NAPCS Discussion Paper*

NAPCS Structure Illustration: Possible Product Groups, Sub-Groups, and Classes

Discussion Paper
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* NAPCS Discussion Papers are provided to foster and facilitate professional exchange on matters related to the development and implementation of NAPCS.
Note: the structure outlined in this document is not an official proposal by the United States.
Introduction

During the May 5-9, 2003 meeting of the Trilateral Steering Committee for Economic Classification (TSC), Canada, Mexico and the U.S. agreed to fundamental conceptual objectives and guidelines for the creation of a demand-based aggregation structure for NAPCS (see Discussion Paper 1 under NAPCS Discussion Papers link on the NAPCS Home Page). The NAPCS structure illustration presented here was designed to help facilitate the translation of these concepts into form by: (1) providing a considered and comprehensive illustration regarding the possible architecture of a demand-based aggregation structure for products that is consistent with the agreed-to NAPCS structure objectives and guidelines and (2) defining the upper levels of the NAPCS demand-based hierarchy at a level of detail sufficient to (a) identify the appropriate placement of broad categories of goods and services and (b) allow the development of detailed aggregation structures for service products underneath the top-level NAPCS aggregates for services. In general, I suggest that the upper levels of aggregation in the NAPCS structure should conform best with the product detail collected on expenditure surveys, while the lowest levels of aggregation, especially the detailed NAPCS products, should work best for classifying detailed product data available from suppliers. While I believe the illustration covers the overwhelming value of products that must be accounted for and placed in the final NAPCS structure, I make no pretense that the structure is anything but suggestive.

Guidelines and Considerations Underlying this Illustration

The dominant conceptual driver behind the illustration is the fundamental principle that all products should be classified according to their primary use and according to how they are used in relationship to each other. Having applied this fundamental principle, the resulting structure contains product groups that fall naturally into one of three class of customer categories:

1. Overwhelmingly purchased by households/persons
2. Overwhelmingly purchased by businesses, including institutions and government
3. Primary class of consumer is not overwhelming or clear.

However, the structure is based on how products are used, not on the class of customer that purchases them. And, it neither assumes nor requires data providers to delineate product revenues by class of customer beyond that stated in NAPCS product lists or already provided in known existing data collections. As such, the structure is entirely consistent with the principle the TSC previously in this area: “NAPCS structure should not be exclusively based on class of customer or final/intermediate demand grouping categories but those grouping categories are acceptable when appropriate for any particular detailed product area.”
At the top-level, the structure contains 45 product groups, with product group 45 devoted to public administration products. While product groups numbered 1-24 in the structure contain most all products primarily consumed for household/personal uses, it is important to note that many of these same products are heavily (perhaps primarily) purchased by businesses (e.g. prepared meals and beverage products in 1.2.1 and 1.2.2, travel and lodging products in 16.1 and 16.2, and health care products in 19.1 – 19.4). Similarly, while product groups numbered 25-45 in the structure contain most products that are primarily consumed for business uses, some of the products contained here are also heavily consumed and purchased by persons/households. For example, single-family home construction, maintenance and repair construction, and building materials and supplies are also included here (under product class 25.1.2, Construction of Buildings) because all these product types are used in close association with construction and it is not possible to comparably subdivide these product types between person/household uses and businesses uses. Overall, the products in Groups 25-44 are overwhelmingly used as inputs to production processes, and I arranged them according to a modified KLEMS (capital, labor, energy, materials, and services) configuration commonly found in the production theory literature. Specifically, because empirical studies indicate that capital, energy, and utilities are used as complements in production, I used a KELMS structure, except where specific service products were used in close association with the KELM components of the structure.

In creating the structure, I examined and borrowed from existing classification materials, even if I did not use the same terminology. I also wrestled constantly with the issue of how best (especially at what level of aggregation) to integrate goods and services used in close association with each other to satisfy a common need. In some cases, I judged that this integration could be successively achieved at a fairly low-level of aggregation; while in others I concluded would be best achieved by integrating at a higher level of aggregation. For example, under Product Sub-Group 25.1, Construction and Related Products, I first sought to integrate construction with architecture, urban planning, and engineering services, etc. at the product class level under non-building construction (25.1.1) and at the residential and nonresidential levels under building construction (25.1.2). Ultimately, however, I opted to integrate construction with these related product areas at the product subgroup level 25.1.
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1 Food and Beverage Products for Persons
   1.1 Processed Food and Beverages for Persons
      1.1.1 Original Production of Processed Food and Beverage Products for Persons
      1.1.2 Reselling of Processed Food and Beverage Products for Persons
   1.2 Meals and Non-Alcoholic Beverages, Prepared and Served or Dispensed, for Immediate Consumption
      1.2.1 Meals and Non-Alcoholic Beverages, Prepared and Served or Dispensed, for Immediate Consumption
      1.2.2 Alcoholic Beverages, Prepared and Served or Dispensed for Immediate Consumption
   1.3 Meals and Beverages for Immediate Consumption, Prepared under Long-Term Contract, for Transportation
      1.3.1 Meals and Beverages for Immediate Consumption, Prepared under Long-Term Contract, for Transportation
      1.3.2 Meals and Beverages for Immediate Consumption, Prepared under Long-Term Contract, Other than for Transportation
   1.4 Catered Meals and Beverages Services, Served at the Caterer's Premises
      1.4.1 Catered Meals and Beverages Services, Served at the Caterer's Premises
      1.4.2 Catered Meals and Beverages Services, Served at the Customer's Premises

2 Home Food Preparation, Service, and Storage Products
   2.1 Original Production of Home Food Preparation, Service, and Storage Equipment and Supplies
      2.1.1 Kitchen and Other Home Food Appliances
      2.1.2 Kitchen and Dining Accessories and Supplies

3 Tobacco and Smoking Products for Persons
   3.1 Tobacco, Smoking, and Accessory Products
      3.1.1 Original Production of Tobacco, Smoking, and Accessory Products
      3.1.2 Reselling of Tobacco, Smoking, and Accessory Products
   3.2 Cleaning and Repair Products for Smoking Accessories
      3.2.1 Cleaning and Repair Goods for Smoking Accessories
      3.2.2 Cleaning and Repair Services for Smoking Accessories

4 Clothing, Footwear, and Jewelry Products for Persons
   4.1 Clothing, Footwear, and Jewelry for Persons
      4.1.1 Original Production of Clothing, Footwear, and Jewelry
      4.1.2 Reselling of Clothing, Footwear, and Jewelry
   4.2 Cleaning, Repair, and Alteration Products for Clothing, Footwear, and Jewelry
      4.2.1 Home Laundry Appliances
      4.2.2 Laundry Soaps, Detergents, Bleaches, Cleaning Agents, and Polishes
      4.2.3 Other Repair Goods for Clothing, Footwear, and Jewelry
      4.2.4 Laundry, Tailoring, and Repair Services for Clothing, Footwear, and Jewelry
      4.2.5 Rental of Formal Wear and Costume Clothing

5 Housing and Related Products for Persons, except home construction and manufacturing
   5.1 Reselling/Buying of Single-Family Homes
   5.2 Home Financing
   5.3 Home Inspection
5.3.1 Home Inspection Services
5.3.2 Combined Home and Pest Inspection Services
5.3.3 New Home Inspection Services
5.4 Home, Apartment, and Rooming House Rental
5.5 Residential Property and Liability Insurance
   5.5.1 Homeowners Multiple Peril Insurance Products
5.6 Public Housing for Persons
5.7 Home Real Estate Services, except reselling/buying and rental
6 Home Cleaning Products
   6.1 Home Vacuum Cleaners and Cleaning Equipment
      6.1.1 Original Production of Home Vacuum Cleaners and Cleaning Equipment
      6.1.2 Reselling of Home Vacuum Cleaners and Cleaning Equipment
   6.2 Home Cleaning Agents
      6.2.1 Original Production of Home Cleaning Agents
      6.2.2 Reselling of Home Cleaning Agents
   6.3 Home Cleaning Services
7 Home Furnishings, Fixtures, and Accessory Products
   7.1 Home Furnishings, Fixtures, and Accessories
      7.1.1 Original Production of Household Furnishings, Fixtures, and Accessories
      7.1.2 Reselling of Household Furnishings, Fixtures and Accessories
   7.2 Cleaning, Repair, and Alteration of Household Furnishings, Fixtures, and Accessories
      7.2.1 Cleaning and Repair Goods
      7.2.2 Cleaning and Repair Services
8 Home Heating, Cooling, and Power Products
   8.1 Home Heating and Cooling Equipment
      8.1.1 Original Production
      8.1.2 Reselling
   8.2 Fuels and Utilities
      8.2.1 Natural Gas Utilities
      8.2.2 Propane
      8.2.3 Home Heating Oil
      8.2.4 Coal
      8.2.5 Steam and Water Utilities
      8.2.6 Electric Utilities
      8.2.7 Air-Conditioning from Water Utilities
9 Home Water and Sewer Products, except steam and air conditioning
   9.1 Home Water Purification Products
9.1.1 Original Production
9.1.2 Reselling

9.2 Home Water and Sewer Utilities

10 Home Waste Management Products, except water and sewer
10.1 Equipment and Supplies for Home Waste Management
   10.1.1 Original Production
   10.1.2 Reselling
10.2 Home Waste Management Services
   10.2.1 Non-Hazardous Waste and Recyclable Materials Collection Services, Residential
   10.2.2 Hazardous Waste Collection Services, Residential

11 Home Security and Safety Products
11.1 Home Security and Safety Equipment
   11.1.1 Original Production
   11.1.2 Reselling
11.2 Home Security and Safety Services

12 Household Entertainment, Recreation, and Culture Products
12.1 Home Audio and Visual Equipment (except computers), Components, and Accessories
   12.1.1 Original Production
   12.1.2 Reselling
12.2 Home Computers, Game Computers, and Related Equipment and Accessories
   12.2.1 Original Production
   12.2.2 Reselling
12.3 Home Computer Software, Personal and Game
   12.3.1 Original Production
   12.3.2 Reselling
12.4 Home Programming Services, including cable and wireless, subscription and pay-for-view
   12.4.1 Television Programming Services
   12.4.2 Radio Programming Services
12.5 Home Internet Service
   12.5.1 ISP Service
   12.5.2 Online Personal and Entertainment, except Newspapers, Periodicals, and Books
12.6 Home Newspapers, Periodicals, and Books (except textbooks)
   12.6.1 Original Production/Publication
   12.6.2 Reselling
12.7 Movie Theaters and Cinemas
12.8 Movie Rental
12.9 Performing Arts
12.10 Spectator Sports
12.11 Participatory Sports
   12.11.1 Sporting and Recreational Equipment, including bikes
   12.11.2 Sporting and Recreational Clubs, Centers, and Instructional Camps
12.12 Amusements Parks and Arcades
12.14 Other Activities and Hobbies NEC
   12.14.1 Children's Games and Toys
   12.14.2 Other

13 Home Communication Products
   13.1 Residential Telephone Equipment
      13.1.1 Original Production
      13.1.2 Reselling
      13.1.3 Rental
   13.2 Residential Telephony Services

14 Installation, Repair, Maintenance, and Rental Services for Household Electronics and Appliances

15 Transportation Products for Persons, except leisure travel
   15.1 Automobiles and Light-Duty Motor Vehicles, except fleet (includes motor cycles and scooters)
      15.1.1 Original Production of Automobiles and Light-Duty Motor Vehicles, except fleet
      15.1.2 Reselling of Automobiles and Light-Duty Motor Vehicles, except fleet
   15.2 Repair and Maintenance Services for Automobiles and Light-Duty Motor Vehicles, except fleet
   15.3 Leasing of Automobiles and Light-Duty Motor Vehicles, except fleet
   15.4 Parking Lots and Garages
   15.5 Automobile Driving Instruction
   15.6 Individual Motor Vehicle Insurance
   15.7 Local Transportation Services
      15.7.1 Taxis and Limousine
      15.7.2 Intra-city Bus
      15.7.3 School and Employee Bus
      15.7.4 Local Rail and Cable Car
      15.7.5 Local ferry and other water

16 Travel and Lodging Products for Persons, leisure and business
   16.1 Travel
      16.1.1 Motor Homes, Travel Trailers, and Campers
      16.1.2 Air Travel
      16.1.3 Intercity Rail and Related Travel
      16.1.4 Intercity and Chartered Bus Travel
      16.1.5 Cruise Ship Travel
16.1.6 Scenic and Sightseeing Travel
16.1.7 Short-Term Rental of Motor Vehicles and Other Transportation Equipment

16.2 Lodging
   16.2.1 Hotels and Motels
   16.2.2 Bed and Breakfast
   16.2.3 Other Leisure and Business Travel Lodging

16.3 RV Parks and Recreational Camps

16.4 Travel Arrangements, Reservation, and Planning Services

17 Financial, Insurance, and Tax Services for Persons NEC

18 Legal Products for Persons

19 Health Care Products for Persons
   19.1 Drugs and Medicines
      19.1.1 Original Production
      19.1.2 Reselling
   19.2 Health Care Equipment, Appliances, and Supplies for Persons
      19.2.1 Original Production
      19.2.2 Reselling
   19.3 Rental of Home Health Care Equipment
   19.4 Home Health Care and Related Products
      19.4.1 Services of Doctors Dentists, and Other Health Practitioners
      19.4.2 Hospital Services
      19.4.3 Medical and Diagnostic Services
      19.4.4 Home Health Care Services
      19.4.5 Nursing Home and Residential Care
      19.4.6 Public Health Services NEC
      19.4.7 Health Care Related Services NEC
   19.5 Health, Life, and Accident Insurance

20 Death Care Products for Persons
   20.1 Caskets and Other Goods
      20.1.1 Original Production
      20.1.2 Reselling
   20.2 Death Care Services

21 Personal Care Products
   21.1 Personal Care Goods
      21.1.1 Original Production
      21.1.2 Reselling
   21.2 Personal Care Services
22 Educational Products for Persons, except on-the-job training
   22.1 Textbooks and School Supplies
      22.1.1 Original Production
      22.1.2 Reselling
   22.2 Educational Services
      22.2.1 Elementary and Secondary Schools
      22.2.2 Colleges, Universities, and Professional Schools
      22.2.3 Business, Computer, and Management Training
      22.2.4 Technical and Trade Schools
      22.2.5 Vocational And Rehabilitation Services
      22.2.6 Other Educational Services
      22.2.7 Educational Support Services

23 Household Pet Products
   23.1 Goods for Household Pets
      23.1.1 Original Production
      23.1.2 Resale
   23.2 Services for Household Pets
      23.2.1 Veterinary Services
      23.2.2 Other Household Pet Services

24 Household and Personal Products NEC
   24.1 Household and Personal Goods NEC
      24.1.1 Original Production
      24.1.2 Reselling
   24.2 Household and Personal Services NEC

25 Capital Formation and Related Products
   25.1 Construction and Related Products
      25.1.1 Construction for Land and Resource Development and Infrastructure and Roads
      25.1.2 Construction of Buildings
      25.1.3 Special Trades Contractor Services NEC
      25.1.4 Landscaping Services
      25.1.5 Construction Materials and Supplies
      25.1.6 Architecture and Urban Planning Services, construction
      25.1.7 Engineering Services, construction
      25.1.8 Drafting Services, construction
      25.1.9 Surveying and Mapping Services, construction
   25.2 Building Acquisition and Management Products
      25.2.1 Reselling/Buying of Buildings, except single-family homes
25.2.2 Rental and Leasing of Nonresidential Buildings and Real Estate
25.2.3 Building Inspection, except home
25.2.4 Building Insurance, except home
25.2.5 Building Management, Security, Janitorial, and Support Services
25.2.6 Interior Design Services

25.3 Nonresidential Equipment and Related Products
25.3.1 Information Processing Equipment and Related Products
25.3.2 Industrial Equipment
25.3.3 Transportation Equipment
25.3.4 Farm Tractors and Machinery
25.3.5 Construction Tractors and Machinery
25.3.6 Mining, Oil, and Gas Field Machinery and Equipment
25.3.7 Floating Oil and Gas Drilling and Production Platforms
25.3.8 Engines (except aircraft and light-duty motor vehicles), Turbines, and Power Transmission Equipment
25.3.9 Electrical Appliances and Equipment NEC, commercial/heavy-duty
25.3.10 Electrical Transmission and Distribution Equipment
25.3.11 Service Industry Equipment
25.3.12 Furniture and Fixtures, except household
25.3.13 Other Nonresidential Equipment
25.3.14 Nonresidential Equipment Related Services NEC

25.4 Capital Formation Related Products NEC
25.4.1 Architecture and Urban Planning Services NEC
25.4.2 Engineering Services NEC
25.4.3 Drafting Services NEC
25.4.4 Geophysical Surveying and Mapping Services NEC
25.4.5 Surveying and Mapping Services, except Geophysical NEC

26 Nonresidential Heat and Power Products, except equipment
26.1 Refined Fuels, except natural gas
26.1.1 Original Production
26.1.2 Reselling

26.2 Natural Gas Utilities

26.3 Electric Utilities

27 Nonresidential Water, Sewer, and Environmental Products, except pollution abatement equipment
27.1 Water Supply and Sewage Treatment
27.2.1 Non-Hazardous Waste Management
27.2.2 Hazardous Waste Management

28 Labor Supply Products
29 Materials and Supplies NEC, classified by primary use

29.1 Materials and Supplies for Food and Beverage Manufacturing
   29.1.1 Original Production
   29.1.2 Reselling

29.2 Materials and Supplies for Clothing and Footwear Manufacturing
   29.2.1 Original Production
   29.2.2 Reselling

29.3 Materials and Supplies for Wood Manufacturing
   29.3.1 Original Production
   29.3.2 Reselling

29.4 Materials and Supplies for Furniture Manufacturing
   29.4.1 Original Production
   29.4.2 Reselling

29.5 Materials and Supplies for Paper Manufacturing
   29.5.1 Original Production
   29.5.2 Reselling

29.6 Materials and Supplies for Printing Processes
   29.6.1 Original Production
   29.6.2 Reselling

29.7 Materials and Supplies for Petroleum and Coal Products Manufacturing
   29.7.1 Original Production
   29.7.2 Reselling

29.8 Materials and Supplies for Chemical Manufacturing
   29.8.1 Original Production
   29.8.2 Reselling

29.9 Materials and Supplies for Plastics and Rubber Manufacturing
   29.9.1 Original Production
   29.9.2 Reselling

29.10 Materials and Supplies for Stone, Clay, and Glass Products Manufacturing
   29.10.1 Original Production
   29.10.2 Reselling

29.11 Materials and Supplies for Primary Metals Manufacturing
   29.11.1 Original Production
   29.11.2 Reselling

29.12 Materials and Supplies for Fabricated Metal Production
   29.12.1 Original Production
   29.12.2 Reselling
29.13 Materials and Supplies for Machinery Manufacturing
   29.13.1 Original Production
   29.13.2 Reselling

29.14 Materials and Supplies for Transportation Equipment Production
   29.14.1 Original Production
   29.14.2 Reselling

29.15 Materials and Supplies for Electrical Equipment, Appliances, and Component Production
   29.15.1 Original Production
   29.15.2 Reselling

29.16 Materials and Supplies for Agriculture, Hunting, and Fishing Industries
   29.16.1 Original Production
   29.16.2 Reselling

29.17 Materials and Supplies for Automotive Repair and Maintenance Industries
   29.17.1 Original Production
   29.17.2 Reselling

29.18 Materials and Supplies for Other Service Industries (detail TBD)

29.19 General Industry and Miscellaneous Materials and Supplies NEC
   29.19.1 Office Supplies
   29.19.2 Other General Materials and Supplies

30 Freight Transportation and Related Services (pt)
   30.1 Freight and Mail Transportation Services
      30.1.1 Truck
      30.1.2 Rail
      30.1.3 Water
      30.1.4 Air
      30.1.5 Intermodal
      30.1.6 Couriers and Messengers
      30.1.7 Nonresidential Postal Services
   30.2 Warehousing and Storage
   30.3 Pipeline Transportation

31 Product and Process Design and Testing Services
   31.1 Industrial Design Services
   31.2 Testing Services

32 Product and Process Research and Development Services

33 Advertising, Marketing, and Related Services
   33.1 Sale of Advertising Space
      33.1.1 Sale of Advertising Space in Newspapers
33.1.2 Sale Of Advertising Space in Periodicals

33.2 Marketing Services
   33.2.1 Market Research
   33.2.2 Special Event Production and/or Management
   33.2.3 Rental or Sale of Mailing Lists
   33.2.4 Directories

34 Publications for Trade, Professional, and Business
   34.1 Original Production/Publication
      34.1.1 Periodicals Business (including farming), Professional, and Academic
      34.1.2 Books Professional, Technical, and Scholarly
      34.1.3 Directories
      34.1.4 Databases and Other Collections of Information
   34.2 Reselling
      34.2.1 Periodicals
      34.2.2 Books

35 Contract Publishing and Related Services for Trade, Professional, and Business
   35.1 Contract Publishing Services
      35.1.1 Contract Publishing (excluding graphic design) Services, including bundled printing and distribution services
   35.2 Contract Printing Services
      35.2.1 Printing Services
      35.2.2 Printing with Distribution Services
   35.3 Contract Distribution Services
      35.3.1 Distribution Services
      35.4.1 Graphic Design Services
   35.5 Sale or Licensing of Publishing/Reproduction Rights
      35.5.1 Licensing of Publishing/Reproduction Rights
   35.6 Other Publishing Services
      35.6.1 Sale of Archived Material, newspapers
      35.6.2 Archival Research
      35.6.3 Training Services in Publishing

36 Broadcasting Services for Trade, Professional, and Business

37 Motion Picture and Video Services for Trade, Professional and Business
   37.1 Motion Picture and Video Production and Distribution
   37.2 Postproduction and Other Motion Picture and Video Services

38 Record and Sound Recording Services for Trade, Professional, and Business
   38.1 Record Production, Distribution, and Publishing Services
   38.2 Sound Recording Services
39 Management Consulting Services, excluding IT consulting
40 Financial and Insurance Services NEC for Trade, Professional, and Business
41 Accounting and Related Services for Trade, Professional and Business
   41.1 Accounting and Related Services
   41.2 Training Services, accounting
42 Legal and Related Services for Trade, Professional, and Business
   42.1 Legal Services
   42.2 Expert Witness Services (all types)
   42.3 Litigation Support Services (all types)
43 Contract Manufacturing Services, except printing (classified by primary industry user)
44 Other Nonresidential Products NEC
45 Public Administration