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## **Statistical Manual on the Classification of Business Functions**

Prepared by the Technical Subgroup on the Classification of Business Functions

Statistical Manual on the  
Classification of  
Business Functions  
(CBF)

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# 1. Introduction

## 1.1 Introduction to the classification of business functions (CBF)

1. Economic policymaking requires high-quality statistics on how and where enterprises<sup>1</sup> are sourcing specific business functions<sup>2</sup>. This new demand stems from the mainstreaming of domestic and international sourcing<sup>3</sup> strategies by enterprises across size, industry classifications, and economic territory. It cannot be assumed that enterprises will carry out all or even most business functions entirely within their organizations and within their domestic economy. Furthermore, organizational and geographic fragmentation in global value chains<sup>4</sup> (GVCs) is evident in enterprises' main revenue-producing activity and across various supporting or ancillary business activities such as R&D, ICT services, customer support, and different management and administrative activities. A measurement framework based on business functions is required to capture enterprise-level information on these arrangements.

2. The classification of business functions (CBF) is intended for use in the production of business statistics, building on experiences from several recent surveys in Europe, Canada, the United States, and India. The primary use of business function statistics is to examine the details of international sourcing. However, it could also be applied to domestic sourcing.

3. International sourcing statistics can help statisticians and policymakers measure and monitor organizational and spatial patterns in national, regional, and global value chains and allow the effects of these patterns — on employment, wages, innovation, skills, firm survival, and turnover — to be measured. In domestic sourcing, classifying business functions helps analyze dynamics of business functions specialization. The CBF is applicable for both developed and developing countries to measure the impact of both domestic and international sourcing in their national economies. However, in practice, its implementation has focused more on international sourcing rather than domestic sourcing.

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<sup>1</sup> An enterprise may be a corporation, a quasi-corporation, a non-profit institution or an unincorporated enterprise ([SNA 2008](#)).

<sup>2</sup> A business function is a grouping of common tasks that enterprises must carry out on a regular basis, either internally or externally, in order to bring goods or services to market.

<sup>3</sup> Total or partial movement of business functions by an enterprise to another enterprise, either within the domestic market or across borders

<sup>4</sup> The sequence of all functional activities required in the process of value creation involving more than one country.

## 1.2 Historical background

4. In 2011, UNSD brought to the UN Expert Group on International Statistical Classifications the proposal to develop an international classification of business functions based on the experiences of selected countries and Eurostat in the measurement of the phenomenon of international sourcing.

5. At its meeting in May 2011 in New York, the UN Expert Group on International Statistical Classifications agreed that guidance for identifying core business functions and support functions in relation to their international sourcing should be developed. It recognized that global sourcing has high policy relevance, and further work was needed to improve its measurement by developing a common framework and guidelines. Therefore, the Expert Group suggested creating a subgroup to discuss the need for a standard classification of business functions to replicate and compare the results of such studies internationally. Such classification would go beyond the traditional product or activity breakdown (CPC or ISIC) and provide more relevant categories to study how companies structure their operations. It was recognized that such classification would be essential in the measurement of outsourcing<sup>5</sup> and the distribution of work in Global Value Chains (GVCs) and relating business functions to international trade flows.

6. At its 43rd session in February 2012, the Statistical Commission concurred with the decisions of the Expert Group described in the previous paragraph. Based on this decision, a Technical subgroup on the Classification of Business Functions (TSG-CBF) was created in 2012. Additionally, experimental work was carried out in Europe, Canada, and the United States to develop and test a Classification of Business Functions. In particular, Eurostat took the lead in building and testing the Classification of Business Functions in EU countries through the International Sourcing/Global Value Chains Survey. Based on the experience of Eurostat, a draft Classification of Business Functions was developed. Furthermore, the terms of reference of the TSG-CBF were updated in October 2020 in light of the work carried out since 2012.

7. The technical subgroup on the Classification of Business Functions met in November 2020 to review the draft Classification of Business Functions. The technical subgroup agreed that there is a need to elevate the classification of business functions at the level of an international statistical classification in order to harmonize efforts in measuring sourcing.

8. The current draft Manual on the classification of Business Functions reflects the comments by the Technical subgroup and was prepared for Global Consultation in order to

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<sup>5</sup> Total or partial movement of business functions by an enterprise to another enterprise outside of the enterprise group.

seek the endorsement of the UN Committee of Experts on International Statistical Classification and the United Nations Statistical Commission in 2022.

### **1.3 Structure of the manual**

9. The Manual is organized as follows. Section 1 is the introduction, and section 2 covers the underlying principles of the Classification of Business Functions. The concept of business functions and the use of business functions in statistical surveys are described in section 3. A critical distinction between core and support functions is made, and a few of the policy issues addressed by international sourcing statistics are identified. Prior uses of classifications of business functions in statistical surveys will also be examined. Section 4 described the classification of business functions, which comprises three levels of business functions disaggregation. Finally, section 5 includes the concluding comments and the way forward. Appendices, provided in separate excel files, provide draft correspondence between the proposed classification of business functions and the Statistical Classification of Products by Activity (CPA), International Standard Classification of Occupations (ISCO), Statistical Classification of Economic Activities in the European Community (NACE), International Standard Industrial Classification (ISIC) and Central Product Classification (CPC).

## **2. The underlying principles of the classification**

### **2.1 Purpose and nature of the classification.**

10. The primary use of the classification is as a tool for statistical analysis. It aims to show how enterprises organize their production and supporting functions and, in particular, it helps to understand globalization and global value chains when international sourcing occurs, and domestic value chains when domestic sourcing occurs. Adopting an international classification for business functions ensures international comparability of statistics on domestic and international sourcing and global value chain statistics. Enterprises most commonly engage in international sourcing and participate in global value chains to reduce labor and other costs, access new markets and specialized knowledge or technologies, or focus on core business. On the other hand, barriers to these international sourcing and GVC activities are often related to legal or administrative barriers, taxation issues, trade barriers and tariffs, lack of qualified labor in the domestic market, and financial constraints.

### **2.2 Scope of the classification**

11. Business functions can be thought of as a set of tasks that enterprises must carry out regularly, either internally or externally, to bring goods or services to the market. Examples of such tasks are management, R&D, information technology, marketing and sales, and transportation. Thus, the scope of the CBF covers all these tasks and aims to categorize them

into the broader term of business functions. Business functions are typically differentiated from business processes, which refer to work organized temporarily to achieve a specific goal.

### **2.3 Statistical units, observational units, and population**

12. The statistical unit of the classification is restricted to the enterprises as defined in the [SNA 2008](#). The population covers only the market-producing enterprises, as only those enterprises can have a core business function (defined as the production of goods or services for the market).

13. An enterprise is an institutional unit in its capacity as a producer of goods and services. An enterprise is an economic transactor with autonomy in respect of financial and investment decision-making, as well as authority and responsibility for allocating resources for the production of goods and services (para 77, ISIC rev.4). The EU definition of the enterprise is in line with the definition in ISIC Rev. 4.<sup>6</sup>

14. The enterprise is a statistical construct and not a legal form. Thus, it cannot be used to observe data. Consequently, the observational unit for the CBF is the legal unit (LeU). However, in many cases, the enterprise statistical unit often consists of only one LeU, in which case the enterprise can be surveyed directly.

### **2.4 Differences from other types of classification**

15. CBF is a classification according to kind of business functions and not a classification of goods and services (e.g., CPC) or activities (e.g., ISIC). A unit can have multiple business functions carried out at the same time. CBF aims to group similar tasks to form broader classes of business functions.

16. Generally, it is impossible to establish a one-to-one correspondence between business functions and activities or business functions and products, and CBF is not designed to measure product data at any detailed level. However, a general correspondence between business functions and activities or products can be created, which would make it easier to identify business functions (correspondence tables to ISCO-08, ISIC Rev. 4 and CPC Ver. 2.1 are under development and will be provided as an annex when they are available).

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<sup>6</sup> The EU defines the enterprise as “the smallest combination of legal units that is an organizational unit producing goods or services, which benefits from a certain degree of autonomy in decision-making, especially for allocating its current resources. An enterprise carries out one or more activities at one or more locations. An enterprise may be a sole legal unit.” See EU Council Regulation (EEC) No 696/1993 of 15 March 1993 on the statistical units for the observation and analysis of the production system in the Community.

## 2.5 Implementation plan

17. After its adoption at the international level, the implementation of CBF will require several coordinated activities to support countries in its gradual use for both national purposes and global reporting. The plan includes four main components: (i) an information campaign to sensitize countries to the existence of the classification and its benefits; (ii) the development of methodological tools to guide data producers and users; (iii) technical assistance programs targeting national data producers; and (iv) the establishment of an appropriate organizational and institutional framework at the international level to foster the implementation of CBF. In addition, the implementation of the plan will require additional resources whose availability will determine the pace of completion.

## 3. The concept of business functions and their use in statistical surveys

18. The concept of business functions is well known in the field of management. It can be traced to the early work of Michael Porter (1985), who identified a list of nine “activities” in a generic “value chain”. Five “primary” activities follow a rough value-added sequence (inbound logistics, operations, outbound logistics, marketing and sales, and service), while four “support” activities serve the entire organization (firm infrastructure, human resources, technology development, and procurement). Individual functions can be further subdivided into sub-functions.<sup>7</sup>

19. In his generic model, Porter clearly included activities relevant to a manufacturing enterprise. Still, the concept was meant to be flexible, with strategic managers using categories based on the actual functions carried out within their organizations. However, the importance of Porter’s model is not in the specific list of activities (or business functions) it provides, but in the influence of his work and the work of his many followers among enterprise managers, who were encouraged to undertake a careful analysis of their organizations according to specific functions within its value chain. The idea was to divide the activities of the enterprise into “physically and technologically distinct categories.”<sup>8</sup> While the division and sub-division of activities could be carried out *ad infinitum*, managers were instructed to identify activities that have 1) different economics (e.g., scale or transport requirements), 2) have a high potential

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<sup>7</sup> Note that in Porter’s framework, an “activity” does not refer to the industry of the enterprise as is the case in European business statistics, but a more or less coherent set of tasks organized for an identifiable purpose, referred to in this manual as a “business function.”

<sup>8</sup> These categories were expected to vary according to the enterprise’s “history, its strategy, its approach to implementing strategy, and the underlying economic of the activities themselves.” (Porter, 1988, p. 33)



impact of differentiation (e.g., could provide a competitive advantage over rivals), or 3) represent a significant or growing proportion of costs.

20. Once identified, business functions could be measured and evaluated in quantitative terms (most basically in terms of costs and profit margins for each), and decisions could be taken regarding external or internal sourcing<sup>9</sup>. At a time when leading industries such as computers were shifting from a “vertical” organizational structure, where firms performed most functions in house, to a “horizontal” structure where firms specialized in specific functions based on an identified “core competence” (Grove, 1996; Prahalad and Hamel, 1997), Porter’s concepts provided a method for analyzing the enterprise in advance of making critical decisions about which functions to outsource and which functions to keep in-house. When costs or market access were important, offshoring<sup>10</sup> was a favored strategy, mainly to large market countries with low operating costs, such as China and other countries in East Asia (Gereffi, 1994; Baldwin, 2011).

21. In this way, it became more common for managers to conceive of, evaluate, and monitor their organizations in terms of a parsimonious list of functionally distinct business functions (e.g., manufacturing vs. transport vs. administration), strategically important (e.g., R&D, product design, and marketing), and costly (e.g., manufacturing and IT services). Of course, a Porter-esque value chain analysis also allowed managers to identify strategically unimportant functions and thus top candidates for outsourcing and offshoring.

22. The influence of Michael Porter’s ideas on enterprise managers is difficult to overstate,<sup>11</sup> and here lies an opportunity for economic statistics: to collect innovative business statistics by leveraging enterprise managers’ manner of thinking about — and often measuring — tasks within their organizations. However, not all managers have internalized the concept of business functions concerning their businesses. As business function surveys shift from an experimental status, where surveys sought out responses from higher-level managers for their ‘best estimates’ of enterprise characteristics according to business functions, to a more standard survey which might be received and completed by accounting departments on a routine basis, familiarity with the concept cannot be assumed. The classification of business

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<sup>9</sup> Internal sourcing (insourcing) refers to sourcing within the enterprise or enterprise group, while external sourcing refers to sourcing outside the enterprise or enterprise group (outsourcing). See Figure 1 for a detailed overview and Glossary for more information on the definition.

<sup>10</sup> Similar to international sourcing. It historically refers to international outsourcing for cost-cutting reasons.

<sup>11</sup> As of February 4, 2019, Michael Porter had 421,937 citations on Google Scholar. The 1985 book, *Competitive Advantage: Creating and Sustaining Superior Performance*, in which the concept of business functions was introduced, has been published in thirteen languages in thirty reprintings over eleven editions and garnered 94,832 citations. Complementary influencers have also been important. For example, the 1997 article by CK Prahalad and Gary Hamel entitled “The Core Competence of the Corporation” garnered 34,217 citations.

functions will support the adaptation of current approaches to designing business surveys to seek responses through regular data collections.

### **3.1 Adapting the concept of business functions for use in statistical surveys**

23. The concept of business functions is relatively new to the statistical toolbox. Business functions offer statisticians and survey respondents a limited yet relatively comprehensive set of generic, easy-to-understand categories that describe the various functions carried out by enterprises, including and in addition to their main economic activity. Business function statistics are needed because enterprises, in addition to producing the goods or services from which they earn their turnover, typically require a set of functions to support their core revenue-producing function. Since support functions are defined separately from the main industry classification, they can be expressed as a generic list. Therefore, business functions are identifiable parts of business statistics.

24. Although business functions have commonalities with existing concepts in economic statistics such as occupations, industries/activities, or products, it differs in many ways. From a conceptual point of view, a business functions is defined as **a grouping of common tasks that enterprises must carry out regularly, either internally or externally, to bring goods or services to the market**, such as administration and management R&D and marketing and sales. Business functions are typically differentiated from business processes, which refer to work organized temporarily to achieve a specific goal. As such, business functions are relatively stable in an organization, while business processes last only until the goal is met.

25. Business functions can be thought of as the ‘occupations of enterprises’. They can be associated with specific industries/activities, occupations, and products in a general way but are not reducible to them. The classification of business functions is therefore not a complementary grouping within any other classification. It is based on a novel concept in business management. Nonetheless, correspondence tables (concordances) to other classifications, such as ISIC, ISCO, and CPC, help to improve the analytical uses of the classification on business functions. With the linkage of business functions to business activities, products, or jobs, the classification of business functions can be used not only in international sourcing surveys but also in other types of business surveys.

### **3.2 Using the Classification of Business Functions to define patterns of industrial organization and sourcing location**

26. The main motivation for the Classification of Business Functions<sup>12</sup> stems from the need to measure domestic and international sourcing in a consistent and internationally comparable manner. The sourcing strategies by enterprises are most often thought of in connection with

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<sup>12</sup> So far, the classification of business functions was mostly used in international sourcing surveys.

manufacturing and manufacturing services. Outsourcing and offshoring of labour-intensive parts of the manufacturing process was a long-standing practice in specific industries and countries, such as the semiconductor and television assembly in East Asia for the US market and apparel assembly in North Africa for European markets (Fröbel et al., 1980; Grunwald and Flamm, 1985). However, in the 1990s and 2000s, it became more common and generalized across more industries, such as telecommunications equipment, automobiles and automotive parts, and commercial aircraft parts (Sturgeon, 2002).

27. Some goods-producing enterprises partially maintained internal manufacturing while others became entirely factory-less (Bernard and Fort, 2013), sourcing all production externally. Thus, these manufacturers never pursued the strategy of in-house production. Consequently, ‘contract manufacturers’ such as Flextronics, Foxconn, and Pao Chen increased in number, size, and scope, creating an easy-to-access ‘global supply base’ that encouraged more companies to engage in the twin and often entwined strategies of outsourcing and offshoring (Sturgeon and Lester, 2004).

28. After 2001 outsourcing and offshoring became more common for support functions such as telephone marketing and customer contact services (often organized in ‘call centers’), software coding, and back-office functions such as payroll and document management, especially in India (Dossani and Kenny, 2003). The growing use and capabilities of ICT systems have accelerated both outsourcing and trade in such ICT-enabled services<sup>13</sup> (Welsum and Reif, 2009). Like the rise of contract manufacturers, specialized service providers such as Infosys and Wipro grew and eventually set up international operations to provide remote services. More recently, enterprises have been experimenting with fragmenting and relocating parts of the R&D process, even in the context of contemporaneous projects (Cantwell and Mudambi, 2005; Lewin et al., 2009; Frick, 2014). Most recently, with the rise of the ‘digital economy,’ the ease and reliability of remotely accessing knowledge intensive-services and setting up internationally distributed business systems are increasing with great rapidity (UNCTAD, 2017). In Europe, international sourcing trends remained strong, with manufacturing enterprises driving almost half of international sourcing cases. The main reasons enterprises engaged in international sourcing had been to cut costs, but more and more enterprises had been motivated to source internationally to focus on their core business (Eurostat, 2019).

29. The concept of “outsourcing” assumes a shift from internal to external sourcing. While this may have been common in the earlier rounds of externalization and internationalization, many younger firms now begin operations with heavy reliance on external and international sourcing for various business functions. This is why the term “outsourcing” is not used in this

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<sup>13</sup> ICT-enabled services are services products delivered remotely over ICT networks (as defined in “[International trade in ICT services and ICT-enabled services](#)”, UNCTAD).

Manual unless it specifically refers to the movement from internal to external sourcing. The terms used: “internal and external sourcing, and domestic and international sourcing”, are neutral regarding the original state of enterprise organization (vertically integrated or vertically specialized) and the direction of change in sourcing choices (internal or external).

30. Traditional business statistics have few tools for capturing or characterizing these new sourcing patterns and the enterprise configurations and business models that go with them, especially in an international context. New international input-output datasets, constructed by merging multiple national-level supply-use tables with international trade statistics, provide researchers and policymakers with further information on the various roles countries play in “global value chains,” such as export assemblers and exporters low or high-value intermediates.<sup>14</sup> There is a demand for statistical tools that can ‘look inside’ the enterprise to understand better how enterprises are linked to affiliated and non-affiliated suppliers both domestically and abroad. International sourcing surveys using a classification of business functions aim to meet this demand.

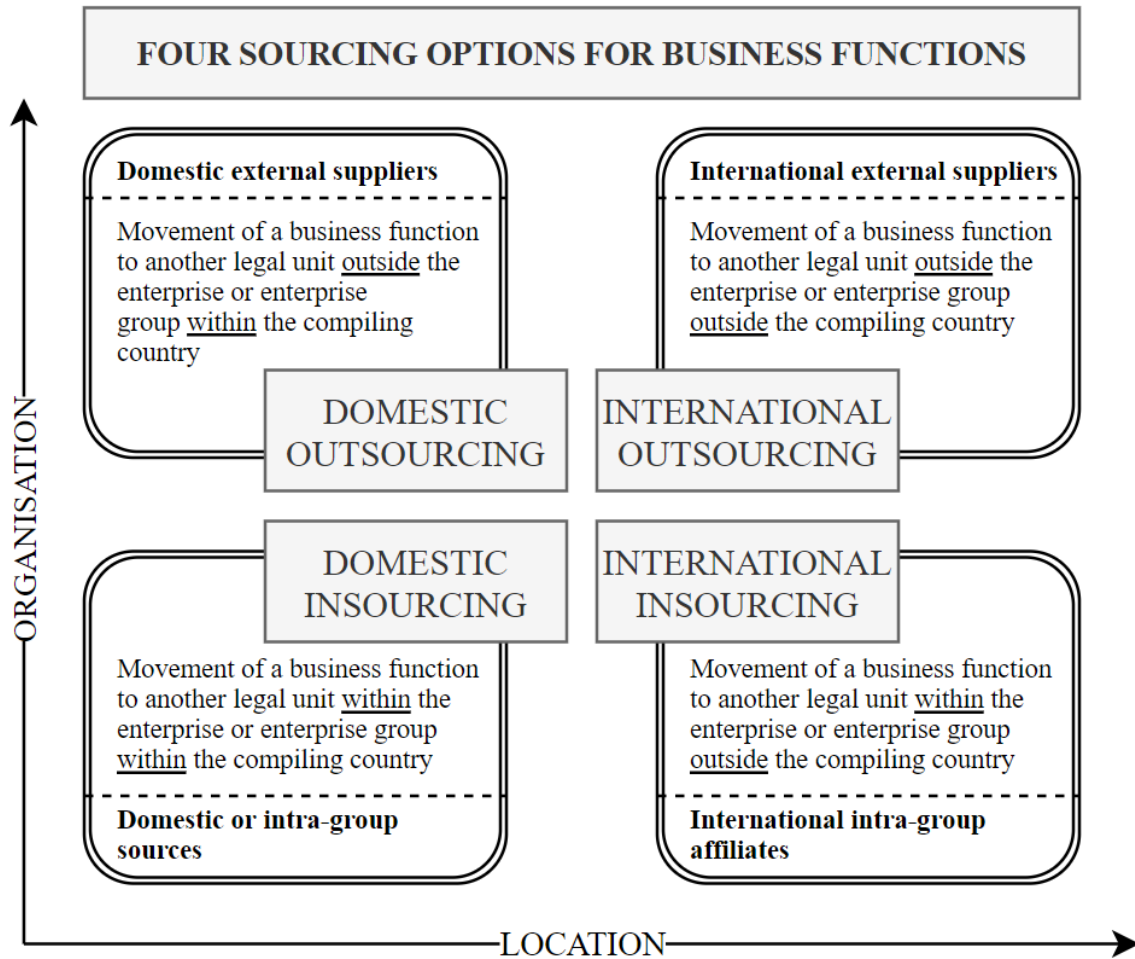
31. International sourcing surveys need to collect information on domestic and international sourcing. Domestic and international sourcing can be carried out within the enterprise or enterprise group<sup>15</sup> or by external suppliers. Thus, managers are presented with the four basic sourcing options shown in Figure 1: 1) internal domestic sourcing from within the enterprise or enterprise group, and 2) external domestic sourcing from independent (non-affiliate) suppliers; and two international options: 3) internal international sourcing from within the enterprise group (i.e., foreign affiliates), and 4) external international sourcing from independent suppliers.

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<sup>14</sup> Prominent examples of publicly-available IIOs include the World Input-Output Database (WIOD) Project, funded by the European Commission as part of the 7th Framework Programme; the OECD/WTO’s Trade in Value Added database; and Eurostat’s inter-country supply, use and input-output tables, called ‘Full international and global accounts for research in input-output analysis’ (FIGARO).

<sup>15</sup> An enterprise group is an association of enterprises bound together by legal and / or financial links ([Council Regulation 696/1993](#) and [EC, 2009](#)).

**Figure 1. Organization and location: four sourcing options**



Source: adapted from Nielsen, 2008, and Eurostat’s methodology for international sourcing surveys.

32. Figure 1 shows the sourcing options available for a single business function or the enterprise as a whole. In theory, the four options are possible for any business function, and enterprises can and do source various functions differently. Thus, domestic and international sourcing information can be captured in a single survey question by asking respondents to characterize the four options for a pre-determined list of business functions. This concept is shown as a generic survey question in Table 1.

**Table 1. Generic survey question on business function sourcing by organization and location**

Business functions:	Location:	Domestic sourcing		International sourcing	
	Organization:	Domestic insourcing	Domestic outsourcing	International insourcing	International outsourcing
	Function A				
	Function B				
	Function C				
	Function D				
Function...					

33. To help illustrate how this framework can help describe an enterprise’s sourcing practices, consider a hypothetical example of a firm that primarily manufactures automotive parts. It may produce some of those parts (its core business function) in-house in one or more of its domestic factories and also manufacture other parts internationally (offshore) in the factories of affiliated or non-affiliated companies in other countries. In addition, the firm might have in-house expenditures devoted to research and development and new product development, source transportation services from local trucking companies in each of its production locations, and internationally source a portion of its software design and coding work (included in the IT services function) from an external supplier located in yet another country.

34. While most survey research using the business function framework has focused on capturing such patterns of domestic and international sourcing, the classification of business functions can help classify and compare almost any enterprise characteristic, such as employment and wages, technology adoption, training, and skill requirements. In other words, business functions can provide an alternative method for comparing enterprise characteristics. For example, one could compare employees’ wages between business functions or job skill requirements to identify high skilled jobs (functions).

35. So far, business functions have mainly been used in international sourcing surveys carried out in developed countries, and the CBF was built on this experience. These surveys aimed to capture domestic and international sourcing patterns from the perspective of the enterprise that makes the sourcing decisions. At the same time, patterns of international sourcing that are flowing into the country from foreign markets may also be captured via a suitably designed domestic survey. In any case, since business functions are a perspective-neutral concept, they can be used to further enhance the international sourcing surveys with the aim of capturing the enterprises that are the recipients of international sourcing (e.g., call centers). This way, business functions used in international sourcing surveys can help indicate the pervasion of jobs sourced to the domestic country as well as changes in the intensity of international sourcing patterns.

### 3.3 Core vs. support business functions

36. As just discussed, enterprises can source their main activity internally or externally and domestically or internationally. More recently, similar options have emerged for a range of business services that typically support the main activity. It is useful to analyze these ‘core’ and ‘support’ functions separately, and most international sourcing surveys have made a clear distinction between ‘core’, ‘primary,’ or ‘main’ business functions and various ‘support’ functions. It is therefore essential that the differences between the two be made clear.

37. The core business function represents the revenue-producing activity of the enterprise. It will, in most cases, be consistent with the main activity of the enterprise as classified by the activity or industry code entered in the statistical 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., production of inputs). While enterprises do incur costs from carrying out core business functions, the outputs of these functions can also be directly associated with turnover.

38. An enterprise may have one or more core business functions.

39. Support business functions are carried out to permit or facilitate the production of goods or services. They do not directly generate turnover, only costs. However, the cost, efficiency, and quality of support functions, especially management, marketing, logistics, R&D, and other innovation-related activities, can make significant contributions to the competitiveness of enterprises. As an example, the definition of core and support functions, as used in prior European international sourcing surveys, is presented in Table 2.

40. The concept of support business functions is related to the concept of ancillary activities. As defined in the [SNA 2008](#), ancillary activity is incidental to the main activity of an enterprise. It facilitates the efficient running of the enterprise but does not typically result in goods and services that can be marketed.

**Table 2. Core and support business functions**

<p><b>Core business function:</b></p> <p>Activities of an enterprise yielding income: the production of final goods or services intended for the market or for third parties. Usually, the core business functions make up the principal activity of the enterprise, but they may also include other (secondary) activities if the enterprise considers these as part of its core functions.</p> <p><b>Support business function:</b></p> <p>Supporting activities carried out by the enterprise in order to permit or to facilitate the core business functions, its production activity. The outputs (results) of support business functions are not themselves intended directly for the market or for third parties.</p>
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Source: [https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Business\\_functions](https://ec.europa.eu/eurostat/statistics-explained/index.php/Glossary:Business_functions)

41. The critical point is that, while core functions may produce either goods or services, support functions consist mainly of services. Thus, measuring support functions is akin to measuring the internal and external provisions of business services. Classifications of business functions used in statistical surveys have generally excluded support services that require investments in large-scale shared infrastructure such as sewerage, roadways, and public telecommunications systems. However, such goods and services may comprise the core business function of an enterprise. They are therefore included in the classification of business functions.

42. Because the core business function can be either goods- or services-producing, the CBF is equally applicable to manufacturing or service enterprises. The benefit of this is that both types of enterprises can complete the same survey, and the results can be directly compared or aggregated as needed.

**Table 3. Core and support business functions comparison**

<b>Core business function</b>	<b>VS.</b>	<b>Support business function</b>
Outputs are directly linked with turnover (revenue-producing)		Outputs do not directly generate turnover, only costs
Goods and services produced are intended for the market		Goods and services produced are intended for internal use (not for the market)
Consistent with the main and secondary activities of the enterprise		Related to the concept of ancillary activities <sup>16</sup>

### 3.4 Analytical uses

43. Business function statistics can be used to inform a wide variety of research and policy questions. Still, surveys-to-date have focused on characterizing enterprise-level patterns of domestic and international sourcing. Surveys that used business functions have been able to answer basic, yet essential policy questions such as “What are the main business functions that are internationally sourced, and where are they sourced?”. Conversely, international sourcing surveys that also measure domestic sourcing can answer questions about the functional specialization of economies (e.g., innovation vs. production). For example, are enterprises mainly sourcing low value-added functions internationally, such as manufacturing and back-office work, or are strategic, high-value functions such as R&D also being internationally sourced? What are the trends? What are the effects on employment and wages? Do countries

<sup>16</sup> The 2008 SNA does not treat the research and development activity as an ancillary activity, however this Manual treats it as a supporting function.



in the global economy tend to play specific roles in global value chains by specializing in particular sets of business functions? How do these data compare to estimates arrived at by other means, such as international input-output datasets, industrial production censuses, and occupational employment statistics?

44. When linked to industrial performance measures and information about enterprise characteristics in business registers, a host of questions can be answered, such as “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? What is the impact of different business function sourcing choices on the employment and wages of specific workers?

45. Classifications of business functions, deployed in surveys across countries and over time, are already helping policymakers answer these questions and providing researchers with estimates that can be incorporated into econometric models that shed light on topics such as functional specialization in trade (e.g., Timmer et al., 2018).

## **4. Classification of business functions**

46. Surveys using classifications of business functions have been proven effective in several contexts and valuable new data has been collected (e.g., Eurostat, 2019). Questions about business functions are typically well understood by respondents (enterprise managers), and the results from surveys have begun to provide valuable insights into important policy questions. The extent and character of international sourcing practices in a certain period can be known for entire enterprise populations, with detail about sourcing by business function, the location of sourcing, and when linked to information in the business registers and other micro-data statistical registers, the relationship between international sourcing, enterprise characteristics, and jobs.

47. The distinction between core and support functions, as described in Table 2, was first introduced in the European Survey on International Sourcing in 2007 and has been used in most business function surveys since. Although the distinction between the core and support business functions can be made clear — as turnover-producing vs. cost-incurring functions — the concept has proven difficult to implement in some surveys. In a methodological review of the European 2017/2018 IS/GVC survey, it was found in some countries that a significant number of respondents had difficulty understanding the concept, especially in countries with many small enterprises. For example, in some countries, about 30% of the enterprises had problems providing information on employment by business function. These were mainly enterprises active in trade (retail/wholesale), logistics, and ICT. They either assigned all employees to the core business function or assigned them only to various support functions.

48. There are several possible reasons for this difficulty. First, a single function can be split between core and support, for example, when an enterprise sells software on the market and produces software for internal use. It is difficult for respondents to provide accurate answers in this sort of mixed situation, and it can render the concepts of core and support confusing if it arises in multiple functions. Second, enterprises that have numerous revenue streams and have difficulty identifying a single function as the core. In fact, one benefit of business function surveys is to help identify situations where enterprises have multiple revenue streams. Third, respondents may understand the concept of core, as in “core competence”, as being related to the specific intellectual property assets or difficult-to-replicate competencies that provide the enterprise with a competitive advantage over rivals, even if no revenue is directly generated. Fourth, the distinction between core and support functions can be challenging for smaller enterprises, which may not have specific divisions or groups within the enterprise responsible for distinct functions. In small enterprises, employees can have responsibility for multiple functional areas, which suggests that it may be best to exclude small firms entirely from business function surveys.

49. Finally, as the practice of fielding surveys based on business functions matures, it could become more difficult for respondents to make distinctions based on management concepts such as business functions, however popular they may be in business schools and in practice. As the administration of business function surveys becomes mainstream, it will be more likely that surveys will be completed in countries and by individuals with less familiarity with the concept of business functions. In earlier, more experimental surveys, top managers could be consulted for their ‘best estimates’ of various business practices by business functions and provide accurate answers. By contrast, future surveys are more likely to be completed by personnel in regular administrative and accounting roles. This heightens the importance of providing a simple classification of business functions with reasonable and intuitively resonant correspondences to the existing product and occupational classifications.

50. For these reasons, the classification proposed in Table 4 dispenses with an *ex-ante* distinction between core and support functions. Instead, it bases the framework on the more traditional and widely understood distinction between goods and services.

**Table 4. Classification of business functions**

The 1<sup>st</sup>, 1-digit level is a “Section”, the 2<sup>nd</sup>, 2-digit level is a “Division”, while the 3<sup>rd</sup>, 3-digit level is a “Group”.

1. Production of goods	Example of tasks
1.1. Agriculture, forestry and fishing	Growing of plants; raising of animals; hunting; forestry and logging; fishing.

<b>1.2. Manufacturing and assembly</b>	Manufacturing; processing; assembly; refining; printing and binding; casting of metals; building of ships.
<b>1.3. Energy and extraction of raw materials</b>	Mining; extraction of gas and oil; stone quarrying; power generation (except trade of electricity).
<b>1.4. Construction</b>	Development of building projects; civil engineering; specialized construction tasks, including demolition.
<b>2. Provision of services</b>	<b>Example of tasks</b>
<b>2.1. Management and administration</b>	
<b>2.1.1. Management</b>	Financial services (e.g. banking, insurance, financial leasing, fund management); activities of head offices; HRM activities.
<b>2.1.2. Administrative and back-office tasks</b>	Financial markets administration; legal tasks; bookkeeping, accounting and auditing; office administration and business support services; public administration services.
<b>2.2. Engineering and research and development (R&amp;D)</b>	
<b>2.2.1. Engineering and related technical services</b>	Support tasks for raw material extraction; sound recording and video production; architectural and engineering tasks, and technical analysis.
<b>2.2.2. Research and development</b>	Research and experimental development in the area of natural

	sciences and engineering, and social sciences and humanities.
<b>2.3. Information and communication technology (ICT)</b>	
<b>2.3.1. Information and communication technology services other than software programming</b>	Software publishing, and computer consultancy activities; programming and broadcasting tasks; telecommunications tasks; data processing and hosting; web portals and related information service tasks; installation of mainframe computers; maintenance and repair of computers and communications systems.
<b>2.3.2. Software programming</b>	Computer programming and related tasks.
<b>2.4. Marketing, sales, and after-sales services</b>	
<b>2.4.1. Marketing and after-sales services</b>	Advertising and media representation; market research and public opinion polling; call centers.
<b>2.4.2. Sales</b>	Retail and wholesale; trade of gas and electricity; sales agents and real-estate trading.
<b>2.5. Transportation, logistics, and storage</b>	
<b>2.5.1. Transportation and logistics</b>	Road, water, rail and air transport activities; passenger and cargo transport; postal services.
<b>2.5.2. Warehousing and storage</b>	Warehousing; storage; packaging.
<b>2.6. Other services</b>	
<b>2.6.1. Facility management</b>	Accommodation (e.g., hotels and camps); food and beverage services

	(e.g. cafes and restaurants); cleaning services; landscape services; real-estate rental services; libraries; museums; sports centers.
<b>2.6.2. Maintenance and repair services</b>	Maintenance and repair of non-ICT electronic equipment, transportation vehicles, and personal and household goods.
<b>2.6.3. Other services, not included elsewhere</b>	Water, waste collection and, sewerage; remediation services; professional services (e.g. photography and translation); publishing of books and periodicals; travel agency activities; rental and operational leasing activities; security; education; human health activities and residential care; social services; creative and arts activities; gambling and betting; sports activities excluding facility management; activities of membership organizations; activities of households.

51. While the proposed classification of business functions means that the distinction between core and support function will be absent in the survey instrument, the concept is still vital in the analysis phase. Therefore, it is recommended that statisticians use the survey results and (when available) information from business registers to determine core and support functions assigned after the fact in the analysis phase. Methods for determining core functions are provided in the following sub-section. However, when the accuracy of the data collected this way is an issue, the information on the core business function can also be collected directly via a survey question.

52. A second difference from other classifications of business functions is the inclusion of a full range of sectoral categories in the goods-producing functions: agricultural production and fishing, manufacturing and assembly, energy and extraction of raw materials, and construction. Almost any type of goods-producing enterprise of sufficient size has the potential for engaging in external and international sourcing. Including the full range of goods-producing sectors also helps with the process of creating correspondences to activity classifications. However, the correspondences are not directly correlated and should mainly be considered a survey tool, guiding responding enterprises and helping survey managers.

53. Finally, the classification includes a three-level hierarchy of functions, including Sections (1 digit), Divisions (2 digits) and Groups (3 digits). The hierarchical structure opens the possibility for collecting greater or lesser detail, which can be especially important in heterogeneous — in terms of skills and wages, for example — functions such as management and administration; engineering and R&D; marketing, sales, and after-sales service; and transport, logistics, and storage.

#### **4.1 Methods for identifying the core business function**

54. As mentioned earlier, it is not required for survey respondents to identify the core function. Instead, it is recommended that statisticians derive the distinction at a later stage of the survey, e.g., using statistical analysis in a way comparable to the ISIC (or NACE) main industry code/activity designation.

55. The basic approach that can be used to identify the core business function of an enterprise is employment. Because prior surveys have consistently found the share of employment in the core/primary business functions to average between two-thirds to three-quarters of total enterprise employment, by far the largest share, statisticians can assign the label ‘core’ to the business function with the largest share of employment with some level of confidence.

56. However, this misses information about multiple sources of revenue and may misassign the core function when enterprises generate a large share of the revenue from business functions with few employees (e.g., enterprises with fully automated factories). Observing the mix of revenue-producing functions in a manufacturing enterprise can also help characterize the increasing content of services in goods production (sometimes referred to as *servicification*). It can be assumed that information on which business functions produce turnover in an enterprise will be apparent to respondents.

57. In countries where international sourcing surveys can be linked to information in the business register, the industry/activity code of the enterprise can be used to increase the confidence level when assigning the designation of core function to an enterprise. In

practice, the main activity of an enterprise in the Business Register is, in some cases, determined using information about the allocation of employees<sup>17</sup>. These three options are depicted in Table 5.

**Table 5. Approaches for identifying core business function: employment or turnover**

	Share of employment	Share of turnover	Industry code from the business register
1. Production of goods and materials			<div style="border: 1px solid black; padding: 10px; width: fit-content; margin: auto;">                     Industry code should reflect core business function                 </div>
2. Provision of services	Largest value associated with core business function	Largest value associated with core business function	
2.1. Management and administration			
2.2. Engineering and R&D			
2.3. Information technology			
2.4. Marketing, sales, and after-sales service			
2.5. Transportation, logistics, and storage			
2.6. Other services n.e.s.			
<b>Total</b>			

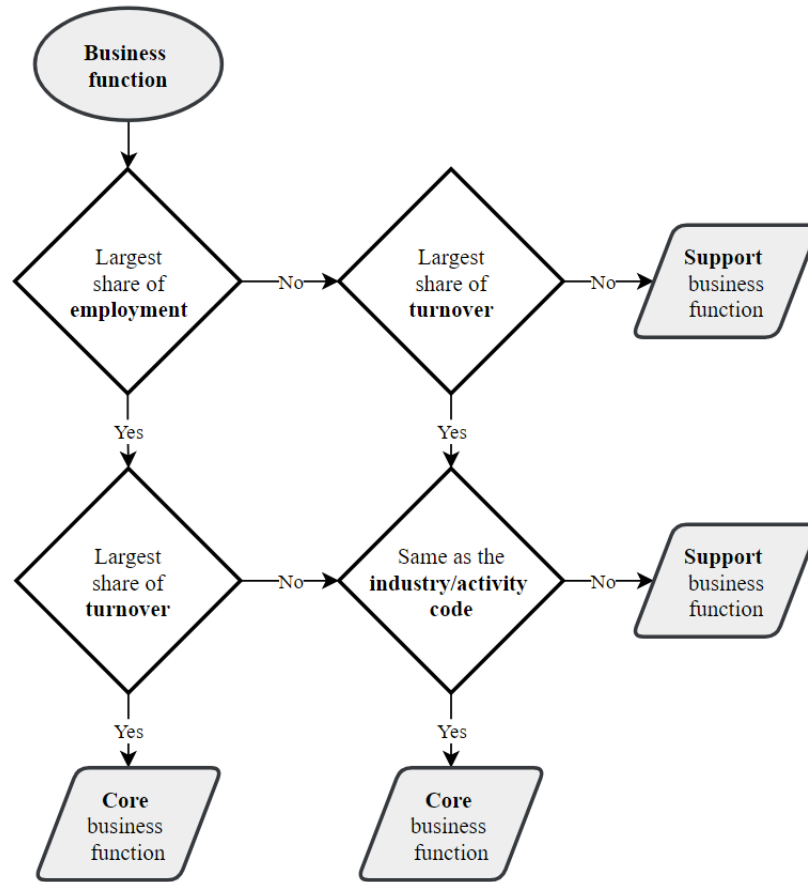
Statisticians should be able to predict with high probability whether a business function is ‘core’ or ‘support’ if it satisfies at least **two out of the three criteria** from Table 5. The process for the business functions identification is depicted in

<sup>17</sup> Details on how to determine the main activity of an enterprise are provided in the ISIC, Rev. 4, available at: [https://unstats.un.org/unsd/classifications/Econ/Download/In%20Text/ISIC\\_Rev\\_4\\_publication\\_English.pdf](https://unstats.un.org/unsd/classifications/Econ/Download/In%20Text/ISIC_Rev_4_publication_English.pdf).

58. Figure 2.



**Figure 2. Business function identification flowchart**



59. However, there are still difficult cases in applying this approach. Three main challenges have been identified, namely a) unavailability of the data on turnover or share of employment, b) the same business function being both core and support, and 3) difficulty estimating whether a function generates turnover.

60. According to feedback that Eurostat received during the international survey, long disaggregation (hierarchical structure of the classification of business functions with more detailed categories at the lower levels) can be challenging to understand and lead to fewer cases per business function, which in turn might cause confidentiality issues in smaller economies.

61. The economic phenomenon of job sharing could make it difficult to assess the number of jobs per business function accurately. However, job sharing can be better assessed by using FTEs (full-time equivalents) for measuring a single job in a business function or, in the case of surveying, the respondents can be directly asked to categorize the jobs into business functions for which the majority of the tasks have been done.

## 5. Concluding comments

62. Innovations in business statistics are rare and take time to test, deploy, and perfect. Nevertheless, the use of a business function framework as a tool to discover and classify changes in enterprise characteristics, especially patterns of domestic and international sourcing, has proven effective and of high policy interest. Macro-patterns of GVC-engagement can be estimated with recent innovations such as IIOs, but business function surveys can provide a crucial bottom-up picture of global integration and a great deal of policy-relevant detail when linked to micro-data resources on enterprise and worker characteristics.

63. Statisticians have already learned a great deal from international sourcing surveys, much of it aligned with expectations. For example, international sourcing is rare among enterprise populations but more common for large enterprises. Most international sourcing is to affiliated enterprises. In the EU, China is the most common extra-EU destination for core functions, and India is the most common for support functions. There is a net reduction of jobs in the EU due to international sourcing, with the number of jobs relocated abroad because of international sourcing roughly double that of jobs added from reductions in international sourcing. Job relocations abroad resulting from international sourcing are concentrated in manufacturing and affect low-skilled workers the most (Eurostat, 2019).

64. However, as the surveys and the practices they measure mature, several adjustments may be needed to classify business functions and survey methods. This Manual has proposed a simple (yet expandable) classification of business functions that is likely to be well understood by personnel in addition to top strategic managers. The potential confusion from the ex-ante division of business functions into core and support has been eliminated. The recommendation is to assign these labels after the fact, based on either the function with the largest employment or revenue, the activity code in the business register, or some combination. It will be crucial for policymakers to be able to detect which business functions are “sticky” to the enterprise and domestic economy and which are more “footloose”.

65. As a possible way forward with the classification of business functions, further research is needed on its applicability for capturing the four types of sourcing, namely domestic and international outsourcing and domestic and international insourcing. This research will be vital as it will address the applicability and relevance of the classification for all countries.

66. In addition, upon the finalization of the classification, a compilation guide on the classification of business functions might be developed, and correspondence tables between the classification on business functions and other existing international statistical classifications, such as CPC and ISIC. The correspondence tables will facilitate linkage

between business functions and economic activities, and the products that an enterprise produces. Correspondences with other classifications, such as NAICS, CPA, ISCO, and NACE, will also be beneficial. The correlation tables to ISIC and CPC, once available, will be included as annexes to the finalized classification of business functions.

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## GLOSSARY

The following is a list of concepts and their definitions as used in this Manual.

CONCEPT	DEFINITION
<i>Activity</i> ( <i>economic activity</i> )	Economic activity is understood as referring to a process, that is to say, to the combination of actions carried out by a specific entity that uses labor, capital, goods, and services to produce specific products (goods and services) ( <a href="#">IRIS 2008</a> ).
<i>Ancillary activity</i>	An activity incidental to the main activity of an enterprise. It facilitates the efficient running of the enterprise but does not typically result in goods and services that can be marketed ( <a href="#">SNA 2008</a> ).
<i>Business functions</i>	A grouping of common tasks that enterprises must carry out regularly, either internally or externally, to bring goods or services to market.
<i>Core business function</i>	A set of functions that produce goods or services intended for the market.
<i>Enterprise</i>	An institutional unit in its capacity as a producer of goods and services. An enterprise is an economic transactor with autonomy in respect of financial and investment decision-making, as well as authority and responsibility for allocating resources for the production of goods and services. (ISIC, Rev. 4, para. 77)
<i>Factoryless goods producer</i> ( <i>FGP</i> )	Enterprises that outsource the manufacturing transformation activities but own the underlying intellectual property products (IPPs) and control the outcome of the production process ( <a href="#">UNSD</a> definition).
<i>Global value chains</i> ( <i>GVC</i> )	The sequence of all functional activities required in the process of value creation involving more than one country.
<i>Insourcing</i>	Total or partial movement of business functions by an enterprise to another enterprise within the enterprise group.
<i>International sourcing</i>	Total or partial cross-border movement of business functions by an enterprise to another location outside of the compiling country.
<i>Offshoring</i>	Similar to international sourcing. It historically mostly refers to international outsourcing for cost-cutting reasons.
<i>Outsourcing</i>	Total or partial movement of business functions by an enterprise to another enterprise outside of the enterprise group.

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***Sourcing*** Refers to either outsourcing or insourcing in terms of organizational structure, or domestic and international sourcing in terms of geographical location. It is the total or partial movement of business functions from a part of an enterprise to another part or to a different enterprise.

***Support business function*** A set of functions that permit or to facilitate the core business functions, the outputs of which are not intended for the market.

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## **Annex I: Classifications of business functions used in prior statistical surveys**

### *The use of business functions in surveys*

1. The first official survey to introduce the concept of business functions in a statistical context was the 2007 European Survey on International Sourcing. The survey was repeated in 2012 and 2017/2018, with minor modifications, as the International Sourcing/Global Value Chains (IS/GVC) Survey.<sup>18</sup> The 2007 survey was conducted in 13 European countries, the 2012 survey in 15 countries, and the 2017/2018 survey in 16 European countries. In the European international sourcing and GVC surveys, questions about sourcing practices were bounded within a specific time period (changes to sourcing within the past three years). Although this practice helped identify new outsourcing and offshoring, the current domestic and international sourcing picture cannot be assessed when prior changes to sourcing are missing from the data. However, the surveys did not ask respondents for historical sourcing events out of feasibility and data quality concerns.

2. Unofficially, the approach was also pilot-tested by an academic team with a representative (by employment) sample of 317 enterprises in the United States in the National Organizations Survey (NOS) in 2010 (Brown *et al.*, 2013). This small-scale US survey also collected data on sourcing costs and wages, which had proved difficult or impossible to collect in Europe. However, only asking if a function is outsourced or not (binary choice) runs the risk of over-representing small levels of international sourcing in the data. Therefore, it was recommended that questions that collect quantitative information (i.e., the cost of goods or services sold) on the four sourcing options should be further tested, refined, and offered as an option for compilers seeking quantitative information on business function sourcing.

3. Finally, Statistics Canada used an approach similar to the EU survey in 2009 and 2012 in its mandatory Survey of Innovation and Business Strategy (SIBS), covering about 9,600 enterprises.

### *Business functions lists*

4. The classification of business functions for the three European surveys is shown in columns 1, 2, and 5 of Table 6. The 2010 NOS survey used a classification of business functions very similar to the 2007 and 2012 European surveys, but split the category of “marketing, sales and after-sales services including help desks and call centres” into two,

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<sup>18</sup> This survey was conducted in two rounds. The first round was conducted in 2017 and asked about international sourcing for the period 2014-2016 in Denmark, Germany, Italy, Latvia, Lithuania, Netherlands, Portugal, Romania, Slovakia, and Sweden. The second round was conducted in 2019 and asked about international sourcing for the period 2015-2017 in Austria, Bulgaria, Finland, Hungary, Norway, and Poland.



“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 the third column of Table 6).

**Table 6. Examples of classification of business functions used in statistical surveys**

2007 International Sourcing Survey (Eurostat)	2012 International Sourcing/Global Value Chains Survey (Eurostat)	2010 National Organizations Survey (US: Brown & Sturgeon)	2009/2012 Survey of Innovation and Business Strategy (Statistics Canada)	2017/2018 International Sourcing/ Global Value Chains Survey (Eurostat)
(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)	(9 functions: 2 core and 7 support)
Core business function	Core business function	Primary business function	Provision of goods Production of services	Core business functions <ul style="list-style-type: none"> <li>• Production of goods (for the market)</li> <li>• Provision of services (for the market)</li> </ul>
Distribution and logistics	Distribution and logistics	Transportation, logistics, and distribution	Distribution and logistics	Transport, logistics, and distribution support functions
Marketing, sales and after sales services including help desks and call centres	Marketing, sales services and after sales services, incl. help desks and call centres	Customer and after-sales service Sales and marketing	Call centres and help centres Marketing, sales and after sales service	Marketing, sales, after sales service support function
ICT services	ICT services	Information technology systems	Data processing Software development Information & comm. tech. (ICT) services	IT services and software support functions
Administrative and management functions	Administrative and management functions	Management, administration, and back office functions	Legal services Accounting and bookkeeping Human resource management Financial management	Management, administration, and back-office support functions
Research & Development	Research & Development, engineering and related technical services	Research & Development of Products, Services, or Technology	Research and development (R&D)	R&D, Engineering and related technical services and R&D support functions <ul style="list-style-type: none"> <li>• Research &amp; development services (R&amp;D)</li> <li>• Engineering and related technical services (except R&amp;D)</li> </ul>
Engineering and related technical services			Engineering and related technical services	
Other	Other	Facilities Maintenance Other	Other	Other business functions

5. The survey from Statistics Canada used a more granular classification, including 14 business activities plus a residual category (see the fourth column of Table 6). The Canadian classification also 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” function 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. The sub-categories of the Statistics Canada classification of business can be aggregated to the classifications used in Europe and the United States. As the fifth column of Table 6 shows, the 2017/2018 European survey followed the example of the Canadian survey in several respects: it split the core business function into goods and services, and R&D/engineering function into R&D and engineering (as had the 2007 survey).