Using Business Functions to Measure International Trade and Economic Globalization

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Introduction

The increased global organization and fragmentation of value added chains constitute one of the most important and complex measurement challenges for economic, business and trade statistics. The geographic and organizational unbundling of the value chain is occurring across core goods- and services-producing activities, as well as business support services such as software and IT service, back-office functions, and even R&D (Baldwin, 2011). Like the policymakers, businesses, and public they serve, the organizations that produce and publish economic statistics, including national statistical institutes (NSIs) and well as multi-lateral organizations such as UN, the OECD, Eurostat, the WTO and UNCTAD, must adapt to a globalizing economy that encompasses increasingly complex and far-flung business linkages. The fact that these linkages can be national, regional, or global in scope heightens the demand for international harmonization at the same time that statistical systems are being stretched to include a broader range of products and activities.

Opportunity lies within these challenges, and good news is that a wave of experimentation is under way to try to capture the features, dynamics, and impacts of global value chains (GVCs). As the current conference demonstrates, international discussion and cooperation about how to adapt and improve economic statistics in the face of economic globalization is rising to unprecedented levels. New definitions and tools are being developed to capture the features, dynamics and impacts GVCs. This is happening for both the macro level statistics (e.g. Trade in Value Added (TiVA) and other international input-output datasets that seek to capture the net value of international trade) and for enterprise and establishment level statistics (e.g. business function surveys and improvements to business registers and administrative data). Clearly, the macro and micro can and should be connected. Business function surveys should be designed in such a way that they can feed into and improve international input-output datasets such as TiVA. However, there is much to be done before such an integrated global data system can be fully envisioned and agreed upon, much less put in place.

This paper focuses on the concept and definition of "business functions" as used in economic statistics. So far, business functions have been used in surveys to develop new information about how enterprises are engaged with the global economy. As such, the key statistics these surveys collect describe international trade (affiliated and non-affiliated). However, a formal link between business function statistics and international trade statistics has not been made. This paper takes a first step in this direction by developing a new list of business functions fully linked to classifications used for international trade. This is relevant for international input-output because these datasets, essentially, use international trade statistics to link national-level supply-use tables. While this is relatively straightforward in the case of goods trade, the poor quality of data on trade in services (Sturgeon et al, 2006; Jensen, 2011), both domestically and internationally, in turn reduces the quality of international input-output estimates. The notion underlying this paper, then, is that business function statistics might be used to begin to systematically fill in gaps in services statistics using a well defined, comprehensive, yet parsimonious statistical framework.

First, we discuss how business functions are beginning to be used to generate systematic information about how enterprises are linked to the global economy, and provide a few sample results from recent business function surveys. Second, an argument is made for the use of business functions in characterizing international trade in services. To further this effort, a list of business functions is proposed that fully corresponds to existing international services classifications including EBOPS 2010, CPC 2.0, and ISIC rev. 4 (see Annex Table 8).

The proposed list of business functions is intended for inclusion in the forthcoming concept paper on economic globalization and international trade to be presented to the UN Statistical Commission at its meeting in 2015. The list of business functions will also be included in the European Union's upcoming draft of the Framework Regulation Integrating Business Statistics (FRIBS). The proposed business function list is also linked to a new set of definitions of ICT Services and ICT-enabled Services developed in cooperation with the Partnership on Measuring ICT for Development's Task Group on Measuring Trade in ICT services and ICT-enabled Services (TGServ).[1] Finally, the list will serve as input to a proposed international classification of business functions, which has been supported by the UN expert group on international classifications.[2]

The Concept of Business Functions

The concept of business functions is new to the statistical toolbox. Business functions offer statisticians (and survey respondents) a set of generic, easy-to-understand categories that describe the various activities carried out by enterprises, irrespective of their main economic activity. Business function statistics are needed because enterprises, in addition to producing the core goods or services for which they earn revenues, typically require a variety of service functions to support their core activities. Thus business function lists typically consist of one or more *core* (or primary) output function(s) and a set of generic *support* functions (e.g., transport, IT, and administrative services). From a statistical perspective, the core/primary function of the enterprise can be associated with the industry or activity code(s) and associated products (goods or services), while support functions can be associated with the various business services that enterprises can either provide internally or source externally. Large scale or municipal services such as telecommunications or sewerage services are generally excluded from business function lists.

The first official survey to introduce the concept of business functions in a statistical context was the European Survey on International Sourcing, initially carried out in 2007 and repeated again in 2012. In both surveys, business functions were divided into the core business functions of the enterprise and support business functions as described in Table 1. Statistics Canada used a similar approach in 2009 and 2012 in its Survey of Innovation and Business Strategy. Unofficially, the approach was also pilot tested in the United States in the National Organizations Survey (NOS) in 2011 and adopted by researchers from several European universities, including the Nyenrode Business Universiteit and Halle Institute for Economic Research (IEW) in 2013.

So far, business functions have been used in surveys that collect information on the *domestic and international sourcing* practices of enterprises. The motivation for this has come from the growing practice of outsourcing and perhaps also offshoring either part or all of the core function (e.g., making use of manufacturing services), as well as support functions such as customer contact services, software coding, and "back-office" functions such as payroll and document management. In some instances, even the R&D process has been fragmented and relocated in GVCs, with various related activities interlinked via cross-border ICT systems (Lewin et al, 2008). Indeed, the ability to codify

[1] The TFSITS is mandated by the United Nations Statistical Commission and convened by the OECD with representatives from the World Trade Organization (WTO), the United Nations Statistics Division (UNSD), the International Monetary Fund (IMF), Eurostat, UNCTAD and the World Tourism Organization. The TGServ is led by UNCTAD, and other current members include UNESCWA, ITU, OECD and WTO. The TGServ will develop recommendations for statistical indicators on trade in ICT-related services, taking into account existing practices, available data, data gaps, policy needs and methodological work already developed.

[2] United Nations Statistical Division; Technical Subgroup on the Classification of Business Functions.

and computerize many service tasks has created vast new potential for trade in "ICT-enabled" services (Blinder, 2007; Jensen and Kletzer, 2008; Weslum and Reif, 2009). In sum, there is a need for surveys (or new questions on existing surveys) that can "look inside" the enterprise to detect the full or partial fragmentation and relocation of parts of core and support business functions.

Business functions can be conceived as an aggregation of tasks/products carried out by the enterprise. The concept is similar to the concept of tasks or occupations, but is focused on business activities rather than the activities of individual workers; a specific business function will typically involve a range of job categories and tasks.

The core business function represents the revenue-producing activity of the enterprise and will in most cases equal the main activity of the enterprise classified by activity or industry code entered in the Business Register. Core business functions denote a set of functions that produce goods or services intended for the market. The core function may span several activities and include related vertical activities (e.g., inputs) if the enterprise considers these to be part of its core revenue generating business function. While enterprises do incur costs from carrying out core business functions, the outputs of these functions can also be directly associated with revenues.

Support business functions (or ancillary activities) are carried out in order to permit or facilitate production of goods or services, but are not themselves sold directly for the market or to third parties. They do not directly generate revenues, only costs. However, the cost and quality of support functions can make important contributions to the competitiveness of enterprises (e.g. R&D). An important point is that while core functions may produce either goods or services, support functions are always services. Thus, measuring support functions is closely related to measuring business services, and data on the international sourcing of support functions can be conceived of as services trade. Again, since large-scale network and public infrastructure-related services are rarely, if ever, produced internally by enterprises, they are not characterized as business functions. Table 1 and **Error! Reference source not found.** provide the core and support function definitions used in the 2007 European Union Survey on International Sourcing.

Table 1. Core and Support Business Functions, Definitions used in the 2007 European Union Survey on International Sourcing

Core business function:
This function is the primary activity of the enterprise and will in most cases equal the main activity of the enterprise. It includes production of goods or services intended for the market/for third parties carried out by the enterprise and yielding income. The core business function equals in most cases the primary activity of the enterprise. It may also include other (secondary) activities if the enterprise considers these to comprise part of their core functions.
Support business function:
Support business functions (ancillary activities) are carried out in order to permit or facilitate production of goods or services intended for the market/for third parties by the enterprise. The outputs of the support business functions are not themselves intended directly for the market/for third parties.

Source: Nielsen: *International sourcing: Moving business functions abroad* (Statistics Denmark, 2008); available at www.dst.dk/globalisation and http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/International_sourcing_statistics

Because the core or primary function can be either goods or services, business function lists are equally applicable to goods-producing and services-producing enterprises. In fact, the revised business function list proposed later in this paper follows Statistics Canada by splitting the core function into two parts to capture the practices of enterprises that produce both goods and services.

Business Function Lists

As already mentioned, the specificity in the core, or primary business function can be captured by the activity or industry codes of the enterprise. While it is possible to designate support functions at a very detailed level, long lists create respondent burden and sector-specificity that make them poorly suited for economy-wide business surveys. The goal, therefore, has been to deploy concise lists of generic support functions that nevertheless seek to cover the full range of possible business activities that enterprises might either accomplish with their own employees, or source from an outside enterprise or contractor. The lists used in several important statistical surveys are summarized in the first four columns of Table 2, with the proposed list in the fifth column.

Table 2. Examples of Business Function Lists Used in Statistical Surveys (and Proposed Revision)

2007 International Sourcing (Eurostat)	2012 International Sourcing/Global Value Chains Survey (Eurostat)	2010 National Organizations Survey (USA: Brown and Sturgeon)	2009/2012 Survey of Innovation and Business Strategy (Statistics Canada)	Proposed Business Function List (grey different from 2012 Eurostat IS/GVC survey)
(7 functions : 1 core and 6 support)	**(6 functions: 1 core and 5 support)**	**(8 functions : 1 core and 7 support)**	**(14 functions: 2 core and 12 support)**	**(11: 2 core and 9 support)**
Core business function	Core business function	Primary business function	Provision of goods Production of services	**1. Core business functions** 1.1 Production of goods (for the market) 1.2 Provision of services (for the market)
Distribution and logistics	Distribution and logistics	Transportation, logistics, and distribution	Distribution and logistics	**2. Transport, logistics, and distribution support functions**
Marketing, sales and after sales services including help desks and call centers	Marketing, sales services and after sales services, incl. help desks and call centres	Customer and after-sales service Sales and marketing	Call centers and help centers Marketing, sales and after sales service	**3. Marketing, sales, after sales service support function**
ICT services	ICT services	Information technology systems	Data processing Software development Information & comm. Tech. (ICT) services	**4. IT services and software support functions** 4.1 IT Services 4.2 Software services *Note: telecommunications no longer included*
Administrative and management functions	Administrative and management functions	Management, administration, and back office functions	Legal services Accounting and book-keeping Human resource management Financial management	**5. Management, administration, and back-office support functions**
Research & Development Engineering and related technical services	R&D, engineering and related technical services	Research and Development of Products, Services, or Technology	Engineering and related technical services Research and development (R&D)	**6. R&D, Engineering and related technical services and R&D support functions** 6.1 Research and development services (R&D) 6.2 Engineering and related technical services (except R&D)
Other	Other	Facilities Maintenance Other	Other	**7. Other business functions** 7.1 Maintenance and repair services 7.2. Education and training 7.3 Other

Again, the 2007 European Union (EU) Survey on International Sourcing was the first large scale, economy-wide survey to use the concept of business functions. The survey was conducted in 13 European countries, using seven business functions and a residual "other" category (see first column

of Table 2). The survey was repeated in 2012 in 15 countries with six business functions (R&D and Engineering and Related Technical Services were combined, see second column of Table 2).

A more elaborate version of the European list of business functions was used by Statistics Canada for the Survey of Innovation and Business Strategy (SIBS), first carried out in 2009 and repeated in 2012. The list included 14 business activities plus a residual category (see fourth column of Table 2). The Canadian list split the core function into two; "production of goods" and "production of services", and identified "call center and help center activities" separately from the European aggregated support function "Marketing, sales and after sales services including help desks and call centers." Furthermore, "ICT services" was divided into the following three groups; "software development", "data processing" and "ICT services". Finally the support function "Administrative and management functions" was divided into four activities; "legal services", "accounting and bookkeeping", "HR management" and financial management." Because Statistics Canada essentially unpacked the European list of business functions, its sub categories can be aggregated to the European list.

A small pilot international sourcing survey called the National Organizations Survey (NOS) was carried out in the United States in 2011. With support from the National Science Foundation, the survey was led by two academic researchers, Drs. Clair Brown of the University of California at Berkeley and Timothy Sturgeon of the Massachusetts Institute of Technology. The survey used a business function list very similar to the European Survey. It split the European category of "Marketing, sales and after sales services including help desks and call centers" into two, "customer and after-sales service" and "sales and marketing," and specified facilities maintenance as a distinct business function instead of including it in the residual "other business functions" category (see third column of Table 2). Like the Canadian list, the business function list used in the NOS can be compared to the European list.

The NOS introduced two successful innovations worth noting here: 1) it collected quantitative informative about the percentage of sourcing costs for each business function (in-house costs, costs from domestic outsourcing, costs from foreign affiliates, and costs from foreign suppliers), and 2) collected four annual wage ranges by business function (<$40k, $40-60k, $60-90k, and >$90k).

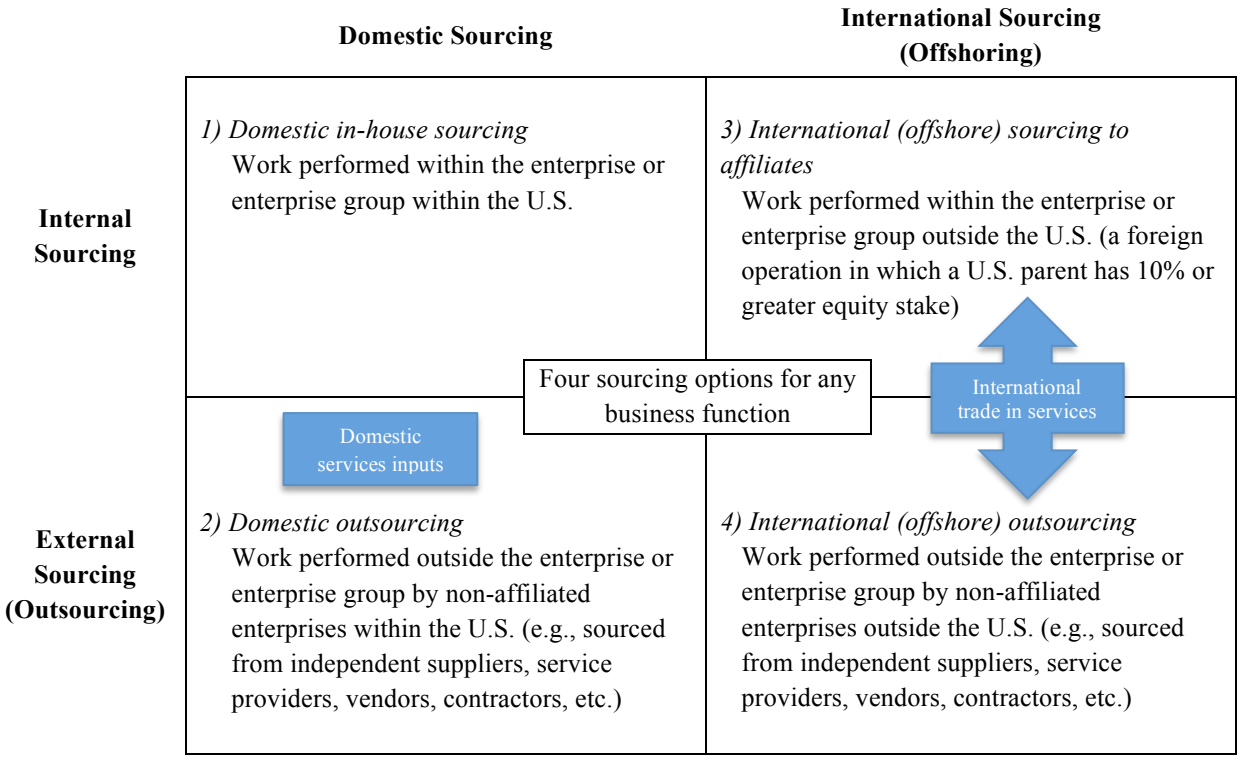
Implementing Business Functions in Business Surveys – Some Results

While business function statistics can be used to inform a wide variety of research and policy questions, business function surveys have mainly been used to examine firm-level patterns of domestic and international sourcing. International sourcing surveys using a business function framework have been able to answer basic yet important policy-relevant questions such as: What are the main business functions that are internationally sourced, and where are they sourced? Are enterprises mainly internationally sourcing low value-added functions such as manufacturing and back-office work or are strategic, high value functions such as R&D also being internationally sourced? How do enterprises that internationally source various business functions perform relative to enterprises that do not? Does the type of function or source country make a difference? Do countries tend to play specific roles in global value chains (GVCs) by specializing in specific sets of business functions (e.g., R&D vs. production)?

As the two right quadrants of Figure 1 show, when business function surveys collect information about international sourcing, they are essentially collecting information about international trade in

services. When the collect information about domestic outsourcing, they essentially collect information about domestically sourced services inputs to the enterprise.

Figure 1. Four Sourcing Options for Business Functions

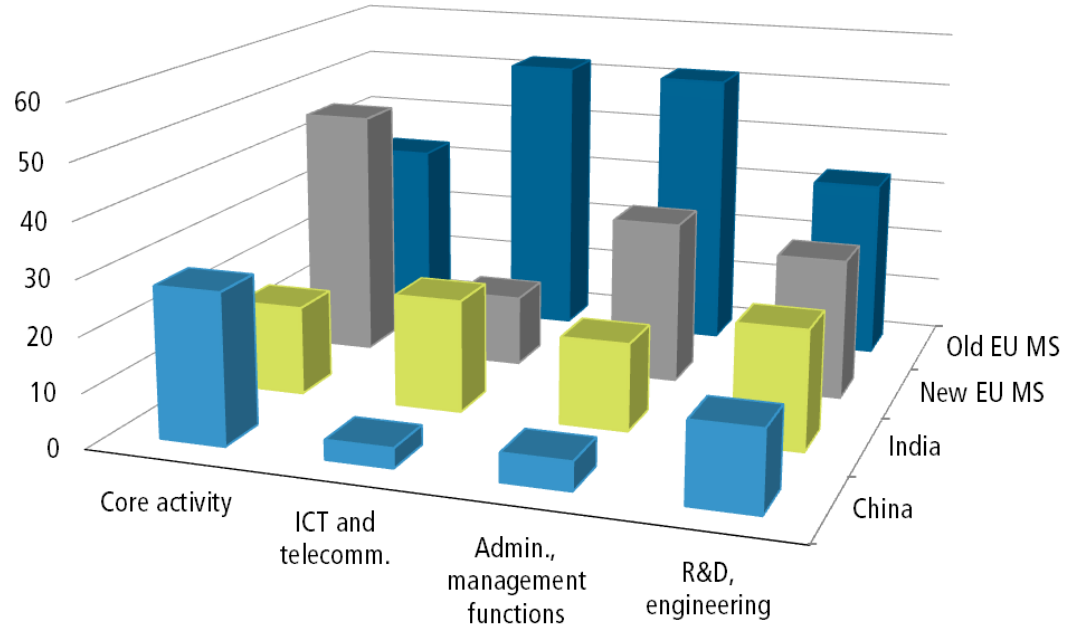


As shown in Figure 2, different business functions show different international sourcing patterns. In the 2012 EU survey, Danish enterprises were most likely to source some or all of their core business function from new EU member states and China, while administrative and management support functions were more likely to be sourced from old EU member states.

In the US survey, international sourcing of business functions by US companies was found to be widespread, and even more common in large goods producing enterprises. Economy-wide, more than 16% of full time workers were employed at organizations that engaged in international sourcing of the primary business function, with slightly higher figures for R&D, sales and marketing, transportation, after sales service, and IT services (see Table 3). However, when viewed as a share of *costs* for each function, the data show that, on average, US enterprises spending on international sourcing to be quite low, relative to domestic outsourcing and in-house sourcing. When US organizations' international sourcing was mostly from foreign affiliates. These data reinforce the impression that GVCs are being still being driven, in large measure, by large goods producing multinational enterprises.

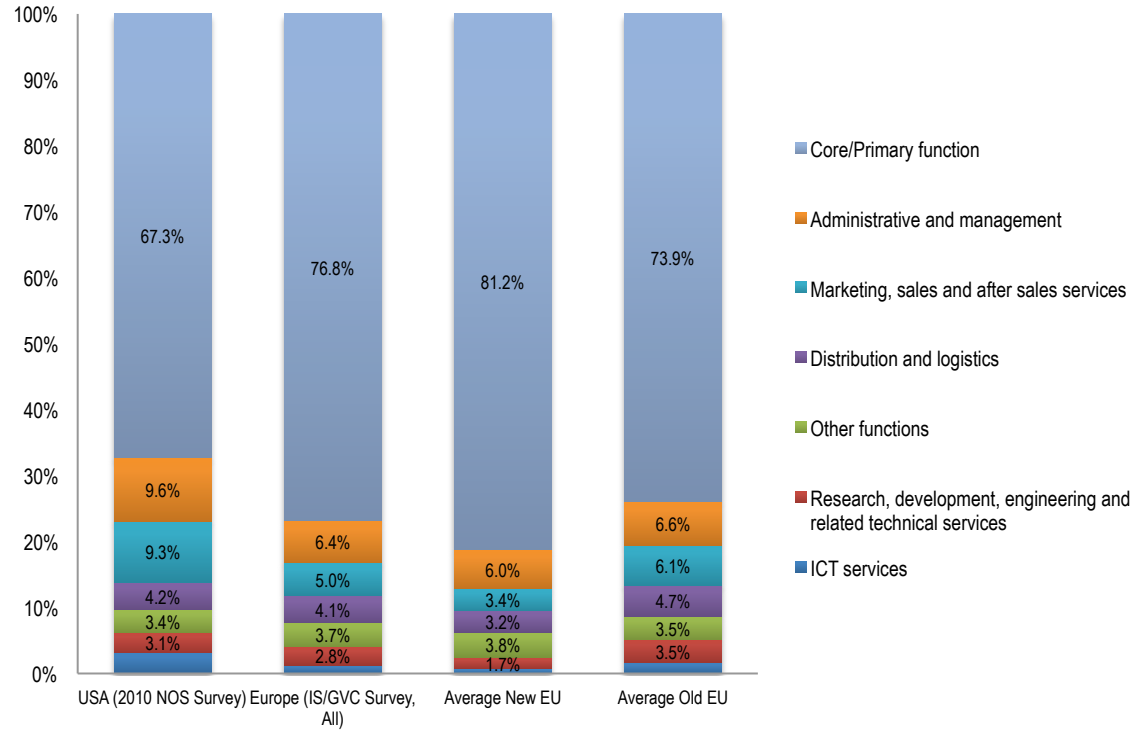
Both the NOS and the 2012 European Survey successfully collected the share of in-house employment by business function - and with similar results, cf. Figure 5.

Figure 2. Source Location Shares of Danish Enterprises Sourcing Internationally, 2009-2011; Selected Functions and Destinations



Source: Statistics Denmark: Survey on International Organisation and Sourcing of Business Functions 2012

Figure 5. Employment by Business Function, Comparison of 2010 NOS with Eurostat 2012 International Organisation and Sourcing of Business Function Survey



Source: Brown *et al*, 2013

Table 3. Frequency of Sourcing Practices* and Distribution of Sourcing Costs for U.S. Organizations

Business Function	Domestic In House	Domestic External	Intl. Affiliate	Intl. External	Intl. Sourcing**	N
Primary Business Function …% orgs engaging in practice*	100.0%	18.4%	13.8%	8.0%	16.4%	317
…share of costs for function	93.3%	3.0%	2.9%	0.8%	3.7%	
Research and Development …% orgs engaging in practice*	99.2%	19.7%	16.9%	5.1%	19.2%	190
…share of costs for function	91.8%	3.4%	3.9%	0.9%	4.8%	
Sales and Marketing …% orgs engaging in practice*	99.5%	22.0%	17.3%	6.0%	19.2%	222
…share of costs for function	91.5%	4.2%	4.0%	0.3%	4.3%	
Transportation Services …% orgs engaging in practice*	98.1%	30.2%	15.0%	8.8%	18.6%	210
…share of costs for function	82.6%	12.6%	3.2%	1.7%	4.8%	
Customer & After-sales Service …% orgs engaging in practice*	100.0%	12.4%	15.2%	5.4%	17.5%	220
…share of costs for function	92.9%	2.3%	4.2%	0.6%	4.8%	
Mgmt, Admin, and Back-office …% orgs engaging in practice*	99.7%	13.8%	13.3%	3.9%	14.5%	292
…share of costs for function	94.9%	1.8%	3.0%	0.4%	3.4%	
Information Technology Systems …% orgs engaging in practice*	96.2%	33.9%	12.2%	9.3%	17.6%	253
…share of costs for function	83.2%	12.4%	3.1%	1.4%	4.5%	
Facilities Maintenance …% orgs engaging in practice*	93.5%	34.1%	12.5%	4.5%	13.3%	243
…share of costs for function	81.6%	14.5%	3.4%	0.5%	3.9%	

*These statistics exclude observations from organizations that do not have costs in the particular business function in question. Thus, the statistics represent the share of full-time domestic U.S. employees working at organizations that engage in external sourcing *and* have costs in the business function in question.

**The international sourcing column indicates organizations that engage in internal (from affiliates), external (from external suppliers) international sourcing, or both.
Source: National Organizations Survey, Brown et al, 2013

Because of this work, the business function concept has now been proven effective in several contexts. The results are unambiguous. Questions about business functions are well understood by enterprise managers and the results from surveys have begun to provide useful insights into important policy questions. For the first time, the extent and character of outsourcing and offshoring can be known for entire enterprise populations, and the relationships between international sourcing and employment and wages have begun to be explored using direct firm-level evidence. For findings regarding employment see Nielsen and Luppes (2012) and Brown et al (2013).

A Proposed List of Business Functions Tied to Existing Services Classifications[3]

So far, the items on business function lists have been mainly conceptual in nature, following Porter (1985). For the purposes of statistical surveys, however, business functions can be defined in terms of international classifications in the Central Product Classification (CPC)[4] and for services only the Extended Balance of Payments Services classification (EBOPS). Business functions can also be linked to activity (industry) codes such as NACE, ISIC, and NAICS since any business function can be the main output of an enterprise (for example for enterprises that provide manufacturing services, R&D and engineering services, customer contact services, etc., for other firms). Our concern, therefore, is mainly in using existing services product classifications to define support functions. Nielsen (2008) compiled a preliminary correspondence between the business function list used in the 2007 EU survey and various items in CPC 2.0 (see Annex Table 7). In the revised list presented here, business functions and residual categories are for the first time fully defined in terms of EBOPS and CPC, with a correspondence also provided for ISIC.

The method for linking support business functions to official services classifications is as follows. First, the list of 69 services in EBOPS 2010, the main classification used to collect and report data on international trade in services, was reviewed for suitability as a definitions for support business functions and found to be to coarse to be fully useful. Among several problems prohibiting EBOPS 2010 products to assigned to business functions, the heterogeneity within EBOPS 10.3.5, "other business services." This category corresponds with 36 CPC codes as different as gas and water distribution (CPC 6912 and 692), on the one hand, and credit reporting and specialized office support services on the other (CPC 8591 and 8595). Because of this, the EBOPS 2010 correspondence to CPC 2.0, containing 244 services products, was used to provide additional detail.[5]

If the EBOPS 2010 classification is too coarse, the corresponding CPC classification (with 244 services products) is too granular to be used by itself to define a list of business functions without further aggregation. The CPC list was thus divided into one of three categories, according to the type of delivery, as follows: Type 1 services (*services that can be delivered remotely*); Type 2 services: "Transport services" that mainly involve the *manipulation or transport of physical objects, material, and electricity;* and Type 3 services: "On-site or personal services" that mainly require *on-site or personal delivery*. These definitions are summarized in Table 4

Of the 244 CPC codes that correspond with EBOPS 2010, 97 have been identified as being potentially ICT-enabled, 57 as belonging to a broad category of transport and travel services, and 79 were identified as on-site or in-personal services.

Next, the CPC products within each of the three subdivisions were grouped logically (but subjectively) by the authors, with the aim of creating a concise and intuitively logical taxonomy of business functions tied to existing classifications of services. This exercise yielded 21 logical groupings according to the three types of delivery summarized in Table 4: 1) Potentially ICT-enabled

[3] Note: This section draws on the draft report, "A Proposal for Indicators for International Trade in ICT Services and ICT-enabled Services," prepared by Timothy J. Sturgeon as an input to the Partnership and its Task Group on Measuring Trade in ICT services and ICT-enabled services, September 22, 2014

[4] In Europe: Classification of Products by Activity (CPA)

[5] See Manual on Statistics of International Trade in Services (MSITS 2010), UN Statistical Division, "Correspondence between the EBOPS 2010 and the Central Product Classification (CPC, version 2)," http://unstats.un.org/unsd/tradeserv/tfsits/msits2010/ebops2cpc_detailed.htm#ebops4

services (nine categories); 2) Transport and travel services (three categories); and 3) On-site or personal services (nine categories).

Table 4. Services by Type of Delivery

	Type of Delivery	Description	Possibly ICT-enabled? (can be delivered remotely)
Delivery Type 1	ICT-enabled services	Services that can be delivered remotely. Includes ICT Services (network communications services, IT services, and software services) as well as any other service than can be delivered remotely.	Yes
Delivery Type 2	Transport services	Services that involve the transport of physical objects, material, and electricity.	No
Delivery Type 3	On-site or personal services	Services that require on-site or personal delivery.	No

Source: UNCTAD, 2014

The result is the tentatively named Services by Type of Delivery (S-TOD) Complementary Grouping. Because the S-TOD Complementary Grouping is developed through examination of the corresponding definitions in EBOPS 2010 and CPC 2.0, no additional definitions are provided here. An officially sanctioned complementary grouping, if one were to be developed, would require a consolidated set of definitions. A full correspondence of the S-TOD Complementary Grouping to EBOPS 2010, CPC 2.0, and ISIC Rev. 4 is provided in Annex Table 8.

The final step in creating the list of business functions was to test the S-TOD Complementary Grouping according to the likelihood or possibility that enterprises would provide the service internally. As mentioned earlier, because large-scale network and public infrastructure-related services are rarely, if ever, produced internally by enterprises, they are not characterized as business functions. Large scale or municipal services such as telecommunications or sewerage services are generally excluded from business function lists. Using this logic, we are able to exclude the following S-TOD categories:

- 1.1 Communications
- 1.5 Information services
- 2.1 transport industry services
- 2.3 passenger services
- All of S-TOD 3 (on-site and personal services) except 3.7 maintenance and repair services.

S-TOD 3.8 manufacturing services will usually represent outsourcing of the core function of manufacturing enterprises and is thus not included in the list of support business functions

Table 5. Services by Type of Delivery (S-TOD) Complementary Grouping

Support business function?	Recommended Services Product Categories by Type of Delivery (S-TOD)	# of EBOPS 2010 codes	# of CPC 2.0 codes	# of ISIC Rev.4 codes
	Type 1) Potentially ICT-enabled services	**34**	**97**	**56**
	1.1) ICT services – Communications	1	3	2
Yes	1.2) ICT services – Software	1	4	1
Yes	1.3) ICT services - IT services	1	6	4
Yes	1.4) Sales and marketing services, not including trade and leasing services	3	5	5
	1.5) Information services	4	12	10
Yes	1.6) Management, administration, and back office services	17	45	26
Yes	1.7) Engineering and related technical services	7	16	7
Yes	1.8) Research and development (R&D) services	2	5	3
Yes	1.9) Education and training services	2	2	2
	Type 2) Transportation and travel services	**22**	**57**	**23**
	2.1) Transportation and travel services - transport industry services	7	17	8
Yes	2.2) Transportation and travel services - freight services	9	13	8
	2.3) Transportation and travel services - passenger services	9	26	8
	Type 3) In person and on-site services	**19**	**79**	**55**
	3.1) In person and on site services - trade and leasing services	4	18	7
	3.2) In person and on site services - utilities and infrastructure-related services	2	9	4
	3.3) In person and on-site services - agricultural, forestry, fishing and mining services	1	3	3
	3.4) In person and on-site services - construction services	3	2	2
	3.5) In person and on-site services - health and social services	3	7	7
	3.6) In person and on-site services - in-person and recreational services	4	12	9
Yes	3.7) In person and on-site services - maintenance and repair services	4	19	15
	3.8) In person and on-site services - manufacturing services	1	4	3
	3.9) In person and on-site services - public and membership organization services	4	5	5

Source: UNCTAD, 2014

The concept of complementary groupings in trade in services classifications is specified in MSITS (2010, p. 79) as follows:

> 3.280. The Complementary groupings of service and non-service transactions
> For various analytical purposes, compilers may wish to aggregate a number of service transactions (and non-service transactions) so as to provide information on areas of particular interest or concern to users. These may relate to health care, environmental activities or audio-visual or software activities. As is the case for the components described above, it would be useful for compilers to follow the same guidelines for producing these complementary aggregations. Compiling economies which are willing to further disaggregate some of the complementary groupings (e.g. call-center services), are encouraged to do so on a basis compatible with CPC, Version 2.0. For each complementary grouping a list of services (or goods) items is provided which indicates under which item the transactions sought are most likely classified. This does not necessarily mean that the entire service item should be included under the complementary grouping, or that other relevant transactions may not be covered under other items.

Based on this concept, it is proposed that the list of services by type of delivery in Table 5 comprise a complementary grouping based on correspondences to EBOPS 2010 and, where more detail is needed, CPC 2.0. The proposed business function list represents a sub-set of S-TOD, as summarized in Table 6.

Table 6. Proposed Business Function List with S-TOD Correspondences and Number of Codes in EBOPS 2010, CPC 2.0, and ISIC Rev. 4 Correspondences

Proposed Business Function List (grey different from 2012 Eurostat IS/GVC survey)	S-TOD correspondence	# of EBOPS 2010 codes	# of CPC 2.0 codes	# of ISIC Rev.4 codes
1. Core business functions 1.1 Production of goods (for the market) 1.2 Provision of services (for the market)	Not applicable			
Support business functions (business services)				
2. Transport, logistics, and distribution support functions	S-TOD 2.2	9	13	8
3. Marketing, sales, after sales service support function	S-TOD 1.4	3	5	5
4. IT services and software support functions *Note: telecommunications no longer included*	S-TOD 1.2 and 1.3	2	10	5
4.1 IT Services	1.2	1	4	1
4.2 Software services	1.3	1	6	4
5. Management, administration, and back-office support functions	S-TOD 1.6	17	45	26
6. R&D, Engineering and related technical services and R&D support functions	S-TOD 1.7 and 1.8	9	21	10
6.1 Research and development services (R&D)	1.8	2	5	3
6.2 Engineering and related technical services (except R&D)	1.7	7	16	7
7. Other business functions (all other services)	S-TOD 1.1, 1.5, 2.1, 2.3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.8, and 3.9	43	118	71
7.1 Maintenance and repair services	3.7	4	19	15
7.2. Education and training	1.9	2	2	2
7.3 Other business functions (respondent provided)				
Total for support business functions	9 S-TOD categories	46	115	71

Note: for full correspondence see Annex Table 8

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Annex Tables

Annex Table 7. Correspondence of Business Function List in the 2007 EU International Sourcing Survey to CPC 2.0

1. Core business function

This function is the primary activity of the enterprise and will in most cases equate with the main activity of the enterprise. It includes production of final goods or services intended for the market/for third parties carried out by the enterprise and yielding income. The core business function equals in most cases the primary activity of the enterprise. It may also include other (secondary) activities if the enterprise considers these to comprise part of their core functions.

88 Manufacturing services on physical inputs owned by others
854 Packaging services
87 Maintenance, repair and installation (except construction) services
89 Other manufacturing services; publishing, printing and reproduction services; materials recovery services

2. Support business functions

Support business functions (ancillary activities) are carried out in order to permit or facilitate production of goods or services intended for the market or third parties by the enterprise. The outputs of the support business functions are not themselves intended directly for the market or third parties. The support business functions are in the survey divided into:

Distribution and logistics

This support function consists of transportation activities, warehousing and order processing functions.

61 Wholesale trade services
62 Retail trade services
65 Freight transport services
671 Cargo handling services
672 Storage and warehousing services
6791 Freight transport agency services and other freight transport services
68 Postal and courier services

Marketing, sales and after sales services including help desks and call centers

This support function consists of market research, advertising, direct marketing services (telemarketing), exhibitions, fairs and other marketing or sales services. Also including call-centre services and after sales services such as help-desks and other customer supports services.

83114 Marketing management consulting services
836 Advertising services and provision of advertising space or time
837 Market research and public opinion polling services
83812 Advertising and related photography services
85931 Telephone call centre services
85962 Trade show assistance and organization services

ICT services

This support function includes IT-services and telecommunication. IT services consist of hardware and software consultancy, customized software data processing and database services, maintenance and repair, web-hosting, other computer related and information services. Packaged software and hardware are excluded.

8313 Information technology (IT) consulting and support services
8314 Information technology (IT) design and development services
8315 Hosting and information technology (IT) infrastructure provisioning services
8316 IT infrastructure and network management services
841 Telephony and other telecommunications services
842 Internet telecommunications services

Administrative and management functions

This support function includes legal services, accounting, book-keeping and auditing, business management and consultancy, HR management (e.g. training and education, staff recruitment, provision of temporary personnel, payroll management, health and medical services), corporate financial and insurance services. Procurement functions are included as well.

82 Legal and accounting services
8311 Management consulting and management services (excl 83114)
8312 Business consulting services
8319 Other management services, except construction project management services
8592 Collection agency services
8594 Combined office administrative services
8595 Specialized office support services

Engineering and related technical services

This support function includes engineering and related technical consultancy, technical testing, analysis and certification. Design services are included as well.

833 Engineering services
8391 Specialty design services

Research & Development

This support function includes intramural research and experimental development.

81 Research and development services