related industries (Rand million)	Total (Rand million)
ICT products						
Office, accounting and computing machinery	2 376	0	0	0	0	2 376
Radio, television and communication equipment	6 961	0	0	122	39	7 123
Miscellaneous ICT components and goods	1 639	0	0	0	0	1 639
Leasing or rental services without operator	11	8	495	1 604	718	2 835
Other professional, technical and business services	570	0	11 883	1 062	647	14 162
Telecom- munications, broadcasting and information supply services	0	112 781	0	0	0	112 781
Content and media	1 308	0	104	6 219	3 730	11 361
Non-specific products	338	146	823	107	N/A	1 414
Total	13 202	112 935	13 304	9 114	5 135	153 691

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

The largest ICT product is telecommunications, broadcasting and information supply services at R112 781 million, produced exclusively within the telecommunication services industry.

3.1.3 Information and Communication Technology Table 4: Imports and exports of Information and Communication Technology products

Imports and exports of ICT products are reflected in ICT Table 4. The data were sourced from the ICT SU-tables (supplemented with additional data from alternate sources including SARS). The import and export data are traditionally classified according to the Harmonised System (HS) classification, and the HS classification has been linked to CPC (version 2).

Table 4: Imports and exports of Information and Communication Technology products by type of product, 2005

	(Rand million)
Imports of ICT products	
Office, accounting and computing machinery	15 487
Radio, television and communication equipment	24 598
Miscellaneous ICT components and goods	218
Leasing or rental services without operator	0
Other professional, technical and business services	507
Telecommunications, broadcasting and information supply services	4 566
Content and media	2 200
Total	47 575
Percentage of ICT imports (against total imports)	10,9
Exports of ICT products	
Office, accounting and computing machinery	806
Radio, television and communication equipment	2 471
Miscellaneous ICT components and goods	183
Leasing or rental services without operator	0
Other professional, technical and business services	553
Telecommunications, broadcasting and information supply services	7 700
Content and media	1 006
Total	12 719
Percentage of ICT exports (against total exports)	3,0
ICT trade surplus/deficit	-34 856

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

South Africa is a net importer of ICT products and services with an estimated ICT trade deficit of R34 856 million. South Africa imports ICT products and services of R47 575 million and exports ICT products and services of R12 719 million. ICT imports contribute 10,9% to total imports into the economy, whilst ICT exports contribute only 3,0% of total exports. The largest imported ICT product was radio, television and communication equipment (R24 598 million), followed by office, accounting and computing machinery (R15 487 million). The largest exported ICT product was telecommunications, broadcasting and information supply services (R7 700 million).

3.1.4 Information and Communication Technology Table 5: Income components of Information and Communication Technology industries

ICT Table 5 shows the income components of the ICT industries for 2005. The data were sourced from the ICT SU-tables.

Table 5: Income components of Information and Communication Technology industries, 2005

	Compensation of employees (Rand million)	Gross operating surplus / Gross mixed income (Rand million)	Other net taxes on production (Rand million)	ICT gross value added (Rand million)
ICT-specific activities				
Manufacturing	2 030	1 339	26	3 395
Telecommunication services	11 101	39 592	14	50 707
Computer services and activities	2 649	532	106	3 288
Content and media	2 507	360	162	3 029
Total	18 287	41 822	309	60 418
ICT related activities				
Trade	N/A	N/A	N/A	2 136
Related industries	N/A	N/A	N/A	23
Total				62 577

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

The total GVA of the ICT sector is R62 577 million (the bulk of this from the telecommunication services). The estimated net taxes on production for the ICT sector was R309 million. The estimated gross operating surplus for the ICT sector was R41 822 million. The compensation of employees for the ICT sector was R18 287 million, with the largest contributor being telecommunication services (R11 101 million).

3.1.5 Information and Communication Technology Table 6: Supply and use of Information and Communication Technology products

ICT Table 6 shows the supply and use of ICT products and the flow of ICT products through the economy. ICT Table 6 is derived from the SU-tables, but lacks the detail and disaggregation to calculate ICT value added and GDP. The major purpose of ICT Table 6 is to highlight the flow of the ICT products, and this includes:

- Intermediate consumption;
- Capital formation;
- Household consumption;
- Domestic output; and
- Imports and exports.

The total domestic output of ICT products was R158 944 million (this figure is not at basic prices, but includes trade and transport margins). The total domestic output at basic prices was R153 691 million.

Non-specific products represents the production of non-ICT products produced within the ICT sector (R1 615 million which is included within the ICT GDP as it is produced as a direct result of the ICT sector operating).

Table 6: Supply and use of Information and Communication Technology products, 2005

	Office, accounting and computing machinery (Rand million)	Radio, television and communication equipment (Rand million)	Miscellaneous ICT components and goods (Rand million)	Leasing or rental services without operator (Rand million)	Other professional, technical and business services (Rand million)	Telecommuni- cations, broadcasting and information supply services (Rand million)	Content and media (Rand million)	Non-specific products (Rand million)	Margins (Rand million)	Total
ICT supply										
Domestic output	2 376	7 123	1 639	2 835	14 162	112 781	11 361	1 414	5 253	158 944
Imports	15 487	24 598	218	0	507	4 566	2 200	N/A		47 575
Margins	934	1 678	410				2 187	44	-5 253	0
Net taxes on products	587	644	311	185	235	1 560	858	157		4 537
Total supply	19 383	34 043	2 579	3 020	14 904	118 907	16 606	1 615		211 056
ICT use										
Intermediate consumption	1 632	20 954	1 920	2 570	14 258	83 033	10 907	1 615 ²⁴		136 889
Household final consumption expenditure	1 137	8 360	202	450	94	28 174	4 503	N/A		42 918
Capital formation	15 808	2 258	274	0	0	0	190	N/A		18 531
Exports	806	2 471	183	0	553	7 700	1 006	N/A		12 719
Total use	19 383	34 043	2 579	3 020	14 904	118 907	16 606	1 615		211 056

*Estimated intermediate consumption of ICT products
 **Data in this table are considered experimental in nature
 ***Individual figures may not add up to stated totals due to rounding

²⁴ There are no data on non-specific products produced within the ICT sector, a result of this is a discrepancy. This discrepancy is treated as intermediate consumption to allow for balancing, but in actuality no use data are available for non-specific products.

3.1.6 Information and Communication Technology Table 7: Capital formation²⁵ in Information and Communication Technology products

ICT Table 7 shows capital formation (mainly investments) in ICT products. Capital formation within the ICT satellite account does not include changes in inventories and as such it is equivalent to gross fixed capital formation (GFCF). GFCF data are contained within the use side of the ICT SU-tables and are considered as mainly investments. The AFS provides business expenditure and investment data. At this stage²⁶ the disaggregated industry information only provides aggregated capital expenditure on new and existing capital per industry. Unfortunately, the AFS does not provide a detail level as to what that capital investment consisted of. The expansion of this table to include capital formation per industry is a planned future development.

Capital formation in ICT products is estimated using import ratios as it is assumed the majority of GFCF is imported, in line with South Africa being a technology importer. Only the total ICT capital formation can be shown as there are currently no data to show the per industry capital formation of ICT products.

Office, accounting and computing machinery is the largest contributor to ICT capital formation (R15 808 million). The total estimated ICT capital formation in the economy is R18 530 million (7,0% of the total capital formation²⁷ in the economy).

Table 7: Capital formation in Information and Communication Technology products, 2005

	(Rand million)
Office, accounting and computing machinery	15 808
Radio, television and communication equipment	2 258
Miscellaneous ICT components and goods	274
Leasing or rental services without operator	0
Other professional, technical and business services	0
Telecommunications, broadcasting and information supply services	0
Content and media	190
Total ICT capital formation	18 530
Total capital formation	263 753
ICT capital formation as a proportion of total capital formation (%)	7,0

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

²⁵ Equivalent to gross fixed capital formation

²⁶ As of March 2013

²⁷ Gross fixed capital formation

3.1.7 Information and Communication Technology Table 8: Household final consumption expenditure²⁸ of Information and Communication Technology products

The consumption expenditure of households is an important value, as it allows for various trends to be explored within household expenditure. Table 8 below shows HFCE on ICT products and services for 2005.

Table 8: Household final consumption expenditure on Information and Communication Technology products, 2005

	ICT product expenditure		
	Value	Percentage of ICT expenditure	Percentage of total expenditure
	Rand million	%	%
ICT products			
Office, accounting and computing machinery	1 137	2,7	0,1
Radio, television and communication equipment	8 360	19,5	0,8
Miscellaneous ICT components and goods	202	0,5	0,0
Leasing or rental services without operator	450	1,1	0,1
Other professional, technical and business services	94	0,2	0,0
Telecommunications, broadcasting and information supply services	28 174	65,7	2,8
Content and media products	4 503	10,5	0,5
Total	42 918	100	4,3
Total Household Final Consumption Expenditure	990 578		
ICT as percentage of total HFCE (%)	4,3		

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

The estimated HFCE for ICT products was R42 918 million (4,3% of the total HFCE). Telecommunications, broadcasting and information supply services had the largest HFCE of R28 174 million (65,7% of the total ICT HFCE), followed by radio, television and communication equipment (R8 360 million or 19,5% of the total ICT HFCE) and content and media products (R4 503 million or 10,5% of the total ICT HFCE).

²⁸ HFCE

3.1.8 Information and Communication Technology Table 9: Employment in the Information and Communication Technology sector

ICT Table 9 shows the employment of ICT professionals²⁹ across the various industries in the economy. The primary data source is the Quarterly Labour Force Survey (QLFS)

The QLFS is a household-based survey conducted by Stats SA on a quarterly basis, the sample was not designed to provide detailed data on race (and gender) groups for only computing professionals and technicians; as a result the data in ICT Table 9 may not reflect accurate employment numbers and should be seen as an estimate.

ICT Table 9 shows the total employed ICT professionals within the economy to be 38 722 (0,3% of the total employed persons). White males make up the largest group of employed ICT professionals (20 889 people employed), followed by Black African males (7 047 people employed). White females are the third largest group of ICT professionals (3 733 people employed).

The financial intermediation, insurance, real estate and business services industry had the most ICT professionals employed with 29 682 people (of these 22 771 were males and 6 910 were females).

²⁹ Information and communication technology professionals include computer system designers and analysts, computer programmers, computer assistants and computing professionals not elsewhere classified

Table 9: Employment of Information and Communication Technology professionals within industries, 2005

	Computing professionals and technicians				Total	Total employed persons	ICT employment as a proportion of total employment (%)
	Black African	Coloured	Indian/Asian	White			
Agriculture, forestry and fishing	0	0	0	0	0	702 033	0,0
Mining	0	0	0	0	0	311 378	0,0
Manufacturing	1 208	0	0	2 122	3 330	1 833 355	0,2
Electricity, gas and water supply	0	0	0	212	212	86 611	0,2
Construction	0	0	0	0	0	998 906	0,0
Wholesale and retail trade	0	1 038	0	0	1 038	3 423 759	0,0
Transport, storage and communication	2 199	0	558	1 419	4 176	715 011	0,6
Financial intermediation, insurance, real estate and business services	6 559	1 076	1 179	20 868	29 682	1 386 691	2,1
Community, social and personal services	259	76	0	0	335	2 299 105	0,0
Private households	0	0	0	0	0	1 277 419	0,0
Total	10 225	2 190	1 736	24 622	38 772	13 034 269	0,3

*Data in this table are considered experimental in nature

**Individual figures may not add up to stated totals due to rounding

Source: Statistics South Africa –Labour Force Survey, 2005

4. Conclusion and way forward

South Africa joins a small group of countries, which includes Chile and Australia, which have compiled ICT satellite accounts for public scrutiny. While many countries have detailed ICT data, ICT satellite accounts, based on the National Accounts data are still quite rare, despite the richness in data they provide.

The draft ICT satellite account for South Africa is aimed at being a component in a larger compendium of ICT statistics. The long-term goal is to produce a system of ICT statistics that contains two major components:

1. The ICT satellite account; and
2. The ICT indicators.

The DoC, along with Research ICT Africa, has created an ICT portal that will serve to inform and contain data regarding the ICT industry. Initially the project will be contained in-house; however, a long-term goal of the DoC will be to allow the ICT portal to be publicly accessible. The draft ICT satellite account will feed into this ICT portal and provide detailed ICT statistics from the National Accounts data. This will supplement and complete the statistics from the socio-economic indicators and telecommunications industry.

Stats SA will in 2013 focus on the further development of the draft ICT satellite account, firstly by addressing any comments received by stakeholders, data users and the public, and secondly by releasing the ICT satellite account for 2006 to 2012. The draft ICT satellite account for South Africa is a reflection of the ICT component contained within multiple industries across the South African economy and as such an estimate of the ICT contribution to the economy.

The way forward in 2013 for Stats SA in the development and improvement of the draft ICT satellite account for South Africa is as follows:

1. Address any comments, and or suggestions received from stakeholders;
2. Compile the ICT satellite account for South Africa for years 2006 to 2012;
3. Research into a more detailed ICT capital formation table;
4. Revise the data within the ICT framework and ensure the quality thereof;
5. Investigate more accurate recording of software with SARB; and
6. Assist the DoC with the ICT indicators and any data required.

Stats SA will continue to develop the ICT satellite account, and during the process, the organisation will continue to examine alternate data sources to improve any data weaknesses.

Stats SA values your feedback on this discussion document. If you have any comments and/or suggestions, please contact Kevin Geddes (KevinG@statssa.gov.za) by 31 July 2013.

5. Glossary

Capital formation	Gross fixed capital formation in a particular category of fixed asset consists of the value of producers' acquisitions of new and existing products of this type less the value of their disposals of the fixed assets of the same type. Capital formation within the ICT satellite account does not include changes in inventories and as such capital formation is equivalent to gross fixed capital formation and not gross capital formation.
Central product classification	A classification based on the physical characteristics of goods or the nature of the services rendered. It covers products that are an output of economic activities, including transportable goods, non-transportable goods and services.
Gross domestic product	The total value of goods and services produced within the geographic boundaries of a country for a specified period.
Gross value added (at basic prices)	The output valued at basic prices less intermediate consumption valued at purchaser's prices.
Household final consumption expenditure	Includes all consumption expenditure made by households from their own cash resources (including all income in cash received), as well as all the counterpart of income in kind (except social transfers in kind) that those households might have received, such as remuneration in kind and other transfers in kind. Note: It also includes the value of all consumption of output for own final use, such as those provided by second homes on own account used for tourism purposes or what it can have received through barter transactions.
Industry	Groups of establishments engaged in the same or similar kinds of activity. Note: The definition of industries is based on the SNA and is in line with that contained in the Standard Industrial Classification of all Economic Activities, fifth edition, Report No. 09-90-02 of January 1993 (SIC).
Intermediate consumption	Intermediate consumption consists of the value of the goods and services consumed as inputs by a process of production, excluding fixed assets. Consumption of fixed assets is recorded as consumption of fixed capital.
International Standard Industrial Classification of all Economic Activities	The United Nation's version of a classification system used to classify businesses according to their economic activity.
National accounts	Serves as a framework for statistical systems. It also serves as a point of reference in establishing standards for related statistics. The internationally agreed framework that guides the compilation of national accounts is contained in the SNA.

Production	A process, carried out under the responsibility, control and management of an institutional unit, in which labour and assets are used to transform inputs of goods and services into outputs of other goods and services. All goods and services produced as outputs must be such that they can be sold on markets, or at least be capable of being provided by one unit to another, with or without charge.
Standard Industrial Classification of all Economic Activities	A South African version of a classification coding system used to classify an enterprise according to its economic activity. Note: It is based on United Nations ISIC with a number of adaptations for local conditions.
Supply table	Consists of a rectangular matrix with the rows corresponding to the same groups of products as the matching use tables and columns corresponding to the supply from domestic production valued at basic prices plus columns for imports and the valuation adjustments necessary to have total supply of each.
System of national accounts	An internationally-agreed standard system for macro-economic accounts. The latest version is described in the System of National Accounts 2008.
Use table	Consists of a set of product balances covering all products available in an economy arranged in the form of a rectangular matrix with the products, valued at purchasers' prices, appearing in the rows and the columns indicating the disposition of the products to various types of uses.

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Annexure 1

Table 10 below shows the condensed production account for the ICT sector for South Africa for the 2005 reference year.

Table 10: A condensed production account for the ICT sector in South Africa, 2005

Products	Manufacturing (Rand million)	Telecommunication services (Rand million)	Computer services and activities (Rand million)	Content and media (Rand million)	Total ICT sector (Rand million)	ICT related industries (Rand million)	Total output of domestic producers (at basic prices) (Rand million)
A. Specific products	12 864	112 781	12 482	9 007	147 142	5 135	407 709
1. Office, accounting and computing machinery	2 376	0	0	0	2 376	0	2 515
2. Radio, television and communication equipment	6 961	0	0	122	7 083	39	11 975
3. Miscellaneous ICT components and goods	1 639	0	0	0	1 639	0	32 961
4. Leasing or rental services without operator	11	8	495	1 604	2 117	718	17 147
5. Other professional, technical and business services	570	0	11 883	1 062	13 515	647	127 911
6. Telecommunications, broadcasting and information supply services	0	112 781	0	0	112 781	0	112 781
7. Content and media	1 308	0	104	6 219	7 631	3 730	102 420
B. Non-specific products	338	146	823	107	1 414	56 464	2 840 442
Goods	145	0	0	66	210	11 934	1 247 442
Services	193	146	823	42	1 204	44 531	1 593 000
Total output (at basic prices)	13 202	112 935	13 304	9 114	148 556	61 599	3 248 151
Total intermediate consumption (at purchasers' prices)	9 808	62 228	10 017	6 085	88 138	35 695	1 847 084
Total gross value added of industries (at basic prices)	3 395	50 707	3 288	3 029	60 418	25 905	1 401 067
Compensation of employees	2 030	11 101	2 649	2 507	18 287	15 693	699 018
Other taxes less subsidies on production	26	14	106	162	309	588	28 498
Gross mixed income	-	-	-	-	-	-	-
Gross operating surplus	1 339	39 592	532	360	41 822	9 623	673 551

*Individual figures may not add up to stated totals due to rounding

Annexure 2

Tables 11 and 12 show the ICT products recommended by the OECD. Tables 13 and 14 list the industries included within the ICT sector for South Africa.

Table 11: Information and Communication Technology products³⁰

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Computers and peripheral equipment			
45142	2620	8472.90	Point-of-sale terminals, ATMs and similar machines
45221	2620	8471.30	Portable automatic data processing machines weighing not more than 10 kg, such as laptop and notebook computers
45222	2620	8471.30	Personal digital assistants and similar computers
45230	2620	8471.41	Automatic data processing machines, comprising in the same housing at least a central processing unit and an input and output unit, whether or not combined
45240	2620	8471.49	Automatic data processing machines presented in the form of systems
45250	2620	8471.50	Other automatic data processing machines whether or not containing in the same housing one or two of the following types of units: storage units, input units, output units
45261	2620	8471.60	Input peripherals (keyboard, joystick, mouse etc.)
45262	2620	8471.60	Scanners (except combination of printer, scanner, copier and/or fax)
45263	2620	8443.32	Inkjet printers used with data processing machines
45264	2620	8443.32	Laser printers used with data processing machines
45265	2620	8443.32	Other printers used with data processing machines
45266	2620	8443.31	Units performing two or more of the following functions: printing, scanning, copying, faxing
45269	2620	8471.90	Other input or output peripheral devices
45271	2620	8471.70	Fixed media storage units
45272	2620	8471.70	Removable media storage units
45289	2620	8471.90	Other units of automatic data processing machines
45290	2620	8473.50	Parts and accessories of computing machines
47315	2620	8528.61	Monitors and projectors, principally used in an automatic data processing system
47550	2620	8523.51	Solid-state non-volatile storage devices

³⁰ Not all CPC (version 2) classification codes can be directly linked to the ISIC or to the HS 2007 classifications; in such cases they are left blank

Table 11: Information and Communication Technology products (continued)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Communication equipment			
46921	2630	8531.10	Burglar or fire alarms and similar apparatus
47211	2630	8525.60	Transmission apparatus incorporating reception apparatus
47212	2630	8525.50	Transmission apparatus not incorporating reception apparatus
47213	2630	8525.80	Television cameras
47221	2630	8517.11	Line telephone sets with cordless handsets
47222	2630	8517.12	Telephones for cellular networks or for other wireless networks
47223	2610, 2630	8517.69	Other telephone sets and apparatus for transmission or reception of voice, images or other data, including apparatus for communication in a wired or wireless network (such as a local or wide area network)
47401	2630	8517.70	Parts for the goods of subclasses 47221 to 47223
Consumer electronic equipment			
38581	2640	9504.10	Video game consoles
47214	2640	8525.80	Video camera recorders
47215	2670	8525.80	Digital cameras
47311	2640	8527.99	Radio broadcast receivers (except of a kind used in motor vehicles), whether or not combined with sound recording or reproducing apparatus or a clock
47312	2640	8527.29	Radio broadcast receivers not capable of operating without an external source of power, of a kind used in motor vehicles
47313	2640	8528.73	Television receivers, whether or not combined with radio-broadcast receivers or sound or video recording or reproducing apparatus
47314	2640	8528.69	Monitors and projectors, not incorporating television reception apparatus and not principally used in an automatic data processing system
47321	2640	8519.89	Sound recording or reproducing apparatus
47323	2640	8521.90	Video recording or reproducing apparatus
47330	2640	8518.50	Microphones and stands therefore; loudspeakers; headphones, earphones and combined microphone/speaker sets; audio-frequency electric amplifiers; electric sound amplifier sets
47402	2640	8522.90	Parts for the goods of subclasses 47321, 47323 and 47330
Miscellaneous ICT components and goods			
45281	2610	8517.69	Sound, video, network and similar cards for automatic data processing machines
47130	2610	8534.00	Printed circuits
47140	2610	8540.89	Thermionic, cold cathode or photo-cathode valves and tubes (including cathode ray tubes)
47150	2610	8541.60	Diodes, transistors and similar semi-conductor devices; photosensitive semi-conductor devices; light-emitting diodes; mounted piezo-electric crystals
47160	2610	8542.39	Electronic integrated circuits
47173	2610	8542.90	Parts for the goods of subclasses 47140 to 47160
47403	2630, 2640, 2651	8529.90	Parts for the goods of subclasses 47211 to 47213, 47311 to 47315 and 48220
47530	2680	8523.29	Magnetic media, not recorded, except cards with a magnetic stripe

Table 11: Information and Communication Technology products (continued)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Miscellaneous ICT components and goods (continued)			
47540	2680	8523.40	Optical media, not recorded
47590	3290	8523.80	Other recording media, including matrices and masters for the production of disks
47910	2680	8523.21	Cards with a magnetic stripe
47920	2610	8523.52	'Smart cards'
48315	2610, 2670	9013.80	Liquid crystal devices n.e.c.; lasers, except laser diodes; other optical appliances and instruments n.e.c.
48354	2610, 2670	9013.90	Parts and accessories for the goods of subclass 48315
Manufacturing services for ICT equipment			
88741	2610		Electronic component and board manufacturing services
88742	2620		Computer and peripheral equipment manufacturing services
88743	2630		Communication equipment manufacturing services
88744	2640		Consumer electronics manufacturing services
88749	2680		Magnetic and optical media manufacturing services
Business and productivity software and licensing services			
47811	5820	8523.40	Operating systems, packaged
47812	5820	8523.40	Network software, packaged
47813	5820	8523.40	Database management software, packaged
47814	5820	8523.40	Development tools and programming languages software, packaged
47821	5820	8523.40	General business productivity and home use applications, packaged
47829	5820	8523.40	Other application software, packaged
73311	5820		Licensing services for the right to use computer software
83143	5820		Software originals
84341	5820		System software downloads
84342	5820		Application software downloads
84392	5820		On-line software
Information technology consultancy and services			
83117	7020		Business process management services
83131	6202		IT consulting services
83132	6202		IT support services
83141	6201		IT design and development services for applications
83142	6202		IT design and development services for networks and systems
83151	6311		Website hosting services
83152	6311		Application service provisioning
83159	6311		Other hosting and IT infrastructure provisioning services
83161	6202		Network management services
83162	6202		Computer systems management services

Table 11: Information and Communication Technology products (continued)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
			Telecommunications services
84110	6110, 6120		Carrier services
84121	6110		Fixed telephony services – access and use
84122	6110		Fixed telephony services – calling features
84131	6120, 6130		Mobile telecommunications services – access and use
84132	6120, 6130		Mobile telecommunications services – calling features
84140	6110, 6120, 6130, 6190		Private network services
84150	6110, 6120, 6130, 6190		Data transmission services
84190	6110, 6120, 6130, 6190		Other telecommunications services
84210	6110		Internet backbone services
84221	6110, 6120, 6130, 6190		Narrowband Internet access services
84222	6110, 6120, 6130, 6190		Broadband Internet access services
84290	6110, 6120, 6130, 6190		Other Internet telecommunications services
			Leasing or rental services for ICT equipment
73124	7730		Leasing or rental services concerning computers without operator
73125	7730		Leasing or rental services concerning telecommunications equipment without operator
73210	7729		Leasing or rental services concerning televisions, radios, video cassette recorders and related equipment and accessories

Table 11: Information and Communication Technology products (concluded)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Other ICT services			
83325	7110		Engineering services for telecommunications and broadcasting projects
87130	9511		Maintenance and repair services of computers and peripheral equipment
87153	9512		Maintenance and repair services of telecommunications equipment and apparatus
87331	3320		Installation services of mainframe computers
87332	6209		Installation services of personal computers and peripheral equipment
87340	3320		Installation services of radio, television and communications equipment and apparatus

Source: Organisation for Economic Cooperation and Development – Guide to measuring the Information Society, 2009

Table 12 shows the ICT products that are defined according to the 'content and media' definition.

Table 12: Information and Communication Technology 'content and media' products³¹

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Printed and other text-based content on physical media, and related services			
32210	5811	4901.99	Educational textbooks, in print
32220	5811	4905.91	General reference books, in print
32230	5812	4901.99	Directories, in print
32291	5811	4901.99	Professional, technical and scholarly books, in print
32292	5811	4903.00	Children's books, in print
32299	5811	4901.99	Other books n.e.c., in print
32300	5813	4902.10	Newspapers and periodicals, daily, in print
32410	5813	4902.90	General interest newspapers and periodicals, other than daily, in print
32420	5813	4902.90	Business, professional or academic newspapers and periodicals, other than daily, in print
32490	5813	4902.90	Other newspapers and periodicals, other than daily, in print
32511	5811	4905.99	Maps and hydrographic or similar charts (including wall maps, topographical plans and maps for globes), printed, other than in book-form

³¹ Not all CPC (version 2) classification codes can be directly linked to the ISIC or to the HS 2007 classifications; in such cases they are left blank

Table 12: Information and Communication Technology `content and media' products (continued)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
32530	5819	4909.00	Printed or illustrated postcards; printed cards bearing personal greetings or messages, with or without envelopes or trimmings
32540	5819	4911.91	Printed pictures, designs and photographs
32620	5819	4911.10	Trade advertising material, commercial catalogues and the like
32630	5819	4910.00	Transfers (decalcomanias) and printed calendars
47691	5811	8523.40	Audio books on disk, tape or other physical media
47692	5811, 5812, 5813	8523.40	Text-based disks, tapes or other physical media
83631	5812, 5813		Sale of advertising space in print media (except on commission)
Motion picture, video, television and radio content, and related services			
38950	5911	3706.90	Motion picture film, exposed and developed, whether or not incorporating sound track or consisting only of sound track
47620	5911	8523.40	Films and other video content on disks, tape or other physical media
83632	6010, 6020		Sale of TV/radio advertising time (except on commission)
84611	6010		Radio broadcast originals
84612	6020		Television broadcast originals
84621	6010		Radio channel programmes
84622	6020		Television channel programmes
84631	6010, 6020		Broadcasting services
84632	6010, 6020		Home programme distribution services, basic programming package
84633	6010, 6020		Home programme distribution services, discretionary programming package
84634	6010, 6020		Home programme distribution services, pay-per-view
96121	5911, 6020		Motion picture, videotape and television programme production services
96122	5920, 6010		Radio programme production services
96123	5911, 5920		Motion picture, videotape, television and radio programme originals

Table 12: Information and Communication Technology 'content and media' products (continued)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Motion picture, video, television and radio content, and related services			
96131	5912		Audiovisual editing services
96132	5912		Transfers and duplication of masters services
96133	5912		Colour correction and digital restoration services
96134	5912		Visual effects services
96135	5912		Animation services
96136	5912		Captioning, titling and subtitling services
96137	5920		Sound editing and design services
96139	5912		Other post-production services
96140	5913		Motion picture, videotape and television programme distribution services
96150	5914		Motion picture projection services
Music content and related services			
32520	5920	4904.00	Music, printed or in manuscript
47610	5920	8523.80	Musical audio disks, tapes or other physical media
96111	5920		Sound recording services
96112	5920		Live recording services
96113	5920		Sound recording originals
Games software			
38582	5820	9504.10	Software cartridges for video game consoles
47822	5820	8523.40	Computer game software, packaged
84391	5820		On-line games
Online content and related services			
73312	5812		Licensing services for the right to use databases
83633	5813, 5819, 6311, 6312		Sale of Internet advertising space (except on commission)
84311	5811		On-line books
84312	5813		On-line newspapers and periodicals
84313	5812		On-line directories and mailing lists
84321	5920		Musical audio downloads
84322	5920		Streamed audio content
84331	5911		Films and other video downloads
84332	5911		Streamed video content
84393	5819		On-line adult content
84394	6312		Web search portal content
84399	5819		Other on-line content n.e.c.

Table 12: Information and Communication Technology 'content and media' products (concluded)

CPC (version 2)	ISIC (Rev. 4)	HS (2007 edition)	Product description (according to the CPC version 2)
Other content and related services			
47699	5920	8523.40	Other non-musical audio disks and tapes
73320	5811, 5813, 5911, 5912, 5920, 9000		Licensing services for the right to use entertainment, literary or artistic originals
83611	7310		Full service advertising
83620	7310		Purchase or sale of advertising space or time, on commission
83639	5811, 5812, 7310		Sale of other advertising space or time (except on commission)
83812	7420		Advertising and related photography services
83940	5812		Original compilations of facts/information
84410	6391		News agency services to newspapers and periodicals
84420	6391		News agency services to audiovisual media
85991	6399		Other information services
89110	5811, 5812, 5813, 5819, 5820, 5920		Publishing, on a fee or contract basis
96330	9000		Original works of authors, composers and other artists except performing artists, painters and sculptors

Source: Organisation for Economic Cooperation and Development – Guide to measuring the Information Society, 2009

Table 13: Industries conforming to the Information and Communication Technology sector definition available in the benchmarked Supply and Use tables, 2005

ISIC (Rev. 4)	SIC (5 th level)	SIC grouping on the SU-tables	Description of industry grouping
ICT manufacturing industries			
5820	32600	SIC_3260	Reproduction of recorded media
2610	37100	SIC_3710	Manufacture of electronic components and boards
	37200	SIC_3720	Manufacture of television and radio transmitters and apparatus for line telephony and line telegraphy
2620	35900	SIC_3590	Manufacture of computers and peripheral equipment
2630	37420	SIC_3742	Manufacture of communication equipment
2640	37300	SIC_3730	Manufacture of consumer electronics
	39240	SIC_3924	Manufacture of games and toys (video games)
2680	33599	SIC_3359_60	Manufacture of magnetic and optical media ³²
ICT trade industries³³			
4651	61501	SIC_6150	Wholesale of computers, computer peripheral equipment and software
4652	61509	SIC_6150	Wholesale of electronic and telecommunications equipment and parts
	62393	SIC_6239	Retail trade in sports goods and entertainment requisites
Telecommunications			
6110	75200	SIC_7520	Wired telecommunications activities
6120	75200	SIC_7520	Wireless telecommunications activities
6130	75200	SIC_7520	Satellite telecommunications activities
6190	75200	SIC_7520	Other telecommunications activities
Computer programming, consultancy and related activities			
	85230	SIC_8523	Renting of office machinery and equipment
	86100	SIC_8610	Hardware consultancy
6201	86200	SIC_8620	Computer programming activities
6202	86300	SIC_8630	Computer consultancy and computer facilities
6209	86900	SIC_8690	Other information technology and computer service activities
Data processing, hosting and related activities, web portals			
6311		SIC_8630	Data processing, hosting and related activities
		SIC_8640	
6312			Web portals
Repair of computers and communication equipment			
9511	86500	SIC_8650	Repair of computers and peripheral equipment
9512	86500	SIC_8650	Repair of communication equipment

Source: Statistics South Africa – Supply and Use tables, 2005

³² ICT related

³³ ICT related

Table 14: Industries conforming to the Information and Communication Technology `content and media' definition available in the benchmarked Supply and Use tables, 2005

ISIC (Rev. 4)	SIC (5 th level)	SIC grouping on the SU-tables	Description of industry grouping
Publishing of books, periodicals and other publishing activities			
5811	32410	SIC_3241	Book publishing
5812			Publishing of directories and mailing lists
5813	32420	SIC_3242	Publishing of newspapers, journals and periodicals
	32430	SIC_3243	Publishing of recorded media
5819	32490	SIC_3249	Other publishing activities
	39220	SIC_3922	Manufacture of musical instruments
Motion picture, video and television programme activities			
5911	96130	SIC_96	Motion picture, video and television programme production activities
5912			Motion picture, video and television programme post-production activities
5913	96112	SIC_96	Motion picture, video and television programme distribution activities
5914	96122	SIC_96	Motion picture projection activities
Sound recording and music publishing activities			
5920	96490	SIC_96	Sound recording and music publishing activities
Programming and broadcasting activities			
6010	96130	SIC_96	Radio broadcasting
6020	96130	SIC_96	Television programming and broadcasting activities
Other information service activities			
6391	96200	SIC_96	News agency activities
6399			Other information service activities n.e.c.

Source: Statistics South Africa – Supply and Use tables, 2005