Economic Classification Policy Committee; Initiative to Create a Product Classification System, Phase I: Exploratory Effort to Classify Service Products

AGENCY: Office of Management and Budget, Executive Office of the President

ACTION: Proposed Development of a Comprehensive and Integrated North American Product Classification System

SUMMARY: Under Title 44 U. S. C. 3504(e), the Office of Management and Budget (OMB), through its Economic Classification Policy Committee (ECPC), is seeking public comment on the proposed development of a comprehensive classification system for products produced by North American Industry Classification System (NAICS) industries. The ECPC proposes, over the long term, to develop a comprehensive and integrated North American Product Classification System for the products produced by industries classified under the North American Industry Classification System (NAICS) and, over the short term, to explore the feasibility of identifying and classifying products produced by selected NAICS service industries. The ECPC is particularly seeking proposals for an initial identification of the service products created by industries in selected service sectors as well as comments on related discussions of needs and uses for product data, guiding principles for the product classification development, and organization and tasks of the product classification committees. In addition, the ECPC is seeking information sources in the academic and business communities that can be used by the classification committees to identify the products created by the service industries included in Phase I (see Industry Appendix).

DATES: To ensure consideration, all comments on the development of a product classification system and proposals for products must be received electronically or in writing no later than June 15, 1999.
ADDRESSES: Please send comments and proposals for products electronically either by e-mail to prodclass@ccmail.census.gov or by using the response form found on www.census.gov/products. Proposals may also be mailed to Michael F. Mohr, Coordinator, ECPC Initiative to Classify Service Products, Bureau of the Census, U.S. Department of Commerce, Room 2633-3, Washington, DC 20233, telephone number (301) 457-2589, FAX (301) 457-1536. Proposals will become part of the library of background information to guide the work of the classification committees. All comments and proposals received in response to this notice will be available for public inspection at the Bureau of the Census, U.S. Department of Commerce, 4700 Silver Hill Road, Suitland, MD 20233. Please telephone the Bureau of the Census at (301) 457-2589 to make an appointment. Those making proposals will be notified directly of action taken by the ECPC.

Those wishing to identify information sources for the service industries included in Phase I should do so either through the website at www.census.gov/products, or by e-mail to prodclass@ccmail.census.gov, or by contacting Michael F. Mohr, Coordinator, ECPC Initiative to Classify Service Products, Bureau of the Census, U.S. Department of Commerce, Room 2633-3, Washington, DC 20233, telephone number (301) 457-2589, FAX (301) 457-1536.

Web Page: A Web Page for the product classification initiative can be found at www.census.gov/products. This site provides extensive information on, and will report news about, the initiative; it also provides a structured medium through which interested parties can participate electronically in Phase I by identifying information sources and submitting proposals for the products produced by the covered service industries.

Electronic Availability: This document is available on the World Wide Web from the Census Bureau at the address <http://www.census.gov/products> under the listing Federal Register Notice. This document is also available via File Transfer Protocol (FTP) at the address <ftp.census.gov/pub/epcd/www/products/products99.txt>. A more comprehensive treatment of the subject matter contained in this notice is provided in a Discussion Paper that is also available electronically at the foregoing addresses. Copies of the NAICS manual referenced in this notice can be ordered from the National Technical Information Service at the address <http://www.ntis.gov/naics> or (800) 553-6847.

FOR FURTHER INFORMATION CONTACT: Parties wishing further information on the work described in this notice should contact Michael F. Mohr, Coordinator: ECPC Initiative to Classify Service Products, Bureau of the Census, U.S. Department of Commerce, Room 2633-3, Washington, DC 20233, E-mail michael.f.mohr@ccmail.census.gov, telephone number (301) 457-2589, FAX (301) 457-1536.

SUPPLEMENTARY INFORMATION:
Background

In a Federal Register notice of July 26, 1994 (59 FR 38092-38096), OMB announced that the ECPC had agreed to work in concert with Mexico’s Instituto Nacional de Estadística, Geografía e Informática (INEGI) and Statistics Canada to develop a new and common industry classification system - the North American Industry Classification System (NAICS) - that would replace the existing system used in the United States, the Standard Industrial Classification System (SIC). Final agreement on NAICS was announced in a Federal Register notice of April 9, 1997 (62 FR 17287-17337). This agreement resulted in the publication in 1998 of the new North American Industry Classification System, United States, 1997 manual.

In addition to announcing the development of NAICS, the 1994 Federal Register notice also indicated that each country would provide product data compiled within the framework of its respective statistical system, to meet the need for such information. Recognizing the increasing international trade in goods and services, each country envisaged working cooperatively to help improve existing commodity classification systems, including the Harmonized System (HS) of the Customs Cooperation Council and the United Nations’ Provisional Central Product Classification System (CPC) for services. In particular, the three countries agreed that such cooperation would entail coordinating their product classification efforts and keeping each other informed of proposals for change in this area. Integral to the product classification accord was a common recognition by the statistical agencies of the three countries that “market-oriented, or demand-based, groupings of economic data are required for many purposes, including studies of market share, demand for goods and services, import competition in domestic markets and similar studies.”

In recognition of the product classification accord, the ECPC committed to expanding the list of commodities and services that would be available from the 1997 Economic Censuses. The ECPC also established two product code task forces to implement this commitment - the Investment Goods Product Code Task Force and the Service Product Code Task Force. Although preliminary work on service products classification began in 1993, that work was subsequently terminated because the total restructuring of the industry classification system consumed all available resources within the statistical agencies.

Having now largely accomplished the industry classification objectives for NAICS, the ECPC is announcing a new initiative to develop a comprehensive classification system for the products produced by NAICS industries. This initiative will be conducted as a joint effort by Canada, Mexico, and the United States. The long-term objective of the joint initiative is to develop a market-oriented/demand-based classification system for products that (a) is not industry-of-origin based but can be linked to the NAICS industry structure, (b) is consistent across the three NAICS countries, and (c) promotes improvements in the identification and classification of service products across international classification systems, such as the Central Product Classification System of the United Nations.
Product Classification System Initiative

The ECPC anticipates that the initiative to classify service products will be a comprehensive effort that addresses both the conceptual issues and the data collection issues necessary to ensure that the system is conceptually sound, feasible to implement, and relevant to analytical and operational objectives. The initiative will be implemented in two phases. An interim, or exploratory, phase to be launched in early 1999 and completed during 2000 (Phase I), will develop preliminary product classifications for a subset of NAICS service industries. These results will be incorporated in the 2002 Economic Census and related programs. A second, or final, phase of this initiative will be launched after the 2002 Economic Census. Exploiting the lessons and insights gained from the deliberations of Phase I and the data collection activities of the 2002 Economic Census, this phase (Phase II) will develop a complete and fully integrated product classification system that extends to all NAICS industries. The results of Phase II will be incorporated in the 2007 Economic Census and related programs.

In undertaking this effort, the ECPC recognizes that the development of even a preliminary classification system for selected service products will be a complex endeavor that will tax the expertise of the statistical agencies which currently lack familiarity with how industry produces these service products. Accordingly, the ECPC is actively seeking information sources in the academic and business communities that can be used by the classification committees to identify the products created by the service industries included in Phase I (see Industry Appendix). Commentors who wish to provide such information should refer to the ADDRESSES section of this notice.

The ECPC is seeking proposals for the initial identification of service products as well as comments on the discussion of needs and uses and guiding principles for the product classification, and the organization and tasks of the classification committees. In accordance with the proposed classification development process outlined below, the ECPC requests that respondents to this notice support their proposals for the identification and definition of service products for service industries included in Phase I of this initiative with documentation that provides information to support the following tasks:

1. Developing a model/description of the production process for each industry;
2. Identifying/defining the final products sold by each industry;
3. Developing formal definitions for the identified products; and
4. Proposing suggestions for organizing the products identified for each sector into a market-oriented classification system that will allow users to:
   5. Identify the quantity and price(s) of each product produced by each industry,
   6. aggregate common products across all industries, and
   7. group and aggregate products in a manner that satisfies the demand-side classification framework adopted by the three NAICS countries.
Phase I: Classification of Service Products

The first or interim phase of the initiative proposes to identify and classify the products produced by the industries in four NAICS service sectors - Information (Sector 51); Finance and Insurance (Sector 52) except Insurance (Subsector 524); Professional, Scientific, and Technical Services (Sector 54); and Administrative and Support, Waste Management and Remediation Services (Sector 56).(4)

Needs and Uses

There are two reasons for the focus on services in Phase I. First, the value of final production produced by industries included in NAICS service sectors now accounts for about 45 percent of private sector Gross Domestic Product (GDP) in the U.S., and these sectors include some of the fastest growing segments of the economy, such as computer services, communications, management consulting, temporary help services, and health services. Second, despite its importance in the overall private economy, the U.S. currently has no product classification system for service industries. In contrast, the Census Bureau has been collecting product-level data for manufacturing industries since at least the 1899 Census of Manufactures; by 1939 it was collecting data for approximately 6,400 manufactured products. Moreover, the Census Bureau has had a published list of manufactured products and product codes since 1947 - the Numerical List of Manufactured and Mineral Products, which has been revised and updated every five years (in conjunction with the economic censuses). By 1967 the list of manufactured products had grown to 10,500, but more than 12,000 products were included under the NAICS classification system for the 1997 Economic Census.

The collection of product data for these manufactured products by the Census Bureau and the collection of associated producer price data by the Bureau of Labor Statistics (BLS) have long provided national accountants and researchers with the information necessary to estimate, monitor, and analyze the growth in real output, prices, productivity, international trade, and competitiveness in the manufacturing sector. In turn, these manufacturing estimates and analyses have long served to influence and guide the formulation of government policies, including industrial, international trade, fiscal, and monetary policies. And, within the business community, Census Bureau tabulations of the detailed products made and used by manufacturers have been highly valued and much utilized, as a reliable and comprehensive source of information on trends and new developments in the product markets in which businesses operate and compete.

Over the last several decades, however, the share of U.S. national output derived from service sector industries has grown to exceed the share derived from manufacturing and all other goods-producing sectors combined. Moreover, that share seems certain to grow over the long-term and, perhaps, accelerate its pace. In recognition of this profound structural change, the ECPC believes it is critical to provide the business and economics community - business analysts, policy makers, researchers, and statistical agencies - with the kind of comprehensive, well-organized data on the products produced by
service industries that presently exist for the products produced by manufacturing and other goods-producing industries.

Thus, the overriding objective of Phase I of the initiative is to systematically explore the development of a formal classification system for service products that can be used throughout the public and private communities of users to coordinate the collection, tabulation, and analysis of data on the value of the detailed products sold or produced for final consumption by selected service industries and on the prices charged for those products. Although preliminary, the results from Phase I will be available to guide the collection of data for service products in the affected industries during the 2002 Economic Census. In contrast to Phase I, the ultimate objective of Phase II of the initiative will be to develop an agreed-upon, integrated, and comprehensive list of products, product definitions, and product codes that (1) encompasses the products of both goods- and service-producing industries alike and (2) accommodates a demand-side/market-oriented classification framework for grouping and aggregating these products.

**Guiding Principles**

The ECPC is proposing three general principles to guide the overall process of classifying the products produced by industries:

1. An understanding of the production process of the reporting units included in the respective industries is a required first principle for identifying and defining the product(s) actually produced for final consumption by those industries. (5)

2. The aim of the product classification process should be to identify, define, and classify the final products produced and transacted by the reporting units within each industry. The final products of reporting units in an industry are those that are created and transacted (sold or transferred) by the reporting units to economic entities outside of the individual reporting units.

3. The classification of products produced by industries should be based on a market-oriented, or demand-based, conceptual framework. (6)

With respect to the first principle, the ECPC believes it is necessary to approach the process of product classification for industries from the perspective of the production process because it provides the necessary conceptual framework for: (a) identifying the activities performed by a given industry, (b) facilitating an ordered consideration of information and competing hypotheses about the role of any products derived from those activities in the production process, (c) developing informed judgements about the final products produced by the industry, and (d) providing insights into the transaction unit that is appropriate and feasible for measuring the respective products and the reporting unit that is appropriate for collecting the data. Put simply, in order to satisfy the second principle, it is necessary to
distinguish the final products produced by a given industry's production process from the intermediate outputs produced and consumed by that process. While this approach has significance for industries generally, it is especially important in the case of service industries where, in contrast to goods-producing industries such as manufacturing, there exists much confusion about what many service industries do and how they do it.

Finally, once the products of the industries have been identified and defined, it is necessary to organize those products according to a consistent classification principle that is acceptable and useful to all segments of the data using community. The third principle reflects the ECPC's commitment to satisfy this requirement in a manner that reflects the consensus reached on this issue by the three NAICS countries. The guiding role of the third principle in classifying and grouping products was enunciated by Triplett [1994a, p. 6], who noted that a product grouping system "should incorporate, and facilitate the analysis of, the relationships among products - demand relations, substitution relations, marketing relationships, uses by consumers or by other ultimate purchasers."

Guidelines for Product Identification in Service Industries

Identifying the final products of each industry is the first step in developing a product classification system. Recognizing that this step can be difficult for many service industries, the ECPC intends that private sector respondents to this Initiative and the classification committees will formulate proposals for the products of a given service industry in the context of the following definitions and guidelines.

- **Conceptual Definition of a Service Product:** A service is a change in the condition of a person, or a good belonging to some economic entity, brought about as the result of the activity of some other economic entity, with the approval of the first person or economic entity. To correctly define the product(s) of a service industry it is essential to specify exactly what the producer agrees to sell and what the customer agrees to buy. That is, a determination must be made of what is implicitly or explicitly "contracted for" when a transaction takes place. Further, it is important to distinguish between the output the industry produces and the activities carried out by the industry to produce the output.

- **Final Service Product:** The final products of reporting units in an industry are the service products (simple, composite, or bundle) that are created and transacted (sold or transferred) by the reporting units to other reporting units, enterprises, institutions or persons; domestic or international.

- **Types of Service Products:** The final service products may include one or more of the following broad types:

  (a) **simple service:** a standard service whose real output can often be measured in physical units or counts; e.g., a traditional haircut or basic phone service.
(b) composite service: a product that embodies several distinct services that are produced together (by virtue of regulations, production process, safety or hygiene requirements, or industry practice). The customer is not free to pick and choose among the several services in the composite -- the consumer buys all or none; e.g., a conventional hotel room rental includes maid service, salon haircuts include shampooing, or the final product (diagnosis or course of treatment) created by a doctor’s office visit may embody a variety of required diagnostic services (see related discussion in section C below).

(c) service bundle: a product containing a collection of services negotiated between the service provider and the customer and whose composition may vary by customer; e.g., traditional phone service plus call waiting and/or caller ID, etc., a bundle of information services that can be transmitted through a common medium (cable, satellite) and that may include voice, data and/or visual services, etc., or different bundles of janitorial services, or legal services, or accounting services, etc.

- **Product Detail**: Identify and define products for your selected industry at a level of detail that accords with prevailing marketing practices and record keeping practices in the industry.

**Classification Committees**

Phase I of the initiative will be accomplished through the creation of four classification committees (one per sector) that will operate simultaneously and draw on the combined talent and resources of the Federal statistical agencies. The ECPC also will strive to provide each committee with consultancy support from private sector industry experts. The committees will implement a comprehensive product classification process for each NAICS service industry in the Industry Appendix below. The process will include:

1. Developing a model/description of the production process for each industry;
2. Identifying/defining the final products sold by each industry;
3. Developing formal definitions for the identified products; and
4. Proposing suggestions for organizing the products identified for each sector into a market-oriented classification system that will allow users to:
   a. identify the quantity and price(s) of each product produced by each industry,
   b. aggregate common products across all industries, and
   c. group and aggregate products in a manner that satisfies the demand-side classification framework adopted by the three NAICS countries.
In addition, each classification committee will consider issues related to the unit of measurement and to the feasibility of measuring and reporting data on output and prices for the products identified for the respective service industries, including industry record-keeping practices and reporting units.

Donald R. Arbuckle,

Acting Administrator and Deputy Administrator,
Office of Information and Regulatory Affairs.

References


Industry Appendix

U.S. Industries Arranged by NAICS Sectors, Subsectors, and Industry Groups

51 INFORMATION
511 Publishing Industries
5111 Newspaper, Periodical, Book, and Database Publishers
51111 Newspaper Publishers
51112 Periodical Publishers
51113 Book Publishers
51114 Database and Directory Publishers
51119 Other Publishers
511191 Greeting Card Publishers
511199 All Other Publishers
5112 Software Publishers
51121 Software Publishers
512 Motion Picture & Sound Recording Industries
5121 Motion Picture & Video Industries
51211 Motion Picture & Video Production
51212 Motion Picture & Video Distribution
51213 Motion Picture & Video Exhibition
512131 Motion Picture & Theaters (except Drive-Ins)
512132 Drive-In Motion Picture Theaters
51219 Postproduction Services and Other Motion Picture and Video Industries
512191 Teleproduction and Other Postproduction Services
512199 Other Motion Picture and Video Industries
513 Broadcasting & Telecommunications
5131 Radio & Television Broadcasting
51311 Radio Broadcasting
513111 Radio Networks
513112 Radio Stations
51312 Television Broadcasting
5132 Cable Networks & Program Distribution
51321 Cable Networks
51322 Cable & Other Program Distribution
5133 Telecommunications
51332 Wireless Telecommunications Carriers (except Satellite)
513321 Paging
513322 Cellular & Other Wireless Telecommunications
51333 Telecommunications Resellers
51334 Satellite Telecommunications
51339 Other Telecommunications
514 Information Services & Data Processing Services
5141 Information Services
51411 News Syndicates
51412 Libraries & Archives
51419 Other Information Services
514191 On-Line Information Services
514199 All Other Information Services
5142 Data Processing Services
51421 Data Processing Services

52 FINANCE & INSURANCE
521 Monetary Authorities - Central Bank
5211 Monetary Authorities - Central Bank
52111 Monetary Authorities - Central Bank
522 Credit Intermediation & Related Activities
5221 Depository Credit Intermediation
52211 Commercial Banking
52212 Savings Institutions
52213 Credit Unions
52219 Other Depository Credit Intermediation
5222 Nondepository Credit Intermediation
52221 Credit Card Issuing
52222 Sales Financing
52229 Other Nondepository Credit Intermediation
522291 Consumer Lending
522292 Real Estate Credit
522293  International Trade Financing
522294  Secondary Market Financing
522298  All Other Nondepository Credit Intermediation
5223  Activities Related to Credit Intermediation
52231  Mortgage & Nonmortgage Brokers
52232  Financial Transactions Processing, Reserve, & Clearinghouse Activities
52239  Other Activities Related to Credit Intermediation
523  Securities, Commodity Contracts & Other Financial Investments & Related Activities
5231  Securities & Commodity Contracts Intermediation & Brokerage
52311  Investment Banking & Securities Dealing
52312  Securities Brokerage
52313  Commodity Contracts Dealing
52314  Commodity Contracts Brokerage
5232  Securities & Commodity Exchanges
52321  Securities & Commodity Exchanges
5239  Other Financial Investment Activities
52391  Miscellaneous Intermediation
52392  Portfolio Management
52393  Investment Advice
52399  All Other Financial Investment Activities
523991  Trust, Fiduciary & Custody Activities
523999  Miscellaneous Financial Investment Activities
525  Funds, Trusts & Other Financial Vehicles
5251  Insurance & Employee Benefit Funds
52511  Pension Funds
52512  Health & Welfare Funds
52519  Other Insurance Funds
5259  Other Investment Pools & Funds
52591  Open-End Investment Funds
52592  Trusts, Estates & Agency Accounts
52593  Real Estate Investment Trusts
52599  Other Financial Vehicles

54 PROFESSIONAL, SCIENTIFIC & TECHNICAL SERVICES
541  Professional, Scientific & Technical Services
5411  Legal Services
54111  Offices of Lawyers
54112  Offices of Notaries
54119  Other Legal Services
541191  Title Abstract & Settlement Offices
541199 All Other Legal Services
5412 Accounting, Tax Preparation, Bookkeeping & Payroll Services
54121 Accounting, Tax Preparation, Bookkeeping & Payroll Services
541211 Offices of Certified Public Accountants
541213 Tax Preparation Services
541214 Payroll Services
541219 Other Accounting Services
5413 Architectural, Engineering & Related Services
54131 Architectural Services
54132 Landscape Architectural Services
54133 Engineering Services
54134 Drafting Services
54135 Building Inspection Services
54136 Geophysical Surveying & Mapping Services
54137 Surveying & Mapping (except Geophysical) Services
54138 Testing Laboratories
5414 Specialized Design Services
54141 Interior Design Services
54142 Industrial Design Services
54143 Graphic Design Services
54149 Other Specialized Design Services
5415 Computer Systems Design & Related Services
54151 Computer Systems Design & Related Services
541511 Custom Computer Programming Services
541512 Computer Systems Design Services
541513 Computer Facilities Management Services
541519 Other Computer Related Services
5416 Management, Scientific, & Technical Consulting Services
54161 Management Consulting Services
541611 Administrative Management & General Management Consulting Services
541612 Human Resources & Executive Search Consulting Services
541613 Marketing Consulting Services
541614 Process, Physical Distribution & Logistics Consulting Services
541618 Other Management Consulting Services
54162 Environmental Consulting Services
54169 Other Scientific & Technical Consulting Services
5417 Scientific Research & Development Services
54171 Research & Development in the Physical, Engineering & Life Sciences
54172 Research & Development in the Social Sciences & Humanities
5418 Advertising & Related Services
54181 Advertising Agencies
54182 Public Relations Agencies
54183 Media Buying Agencies
54184 Media Representatives
54185 Display Advertising
54186 Direct Mail Advertising
54187 Advertising Material Distribution Services
54189 Other Services Related to Advertising
5419 Other Professional, Scientific, and Technical Services
54191 Marketing Research & Public Opinion Polling
54192 Photographic Services
541921 Photography Studios, Portrait
541922 Commercial Photography
54193 Translation & Interpretation Services
54194 Veterinary Services
54199 All Other Professional, Scientific & Technical Services

56 ADMINISTRATIVE AND SUPPORT AND WASTE MANAGEMENT AND REMEDIATION SERVICES
561 Administrative & Support Services
5611 Office Administrative Services
56111 Office Administrative Services
5612 Facilities Support Services
56121 Facilities Support Services
5613 Employment Services
56131 Employment Placement Agencies
56132 Temporary Help Services
56133 Employee Leasing Services
5614 Business Support Services
56141 Document Preparation Services
56142 Telephone Call Centers
561421 Telephone Answering Services
561422 Telemarketing Bureaus
56143 Business Service Centers
561431 Private Mail Centers
561439 Other Business Service Centers (including Copy Shops)
56144 Collection Agencies
56145 Credit Bureaus
56149  Other Business Support Services
561491  Repossession Services
561492  Court Reporting & Stenotype Services
561499  All Other Business Support Services
5615  Travel Arrangement & Reservation Services
56151  Travel Agencies
56152  Tour Operators
56159  Other Travel Arrangement & Reservation Services
561591  Convention and Visitors Bureaus
561599  All Other Travel Arrange & Reservation Services
5616  Investigation & Security Services
56161  Investigation, Guard & Armored Car Services
561611  Investigation Services
561612  Security Guards & Patrol Services
561613  Armored Car Services
56162  Security Systems Services
561621  Security Systems Services (except Locksmiths)
561622  Locksmiths
5617  Services to Buildings & Dwellings
56171  Exterminating & Pest Control Services
56172  Janitorial Services
56173  Landscaping Services
56174  Carpet & Upholstery Cleaning Services
56179  Other Services to Buildings & Dwellings
5619  Other Support Services
56191  Packaging & Labeling Services
56192  Convention & Trade Show Organizers
56199  All Other Support Services
562  Waste Management & Remediation Services
5621  Waste Collection
56211  Waste Collection
562111  Solid Waste Collection
562112  Hazardous Waste Collection
562119  Other Waste Collection
5622  Waste Treatment & Disposal
56221  Waste Treatment & Disposal
562211  Hazardous Waste Treatment & Disposal
562212  Solid Waste Landfill
562213  Solid Waste Combustors & Incinerators
1. The provisional CPC has since been replaced by version 1.0; see United Nations [1998].

2. See Economic Classification Policy Committee [1994], 59 FR 38094.

3. Nonetheless, the ECPC’s product classification objectives with respect to investment goods were largely achieved.

4. In addition to these four sectors, NAICS service sectors also include: Real Estate and Rental and Leasing (Sector 53); Management of Companies and Enterprises (Sector 55); Educational Services (Sector 61); Health Care and Social Assistance (Sector 62); Arts, Entertainment, and Recreation (Sector 71); Accommodation and Food Services (Sector 72); and Other Services (except Public Administration) (Sector 81).

5. The ECPC recognized the dual importance of this principle for classifying both service industries and the products produced by such industries early on; see Economic Classification Policy Committee [1993a], Section 6.5.

6. This classification principle was first established in several papers by Triplett [1990, 1994a, and 1994b]; see also Economic Classification Policy Committee [1993b].

7. See Hill [1977, p.318].

8. See Sherwood [1997, p.3].

9. These service product types were suggested by Chadeau [1997, p.2].