

VOORBURG GROUP ON SERVICES STATISTICS

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Towards a classification of ICT services

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Classification session

Abstract

The development of standards and classifications is the first step towards designing and building coherent statistical frameworks. In recent years, interest for statistics related to the information society has been omnipresent and groups concerned with statistical standards are under pressure to quickly develop relevant definitions and classifications. The Voorburg Group is concerned with service statistics and can play a significant role in the adoption of new standards to track Information and Communications Technology (ICT) Services.

The upcoming revision to the CPC presents a unique opportunity to update a recognized international standard to better reflect the organisation of ICT services markets. It also presents an opportunity for various groups interested in this topic to collaborate on a project of common interest. This paper suggests that the Voorburg Group, the OECD's Working Party on the Information Society and the UNSO could collaborate on such a project and that recent development and implementation work in North America can be the basis of the revision. Participants are asked to express their views on this proposal and to suggest future work.

Classifying Information and Communication Technology (ICT) Services

Introduction

1. The interest for statistics related to the information society is pervasive. This topic has been discussed at previous Voorburg Group meetings, it has been and remains the focus of the OECD's Working Party on Indicators for the Information Society (WPIIS) and will be the focus of the upcoming UNCTAD Expert Meeting on Measuring Electronic Commerce as an Instrument for the Development of the Digital Economy. The forthcoming World Summit on the Information Society will no doubt contribute to an even greater interest.
2. It will be obvious to members of the Voorburg Group that the development of standard definitions and classifications is the very first step towards building coherent and comparable statistics. Progress has been made in recent years in the development of standards for information society related statistics. For instance, the OECD and UNSO have adopted a common definition of the Information and communication technology sector (ICT sector) based on ISIC rev. 3. The WPIIS will soon be submitting a proposal for a list of ICT goods based on the Harmonized System. The WPIIS has also developed definitions in the domain of e-commerce and ICT use that are becoming the norm.
3. The common thread between these standards is that they were developed by making the best possible use of existing international classifications or the best possible use of recent developments by national statistical institutes. This approach has the obvious advantage of accelerating the process of generating information based on new standards.
4. This paper proposes a similar solution for ICT service commodity statistics, that of using a recent development to up-date an international classification of interest. In the domain of service products statistics, the international standard of interest is the Central Product Classification (CPC), and the recent development of interest is the North American Product Classification System (NAPCS).
5. The main purpose of this paper is to invite the Voorburg Group to join a discussion that has begun at the WPIIS, and that will be on the agenda of its 2004 meeting. There is an opportunity for the Voorburg Group, the OECD, the UNSO and North American statistical offices to collaborate on a project of common interest
6. The Voorburg Group is a partner of the UNSO for the development of the CPC. The WPIIS wishes to develop a list of ICT services, preferably on the basis of an accepted international standard. The statistical institutes of North America wish to promote the improvement of the identification and classification of service products across international classification systems. They are in a position to share practical experience in the application of relevant new standards.

Why NAPCS and not the current CPC?

7. The current version of the CPC is not sufficiently well articulated to isolate, or support the production of, basic statistics for core ICT services. ICT services markets have evolved rapidly and products that did not exist (or did not represent major markets) when the CPC was elaborated are now growing in importance. This is the case for products such as web site hosting, application provisioning or network management services.
8. The development of NAPCS on the other hand is recent and on-going. The project benefits from the input of industry insiders. Special attention was given to services originating from the information sector (as defined in NAICS), within which many producers of core ICT services are found.
9. There is also a precedent in using NAPCS to develop the CPC. The recent update of the CPC in the area of telecommunication services is a case in point. A separate paper presented by Canada at this meeting articulates a proposal to further develop the CPC for information products on the basis of NAPCS¹.
10. This paper should be seen as a complement to the Canadian proposal. It is narrower in scope, reflecting the more immediate goal of the WPIIS to articulate a list of ICT services, but it is presented in the same spirit.

The scope

11. The precise scope of ICT services has not been determined, and this paper does not attempt to do that. Rather, this paper proposes to develop the CPC to initiate that process.
12. Although the precise scope of ICT services is not yet determined, the identification of “core ICT services” is not controversial. Most will agree that the principal outputs of core ICT service industries (ISIC **6420 – Telecommunications** and **72 – Computer and related services**) are in-scope. The paper focuses on identifying so-called computer and related services since the CPC has recently been updated for telecommunications services.
13. The products of **ISIC 72 – Computer and related services** are generally intended to enable the function of information processing and communication by electronic means, the accepted guideline to recognize ICT services.
14. The relevant NAPCS proposal is the one for information technology services. It is designed to describe the principal products of the following NAICS industries: 511210 – Software publishers, 51811 – ISPs and Web Search Portals, 51821 - Data Processing, Hosting, and Related Services, 54151 – Computer Systems Design and Related Services. The activities covered by those industries mostly relate to ISIC 72 –

¹ Paul Johanis, Introducing Products for the Information Sector in the CPC

Computer and related services, and the products it describes are mostly covered by CPC 8314 – Computer consultancy services, 8315 – Computer facilities management services and 8316 – Systems maintenance services.

15. Although the scope of the proposal can be fairly easily linked to the current CPC, the structure of the NAPCS proposal is significantly different, and the level of detail of the classification goes much beyond that of the CPC. In fact, it likely goes much beyond what would be possible and practical for an international classification. It does however provide an aggregation structure that may well suit that application.
16. At the highest level of the NAPCS proposal, the following categories of ICT services are identified:
 - IT technical consulting – expert opinion on technical matters related to the use of IT.
 - IT design and development services – design and development of IT solutions such as custom applications, networks and computer systems.
 - Hosting and IT infrastructure provisioning services – access to IT infrastructure (hardware, software and networks) enabling the hosting of applications and the processing of information.
 - IT infrastructure and network management services – management and monitoring of a client’s IT infrastructure.
 - IT technical support services – technical expertise to solve IT related problems.
 - Information and document transformation – technical expertise and equipment to transform information from one format or media to another.
 - Internet access and backbone services – connection to, and carriage of traffic on, the Internet.
 - Published Software – software developed for wide distribution and produced for multiple sale or licensing.
17. All of the above broad service categories, except IT technical consulting, have sub-components in NAPCS. The level of detail appropriate for use in the CPC is a matter of judgment and practical experience. It could be argued that these broad categories are sufficient. Input from other statistical offices on this matter would be most useful.
18. For the purpose of discussion, annex 1 outlines a proposal that goes beyond the most aggregate level of NAPCS (as shown above) by adding 2 categories under the IT design and development services, the largest computer services market in Canada. That proposal takes into account the relative importance of products within Canadian industries and the number of firms reporting to each category. But it is largely based on the author’s perception of what is feasible at the international level, and opinions may well vary on this. Annex 2 provides the full detail and definitions of the relevant NAPCS categories as background information for an informed discussion.
19. Readers will notice that the NAPCS proposal includes a number of categories that fall outside the scope of ICT services aggregation. This is the case for services such as management consulting services, on-line advertising space and rights for Internet

content. These products are part of the NAPCS proposal because they were thought to be significant secondary products of NAICS industries under review, but they are excluded from this proposal because they are clearly not ICT services.

Implementation of the proposed classification

20. In the United States, product data were collected for the Information Sector (1997 North American Industrial Classification System (NAICS) 51) and the Computer Systems Design and Related Services industry (1997 NAICS 5415) as part of the Annual Services Statistics Program. The same product classification was used for the main ICT services industries, that is, Software Publishers, ISPs and Web Search Portals, Data Processing and Hosting, and Computer Design and Related Services. The use of a single classification for these industries reflects the extensive overlap observed in the products they offer. NAPCS based data were published for the first time in February 2003 in “*Services Annual Survey – 2001*”.
21. The experience in the United States was conclusive. The use of NAPCS has led to a significant increase in the amount of product detail published from the Services Annual Survey, and the data provide new insights on the output structure of the targeted industries².
22. A similar approach has been adopted in Canada. The relevant sections of NAPCS are used in two surveys which are part of a broader Services Annual statistics program.
 - **The Annual Survey of Internet Service Providers**, a sample survey of establishments primarily engaged in the provision of Internet access services. This population represents a subset of NAICS 51419– Other Information Services.
 - **The Annual Survey of Software Development and Computer Services** – This is a sample survey of establishments classified in the following three NAICS industries: Software Publishers, Data Processing Services, Computer Systems Design and Related Services.
23. In Canada, the classification has been tested at different levels of details for reference years 1999 to 2002. The results discussed here are those for the 2001 reference year, the most up-to-date available.
24. The categories and level of detail collected in these 2 surveys are not exactly the same, but are very similar. The decision to include or exclude products from one or the other survey was based on our best knowledge of the output structure of those industries, and on a desire to maintain as much comparability through time as possible.
25. The success of the implementation of a classification system was assessed using the following criteria:

² For more information on implementation in the United States, see B.K. Atrostic, Overview of the new Services Products Data in the United States, Working Party on Indicators for the Information Society, OECD, Paris, 5-6 May, 2003 [DSTI/ICCP/IIS/RD(2003)2]

- The system should allow the respondent to readily identify the various markets in which it is active;
- The system should provide good coverage of the outputs of these industries;
- The system should not cause undue response burden or difficulty for the respondent. This was assessed by survey feedback, that is, the number of cases where respondents did not complete this section of the questionnaire or complained about their inability to complete it. Interviewers engaged in follow-up were also asked if this part of the questionnaire caused difficulties. A short assessment of the success of each survey follows.

26. The **Annual Survey of Software Development and Computer Services** has been conducted since the early 90s. A preliminary version of the NAPCS classification system was introduced with the 1999 survey and has been collected every year since then at different levels of detail. The population targeted by this survey is quite diversified (see paragraph #21) and was known to house many multi-service establishments. It was also known that there is significant overlap between the boundaries of the various industries covered by this survey. The collection of product data is particularly important when those conditions exist. They allow for the measurement of total market size and of industry specialization ratios.
27. The product classification proved relevant and applicable. All products, except network design, collocation and video and audio streaming represented more than 4% of revenues in its principal industry of origin. More than half of the respondents to this survey reported revenues in 3 or more product categories. The single service establishments (29%) tended to be of small or medium size and to serve one of the following markets: IT technical consulting, software publishing and computer systems design and development.
28. The significant overlap between the boundaries of the 3 NAICS industries covered by this survey was confirmed. All products, except collocation and data storage services, were produced by establishments in 2 or 3 industries. Thirteen of the 20 ICT or ICT related services tracked by the survey were produced in all industries. Despite this overlap between the boundaries of these industries, the specialization ratio for each of these industries was above the threshold of 70 % deemed sufficient to define an industry in the Canada.
29. The history of the **Annual Survey of Internet Service Providers** is more recent. The industry is highly specialized with more than 88% of its revenues generated from the provision of Internet access services. Despite the high level of specialization as measured by revenues, more than 80% of establishments reported revenues in 3 or more product categories. In total, the industry reported revenues from the provision of 14 products in addition to primary products, but only 3 of those accounted for more than 1% of the it's revenues: web site hosting (3.9%), sales, rental and maintenance of IT equipment (1.1%) and other services (3.0%). This industry is also the second largest producer of collocation and video and audio streaming services, two relatively small markets.

30. The coverage of the classification was very good for all industries targeted by these two surveys. Unclassified revenues accounted for less than 7.5% of total revenues in all cases, and for only 5.4% of the combined revenues of the four industries. A similar observation can be made regarding the situation in the United States. Unclassified revenues ranged from 5.1 % of total revenues for NAICS 54151 – Computer Design and Related Services to 11.0 % for NAICS 51419 – Other Information Services.
31. The module for product detail was relatively easy to implement in Canada for both surveys. The incidence of non-response and need for follow-up has been low.

Conclusion

32. The implementation of NAPCS as it relates to ICT services has been a positive experience in both Canada and the United States. The data collected provide new market information and help understand the structure of these very dynamic industries. It also appeared relatively easy to use for most respondents.
33. The integration of this system, or of a similar system, in the CPC would promote international comparability in an area of considerable interest. The Voorburg Group can play a significant role towards achieving this goal by proposing such a change to the UNSO classification sub-committee.
34. Participants are asked to express their views regarding the integration of the relevant portions of NAPCS in the CPC.

Annex 1

Proposed ICT services categories for inclusion in the CPC

- IT technical consulting
- IT design and development services
 - Custom applications
 - Computer systems and networks
- Hosting and IT infrastructure provisioning services
 - Web hosting
 - Application service provisioning
 - Business process management
 - Other IT infrastructure provisioning services
- IT infrastructure and network management services
- IT technical support services
- Information and document transformation
- Internet access and backbone services
- Software

Annex 2

Information technology services – NAPCS provisional list

Provisional Product List for NAICS 511210, 518111, 518112, 518210, and 54151: Software Publishers, ISPs, Web Search Portals, Data Processing, Hosting, and Related Services, and Computer Systems Design and Related Services*

1 Industry Subject Area	2 Working Group Code	3 Tri- lateral Detail	4 5 6 National Product Detail			7 English Title	8 English Definition	9 10 11 Product Exists in:			12 13 14 NAICS Industries Producing the Product			15 CPC Code
			Can	Méz	US			Can	Méz	US	Can	Méz	US	
5112 518 54151	1.1	X				Information technology (IT) technical consulting services	The provision of advice or expert opinion on technical matters related to the use of information technology. This includes advice on matters such as hardware and software requirements and procurement, systems integration, and systems security. The provision of expert testimony on IT related issues is also included here. <u>Exclusion:</u> Advice on issues related to business strategy, such as advising on developing an e-commerce strategy, is classified in Management Consulting. Service contracts where advice is bundled with the design and development of an IT solution (web site, database, specific application, network, etc.) are classified to the appropriate Information technology (IT) design and development services sub-category.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518210 518210 518210	83149
5112 518 54151	1.2					Information technology (IT) design and development services	The provision of technical expertise to design and/or develop an IT solution such as custom applications, networks, and computer systems.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518210 518210 518210	83142
5112 518 54151	1.2.1					Custom Application design and development services	This service consists of designing the structure and/or writing the computer code necessary to create and/or implement a software application.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518210 518210 518210	83142
5112 518 54151	1.2.1.1	X				Web site design and development services	This service consists of designing the structure and content of a web page and/or of writing the computer code necessary to create and implement a web page. Exclusions: Service contracts where the design and development of a web page is bundled with the hosting of the web page are classified in the appropriate Web site hosting services sub-category.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518210 518210 518210	83149
5112 518 54151	1.2.1.2	X				Database design and development services	This service consists of designing the structure and content of a database and/or of writing the computer code necessary to create and implement a database (data warehouse). Exclusions: Service contracts where the design and development of a database is bundled with the on-going management of the data holdings are classified in the Data management services sub-category.	X	X	X	511210 518210 541510 541610 541210	511210 518210 518210 518210	511210 518210 518210 518210	83142

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1 Industry Subject Area	2 Working Group Code	3 Tri- lateral Detail	4			7 English Title	8 English Definition	9			12			15 CPC Code
			National Product Detail					Product Exists in:			NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.2.1.3					Customization and integration of packaged software	This service consists of adapting (modifying, configuring, etc.) and installing an existing application so that it is functional within the clients' information system environment. Exclusions: Service contracts where this service is bundled with the hosting and management of the application on an on-going basis are classified to the appropriate sub-category of the Hosting and IT Infrastructure provisioning services.	X	X	X	5112105 18210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518111 518210 518210 518210	83142
5112 518 54151	1.2.1.3.1	X				Customization and integration of cross-industry applications	This service consists of adapting (modifying, configuring, etc.) and installing an existing cross-industry application so that it is functional within the clients' information system environment. This service may include custom programming and training. Exclusions: Service contracts where this service is bundled with the hosting and management of the application on an on-going basis are classified to the appropriate sub-category of the Hosting and IT Infrastructure provisioning services.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518111 518210 518210 518210	83142
5112 518 54151	1.2.1.3.2	X				Customization and integration of vertical-market applications	This service consists of adapting (modifying, configuring, etc.) and installing an existing vertical market application so that it is functional within the clients' information system environment. Exclusions: Service contracts where this service is bundled with the hosting and management of the application on an on-going basis are classified to the appropriate sub-category of the Hosting and IT Infrastructure provisioning services.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518111 518210 518210 518210	83142
5112 518 54151	1.2.1.4	X				Other custom application design and development services	This service consists of adapting (modifying, configuring, etc.) and installing an existing application (except vertical market or cross-industry application) so that it is functional within the clients' information system environment or of creating software to meet the specific needs of the clients. Exclusions: Service contracts where this service is bundled with the hosting and management of the application on an on-going basis are classified to the appropriate sub-category of the Hosting and IT Infrastructure provisioning services.	X	X	X	511210 518111 518210 541510 541610 541210	511210 518111 518210 518210 518210	511210 518111 518111 518210 518210 518210	83142

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			National Product Detail					Product Exists in:			NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.2.2					Network design and development services	This service consists of designing, developing and implementing a customer's networks such as Intranets, Extranets and Virtual Private Networks. It includes the design and development of network security systems. Exclusions: Service contracts where this service is bundled with the day-to-day management of the client's network are classified in the Network management services category.	X	X	X	517110 518111 518210 541510 541610 541210	517110 518111 518210 518210 518210 518210	517110 518111 518210 518210 518210 518210	83142
5112 518 54151	1.2.2.1	X				Network security design and development services	This service consists of designing, developing and implementing software, hardware and procedures to control access to data and programs and to allow for the safe exchange of information over a network.	X	X	X	517110 518111 518210 541510 541610 541210	517110 518111 518210 518210 518210 518210	517110 518111 518210 518210 518210 518210	83141
5112 518 54151	1.2.2.2	X				Network design and development services, other than security	This service consists of designing, developing and implementing customer's networks such as Intranets, Extranets and Virtual Private Networks. Exclusions: Service contracts where this service is bundled with the day-to-day management of the client's network are classified in the Network management services category.	X	X	X	517110 518111 518210 541510 541610 541210	517110 518111 518210 541510 518210 518210	517110 518111 518210 518210 518210 518210	83149
5112 518 54151	1.2.3					Computer systems design, development and integration services	This service consists of assessing an organization's computer requirements, advising on hardware and software acquisitions, developing system specifications and either putting the new system in place or providing the client with the necessary specifications to put the new system in place.	X	X	X	518210 541510	518210 541510	518210 541510	83142
5112 518 54151	1.2.3.1	X				Computer systems design services	This service consists of assessing an organization's computer requirements, advising on hardware and software acquisitions, and providing the client with the specifications necessary to put the system in place.	X	X	X	541510	541510	541510	83142
5112 518 54151	1.2.3.2	X				Computer systems design and development services	This service consists of assessing an organization's computer requirements, advising on hardware and software acquisitions, developing system specification and putting the new system in place.	X	X	X	541510	541510	541510	83142
5112 518 54151	1.2.3.3	X				Computer systems integration services	This service consists of bundle that includes an analyses of the clients current computer system, present and future computing requirements, the purchase of new equipment and software, and the integration of the new and old systems components to create a new integrated system.	X	X	X	518210 541510	518210 541510	518210 518210	83149
5112 518 54151	1.3					Hosting and information technology (IT) infrastructure provisioning services	The provision of information technology (IT) infrastructure (hardware, software, and networks) to process data, host applications and host processes for a client.	X	X	X	541510 518111 518210	541510 518111 518210	541510 518111 518210	83149

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			National Product Detail					Product Exists in:			NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.3.1					Web site hosting services	The service of providing the infrastructure to host a customer's web site and related files in a location that provides fast, reliable connection to the Internet.	X	X	X	541510 518111 518210	541510 518111 518210	541510 518111 518210	83149
5112 518 54151	1.3.1.1	X				Web site hosting services (without integration of related applications)	The service of providing the infrastructure to host a customer's web site and related files in a location that provides fast, reliable connection to the Internet. The service is limited to storage on a single server, in either shared or dedicated capacity, without the service provider managing or integrating software applications. Software hosted on the server is the client's responsibility. Service level guarantees are standardized and limited in scope.	X	X	X	541510 518111 518210	541510 518111 518210	541510 518111 518210	83149
5112 518 54151	1.3.1.2	X				Web site hosting services with integration of related applications	A bundled service package that consists of the hosting and management of the web site and related applications. An important characteristic of this service is the promise of a secure and reliable site and Internet connections that can be quickly scaled to accommodate variations in traffic use. Frequently, consulting, customization and systems integration are part of the package. Applications are frequently e-commerce related and enable on-line storefronts, shopping carts and catalogs with advanced and complex features such as order processing, fulfillment, procurement, invoicing, transaction processing, customer relational management and back-end database and data warehouse integration and migration services.	X	X	X	541510 518210	541510 518210	541510 518210	83149
5112 518 54151	1.3.2					Application service provisioning	The provision of leased software applications from a centralized, hosted, and managed computing environment.	X	X	X	541510 518111 518210	541510 518210	541510 518210	83149
5112 518 54151	1.3.2.1	X				Application service provisioning with integration services	The provision of leased software applications from a centralized, hosted, and managed computing environment with integration to the systems and infrastructure of the client. Frequently, consulting, customization and systems integration services are bundled with the hosting and management of the application.	X	X	X	541510 518210	541510 518210	541510 518210	83149

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			Can	Méz	US			Can	Méz	US	Can	Méz	US	
5112 518 54151	1.3.2.2	X				Application service provisioning without integration services	The provision of leased software applications from a centralized, hosted, and managed computing environment where the leased application is not customized and not integrated with other applications of the client. The application is usually accessed over the word wide web. A common example is office suite software applications.	X	X	X	541510 518210	541510 518210	541510 518210	83149
5112 518 54151	1.3.3					Business process management services	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage a business process for a client.	X	X	X	518210 541610	518210 541610	518210 541610	
5112 518 54151	1.3.3.1	X				Business process management services - Financial	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage a financial business process for a client such as financial transaction processing, credit card processing, payment services and lending services.	X	X	X	518210 541610	518210 541610	518210 541610	
5112 518 54151	1.3.3.2	X				Business process management services - Human resources	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage a human resource business process for a client such as benefits administration, payroll processing, and personnel administration.	X	X	X	518210 541610	518210 541610	518210 541610	
5112 518 54151	1.3.3.3	X				Business process management services - Supply chain management	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage a supply chain management business process for a client such as inventory management, procurement services, logistics services, production scheduling and order processing.	X	X	X	518210 541610	518210 541610	518210 541610	
5112 518 54151	1.3.3.4	X				Business process management services - Customer relations management	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage a customer relations management business process for a client such as help desk, call center, and customer service.	X	X	X	518210 541610	518210 541610	518210 541610	

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1 Industry Subject Area	2 Working Group Code	3 Tri- lateral Detail	4 5 6			7 English Title	8 English Definition	9 10 11			12 13 14			15 CPC Code
			National Product Detail					Product Exists in:			NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.3.3.5	X				Business process management services - Vertical markets	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage a vertical market business process for a client. These are business processes that are conducted by specific industries such as electric, chemical, and petroleum.	X	X	X	518210 541610	518210 541610	518210 541610	
5112 518 54151	1.3.3.6	X				Business process management services - Other	A bundled service package that combines information-technology-intensive services with labor (manual or professional depending on the solution), machinery, and facilities to support, host and manage other business processes for a client.	X	X	X	518210 541610	518210 541610	518210 541610	
5112 518 54151	1.3.4	X				Collocation services	The provision of rack space within a secured facility for the placement of servers and enterprise platforms. The service includes the space for the client's hardware and software, connection to the Internet or other communication networks, and routine monitoring of servers. Clients are responsible for the management of the operating system, hardware, and software.	X	X	X	518111 518210	518111 518210	518111 518210	831498 5960
5112 518 54151	1.3.5	X				Data storage services	The service of managing or administrating the storage and back-up management of data such as remote back-up services, storage, or hierarchical storage management (migration).	X	X	X	518210 541510	518210 541510	518210 541510	83149
5112 518 54151	1.3.6	X				Data management services	The ongoing management and administration of data as an organizational resource. Services may include performing data modeling, data mobilization, data mapping/rationalization, data mining and system architecture.	X	X	X	518210 541510	518210 541510	518210 541510	83149
5112 518 54151	1.3.7	X				Video and audio streaming services	The service of sending audio and video data over the Internet or providing services associated with the storage, production (including encoding), and support of video and audio streaming over the Internet.	X	X	X	518111 518210	518111 518210	518111 518210	84130
5112 518 54151	1.3.8	X				Other IT infrastructure provisioning services	Other IT hosting or infrastructure provisioning services such as hosting client's application, processing client's data and computer time share.	X	X	X	518210 541510	518210 541510	518210 541510	83149
5112 518 54151	1.4					IT infrastructure and network management services	The service of managing and monitoring a client's IT infrastructure including hardware, software and networks.	X	X	X	518111 518210 541510	518111 518210 541510	518111 518210 541510	831428 314985 960

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Provisional Product List for NAICS 511210, 518111, 518112, 518210, and 54151: Software Publishers, ISPs, Web Search Portals, Data Processing, Hosting, and Related Services, and Computer Systems Design and Related Services*

1 Industry Subject Area	2 Working Group Code	3 Tri- lateral Detail	4 5 6			7 English Title	8 English Definition	9 10 11			12 13 14			15 CPC Code
			National Product Detail					Product Exists in:			NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.4.1	X				Network management services	The service of managing and monitoring communication networks and connected hardware to diagnose networking problems and gather capacity and usage statistics for the administration and fine-tuning of network traffic. These services also remotely manage security systems or provide security-related services.	X	X	X	518111 518210 517110	518111 518210 517110	518111 518210 517110	83142
5112 518 54151	1.4.2	X				Computer systems management services	Providing day-to-day management and operation of a client's computer system.	X	X	X	518210 541510	518210 541510	518210 541510	83142
5112 518 54151	1.5					IT technical support services	The provision of technical expertise to solve problems for the client in using software, hardware, or entire computer system.	X	X	X	511210 518111 518210 541510	511210 518111 518210 541510	511210 518111 518210 541510	83142
5112 518 54151	1.5.1	X				Software-related technical support services	The provision of customer support in using or trouble-shooting the software and includes upgrade services and the provision of patches and updates.	X	X	X	511210 541510	511210 541510	511210 541510	83142
5112 518 54151	1.5.2	X				Hardware-related technical support services	The provision of customer support in using or troubleshooting the computer hardware. It includes the testing and cleaning on a routine basis, and repair of IT equipment. Includes technical assistance in moving a client's computer system to a new location.	X	X	X	541510	541510	541510	83142
5112 518 54151	1.5.3	X				Combined software and hardware technical support services	The provision of customer support in using or trouble-shooting the computer hardware and software.	X	X	X	518111 541510	518111 541510	518111 541510	83149
5112 518 54151	1.5.4					Other IT technical support services	The provision of technical expertise to solve specialized problems for the client in using a computer system. These specialized services include computer auditing and assessment, data recovery services, and disaster recovery services.	X	X	X	518210 541510	518210 541510	518210 541510	83149
5112 518 54151	1.5.4.1	X				Auditing and assessing computer operations	Services of auditing or assessing computer operations without providing advice or other follow-up action. Includes auditing, assessing and documenting a server, network or process for components, capabilities, performance, or security.	X	X	X	541510	541510	541510	83149
5112 518 54151	1.5.4.2	X				Data recovery services	Retrieving a client's data from a damaged or unstable hard drive or other storage medium.	X	X	X	518210 541510	518210 541510	518210 541510	83149
5112 518 54151	1.5.4.3	X				Disaster recovery services (Business continuity services)	Providing standby computer equipment and duplicate software in a separate location to enable a client to relocate regular staff to resume and maintain routine computerized operations in event of a disaster such as a fire or flood.	X	X	X	541510	541510	541510	83149
5112 518 54151	1.5.4.9	X				Other IT technical support services n.e.c.	The provision of technical expertise to solve specialized problems for the client other than computer auditing and assessment, data recovery services, and disaster recovery services.	X	X	X	541510	541510	541510	83149

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			5 National Product Detail					10 Product Exists in:			13 NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.6					Information and document transformation services	The provision of technical expertise and equipment to transform information and documents from one format or media to another.	X	X	X	518210 541510	518210 541510	518210 541510	85960
5112 518 54151	1.6.1	X				Imaging and other data capture services	The service of converting paper documents into digital or other machine-readable formats. The service generally involves the following components: 1) document preparation, 2) scanning, optical character recognition, and other data capture activities, 3) and the delivery or output of the information captured into a database or a physical medium.	X	X	X	518210 541510	518210 541510	518210 541510	85960
5112 518 54151	1.6.2	X				Data conversion and migration services	The service of moving data from one storage device to another or from one file format to another.	X	X	X	518210 541510	518210 541510	518210 541510	85960
5112 518 54151	1.7					Internet access and backbone services	The provision of a connection to the Internet and carriage of traffic over the Internet.	X	X	X	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	84200
5112 518 54151	1.7.1					Internet access services	The provision of a direct connection to the Internet, both wired and wireless.	X	X	X	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	84200
5112 518 54151	1.7.1.1	X				Internet access - narrowband	This service consists of a direct connection to the Internet, both wired and wireless, at speeds not exceeding 64Kbps. The Internet Service Provider (ISP) may also provide free services along with Internet access such as e-mail, space for the customer's web page, tools for simple web page design, chat, technical support, etc. This service may also include remote access or other types of Internet access and package upgrades such as international roaming, extra e-mail boxes, etc., usually for additional costs to customers.	X	X	X	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	84200
5112 518 54151	1.7.1.2	X				Internet access - broadband	This service consists of a direct connection to the Internet, both wired and wireless, at speeds exceeding 64Kbps. The Internet Service Provider (ISP) may also provide free services along with Internet access such as e-mail, space for the customer's web page, tools for simple web page design, chat, technical support, etc. This service may also include remote access or other types of Internet access and package upgrades such as international roaming, extra e-mail boxes, etc., usually for additional costs to customers.	X	X	X	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	518111 518210 541510 517110 517210 517510	84200

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			National Product Detail					Product Exists in:			NAICS Industries Producing the Product			
			Can	Méx	US			Can	Méx	US	Can	Méx	US	
5112 518 54151	1.7.2	X				Internet backbone services	This service consists of the carriage of Internet traffic by one ISP for another ISP (generally known in the industry as peering and transit charges).	X	X	X	518111 517110	518111 517110	518111 517110	84200
5112 518 54151	1.8	X				Internet telecommunication services	This service consists of providing telecommunications services over the Internet other than Internet access. This includes services such as fax, telephony, audio conferencing and video conferencing over the Internet	X	X	X	518111 518210 541510	518111 518210 541510	518111 518210 541510	84130
5112 518 54151	1.9					Software publishing	Software that is developed for wide distribution and is produced for multiple sale or licensing.	X	X	X	511210 518210	511210 518210	511210 518210	83142
5112 518 54151	1.9.1					System software publishing	The low-level software required to manage computer resources and support the production or execution of application programs but which is not specific to any particular application.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.1.1	X				Operating systems software publishing	The low-level software which handles the interface to peripheral hardware, schedules tasks, allocates storage, and presents a default interface to the user when no application program is running. (Includes all client and network operating systems).	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.1.2	X				Network software publishing	Software that is used to control, monitor, manage and communicate with operating systems, networks, network services, databases, storage and networked applications in an integrated and cooperative fashion across a network from a central location. (Includes all network management software, server software, security and encryption software, middleware, etc).	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.1.3	X				Database management software publishing	A collection/suite of software programs that enables storage, modification and extraction information from a database. There are many different types of DBMSs ranging from small systems that run on computers to huge systems that run on mainframes, e.g. Oracle.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.1.4	X				Development tools and programming languages software publishing	Software used to assist in the development and/or authoring of computer programs. Software products that support the professional developer in the design, development, and implementation of a variety of software systems and solutions. (Includes all program development tools and programming languages software).	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.1.5	X				Other systems software publishing	Systems software not elsewhere classified.	X	X	X	511210	511210	511210	83149

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			Can	Méz	US			Can	Méz	US	Can	Méz	US	
5112 518 54151	1.9.2					Application software publishing	Software program that performs a specific function directly for the end user.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.2.1	X				General business productivity and home use applications publishing	Software used for general business purposes to improve productivity, or in the home for entertainment, reference or educational purposes. (Includes office suite applications such as word processors, spreadsheets, simple databases; graphics applications; project management software, computer-based training software, games, reference, home education, etc.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.2.2	X				Cross-industry application software publishing	Software that is designed to perform and/or manage a specific business function or process that is not unique to a particular industry. (Includes professional accounting software, human resource management, customer relations management software, Geographic Information System software, web page/site design software, etc.)	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.2.3	X				Vertical market application software publishing	Software that performs a wide range of business functions for a specific industry such as manufacturing, retail, healthcare, engineering, restaurants, etc.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.2.4	X				Utilities software publishing	A small computer program that performs a very specific task. Utilities differ from other applications software in terms of size, cost and complexity. Examples include: compression programs, anti-virus, search engines, font, file viewers, and voice recognition software.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.9.2.5	X				Other application software publishing	Applications Software not elsewhere classified.	X	X	X	511210	511210	511210	83142
5112 518 54151	1.10	X				Re-sale of computer hardware and software	Retailing of computer hardware and software.	X	X	X	511210 518111 541510	511210 518111 541510	511210 518111 541510	831418 3149
5112 518 54151	1.11	X				Rental and leasing of computer hardware	The rental or lease of computer hardware.	X	X	X	541510	541510	541510	85960
5112 518 54151	1.12	X				IT-related training services	The provision of training for the use of computer hardware, software, networks, or other IT-related topic.	X	X	X	511210 518111 541510	511210 518111 541510	511210 518111 541510	83142
5112 518 54151	2.1					<i>Non-computer-services</i>	The provision of other services such as data analysis, computer staff augmentation, management consulting, and sale of online advertising space.			X	518111 518210 541510	518111 518210 541510	518111 518210 541510	
5112 518 54151	2.11	X				Data analysis services	The provision of the analysis of the client's existing data sets. This includes data mining.	X	X	X	541510	541510	541510	83149
5112 518 54151	2.12	X				Computer staff augmentation services	This service consists of providing a client with temporary or longer term computer systems experts to augment a clients own computer specialists.	X	X	X	541510	541510	541510	83150
5112 518 54151	2.13	X				Management consulting services	The provision of advice or expert opinion in regards to business strategy.	X	X	X	518210 541510	518210 541510	518210 541510	83149

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			Can	Méz	US			Can	Méz	US	Can	Méz	US	
5112 518 54151	2.14	X				Sale of online advertising space	The sale of space for online advertisements.	X	X	X	518111	518111	518111	843008 3620
5112 518 54151	2.15	X				Sale or licensing of rights - Internet content	Selling or licensing the rights to reproduce all or part of a work of intellectual property for distribution over the Internet. (It is under review whether or not this is the same product as Sale or Licensing of Rights.)		X	X	518111	518111	518111	83149
5112 518 54151	2.16	X				Re-sale of goods except computer hardware and software	Retailing of goods other than computer hardware and software.	X	X	X	518111	518111	518111	623

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