

Statistical Commission
Fifty-first session
3 – 6 March 2020
Item 3(e) of the provisional agenda

Background document
Available in English only

Items for discussion and decision: international trade and business statistics

Strategic View on Business Statistics

Prepared by the Bureau of the Committee of Experts on Business
and Trade Statistics

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A. Preamble

This strategic view on business statistics reflects the views of the chair, task team leaders, and other members of the Bureau of the United Nations Committee of Experts on Business and Trade Statistics (UNCEBTS). It is based on research undertaken by the Committee's task teams over the last two years.

Research and discussions continue, so this present background paper to the United Nations Statistical Commission should be considered a work in progress. However, the main thrust for a new and integrated view on business statistics is uncontested as it builds on discussions within the Committee but also on the ongoing international debate on the future of business statistics. With the global research programme for business statistics led by the Committee still ongoing, this strategy paper will be further developed by the members of the Committee in 2020.

B. Introduction

National Statistical Offices (NSOs) responsible for business statistics are challenged to remain relevant in a new data environment with new and increasingly complex user demands, especially given the increased 'competition' from the emerging data ecosystem offering a wide variety of new data from both public and private entities. Compared to traditional data sources on business activity, these new public and private data sources often have higher granularity but are less often able to meet the quality standards adopted in official statistics. The various options available to NSOs to meet these challenges and improve the quality, coverage and heterogeneity of official business statistics need to be evaluated for their effectiveness at meeting specific users' needs at the national level, sustainability and international comparability.

Coupled with this is a need for the business statistics community to better respond to existing and emerging mega-trends such as globalisation and digitalization. These trends raise particular challenges related to, for example, the cross-border fragmentation of business activities, the adoption of new business models, and the way in which these businesses are defined, measured, and classified. These challenges have to be addressed while being mindful of budget and respondent burden resource constraints.

In this respect the aim of this background report is twofold. First, cognisant of the fact that burdens should be minimised but also recognising the opportunities that could be exploited through linking across various types of business statistics, the document tries to build consensus for an **enterprise-centered** approach to official business statistics, with

the Statistical Business Register (SBR) as the backbone. This approach is further elaborated in Section C on the strategic framework. This strategic framework also emphasizes a limited set of well-defined global priority areas to increase the relevance of official business statistics and their international comparability. Secondly, this document describes in Section D a methodological approach needed to produce new and more user-relevant outputs in official business statistics, fully rooted in the SBR and describes the new production framework and its supporting statistical infrastructure.

C. The Strategic Framework

The Strategic Framework is comprised of the following two main elements: a set of global priority areas for official business statistics and the enterprise-centered approach to business statistics.

The global priority areas emanate from the current national and international dialogue on new needs of data users and policymakers. This well-defined list of global priorities facilitates the focus of national efforts and international coordination.

The enterprise-centered approach responds to the needs to better identify and account for increased heterogeneity in national disseminations of official business statistics that can better meet the needs of the policy and user community in analyzing the impact of globalization, digitalization, wellbeing and sustainable development, among others.

1. Global priorities for the evolution of official business statistics

The current framework for the production and dissemination of official business statistics has been largely designed to meet a relatively narrow set of user needs, generally related to industry-level business characteristics, such as (the level of) employment, turnover, value added, labor costs, fixed investment and related productivity and profitability indicators.

Additional indicators, such as research and development (R&D) expenditure, technological innovation and ICT usage, mainly focus on technology as a part of the enterprise or the industry's production function. Indeed, important considerations, such as data quality and timely availability of short-term indicators, also play a crucial role in the production of official business statistics.

More granular and/or multi-dimensional measurement of business activity and adaptability to the measurement of emerging phenomena are not traditionally considered. More specifically, the current methodological approach does not allow for flexibility given the use of costly surveys and the rigidities in the statistical production process as well as the constraints imposed by random sampling design.

New users' needs warrant a re-evaluation of the international standards for statistical products on business activity. Most users now seek statistics on business activity that are multi-dimensional in nature, such as measures of the social and environment impacts of business activity. Based on these new users' needs, the scope of business units and the characteristics of measures of business activity have broadened to include units from the non-profit and informal sectors and measures of the impact of new technology on entrepreneurial activities and self-employment.

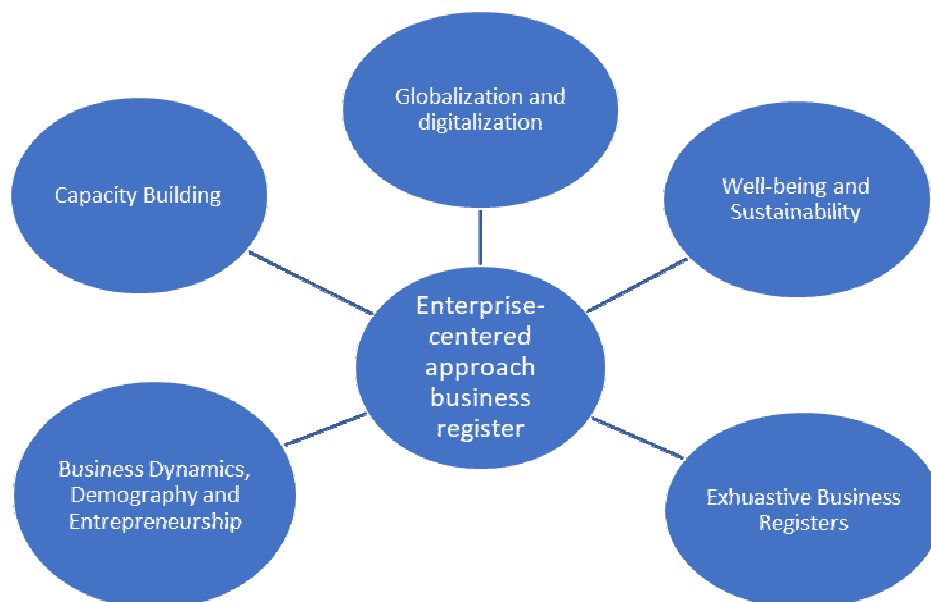
Given the very broad and highly diversified new demand for business statistics, the Committee has identified high-priority areas for the global programme on official business statistics to advance its methodological work on international standards based on current best practices. These high-priority areas reflect the new information needs across many fora, such as by the 2030 Sustainable Development Agenda and, in particular through the types of analyses conducted by users, who increasingly by-pass official structural business statistics and either (a) gain direct access to micro-data or (b) seek access to private data sources.

The five priority areas selected by the Committee (as shown in Figure 1) cover a large share of new users' needs, both at global and national level. For each thematic area, a work programme is defined and a task team established, consisting of members from a diverse set of countries (and international organisations) that have vested interests in developing new and responsive business statistics. Each task team represents a country-led workstream based on agreed Terms of Reference

Figure 1 demonstrates the integrating role of the SBR to ensure the overall coherence and consistency of the proposed business statistics and indicators related to the following global priority areas identified by the Committee:

1. Globalization and digitalization
2. Wellbeing and sustainability
3. Business dynamics, demography and entrepreneurship
4. Exhaustive business registers
5. Capacity building for statistical business registers

Figure 1 – Five global priority areas for business statistics identified by the United Nations Committee of Experts on Business and Trade Statistics (UNCEBTS)



The Task Team on Globalization and Digitalization acknowledges a converging pattern to define a common and integrated measurement framework in which the role of the multi-national enterprise (MNE) is recognized. Traditionally, globalization and digitalization are investigated by analysts and official statisticians as independent themes, whereas the task team would like to explore a more integrated approach of the measurement of globalization and digitalization based on the emerging dominance of global and national business models. These new business models reflect the integration of global and national business activity facilitated by global digital standards and intermediaries and global ICT infrastructure and operators.

Like the other task teams, the Task Team on Business Dynamics, Demography and Entrepreneurship emphasizes relevance (for economic analysis and policymaking), measurability and international comparability for a proposed set of internationally-agreed-upon business statistics and indicators. With the emphasis on the evolution of individual businesses over time, granularity, and distributional information, this task team aims to set the basis for introducing appropriate cross-sectional groupings of business units beyond the traditional groupings of size and economic activity. The Task Team builds on (and motivates greater up-take of) existing exercises such as around measures of high-growth firms, births and deaths by extending these towards new characteristics, for example foreign-owned start-ups, independent start-ups, born-global start-ups, innovative start-ups, etc. The approach recognizes the scope to identify, and mainstream, new characteristics in SBRs (which can also help generate better stratification variables for business surveys) and also the considerable scope to add these links (and indeed to generate data) through linking across firm-level registers and data sources.

The Task Team on Well-being and Sustainability focuses on the link between business activity and corporate social responsibility and extending the scope of business units to non-profit organizations and the informal sector.

The Task Team on Exhaustive Business Registers formulates an internationally-agreed-upon maturity model for SBRs across a limited number of components. It is also developing the international guidelines for the development of a Global Groups Register.

The Task Team on Capacity Building on Statistical Business Registers develops international guidelines for the maintenance and update of SBRs based on the internationally-agreed-upon maturity model for SBRs.

The Bureau of the Committee periodically reviews and coordinates the work of the Task Teams. In addition, the Bureau actively pursues collaboration with other expert and city groups (i.e., such as those responsible for national accounts, trade statistics, price statistics, SBRs, statistics on services, and international classifications) to seek opportunities for cooperation in areas of common interest for the update of the system of economic statistics.

2. The adoption of an enterprise-centered approach

The adoption of an enterprise-centered approach plays an essential role in the strategic view on business statistics. The highly fragmented nature of business statistics based upon large scale independent sample surveys and a relatively wide range of concepts, definitions and classifications, calls for a unifying statistical unit before proceeding to define a feasible and common data production framework. The adoption of an enterprise-centered approach to official business statistics stems from the fact that the enterprise is considered the economic agent with the capacity to decide on all its business activities, which also means that it is often the most common unit of data collection or around which different data sets can be linked . The adoption of an enterprise-centered approach to business statistics does not imply that other statistical units are less relevant. Rather, the choice of the enterprise as the main analytical unit allows for the coherent measurement of the evolution and behavior of business activity. The enterprise has to navigate a complex and fast-evolving economic and regulatory environment in which it arranges and re-arranges legal structures through core and outsourced business functions facilitated by an ever-changing technological production environment. This business environment is increasingly dominated by international trade in goods and services and cross-border legal ownership relationships between firms, where underlying transactions are often identifiable only in relation to the enterprise. In today's global and digital economy, the business operations of production, investment, ownership and finance require an integrated approach at the enterprise level to optimize the domestic and international business operations. The choice of the enterprise as the analytical unit does not mean that the observation unit also has to be an enterprise, however, it does require that each of those units can be aggregated to provide a view of the enterprise. As such, the SBR should contain the appropriate characteristics of the enterprise and the relationships between the different statistical units to guide the choice of the observation and reporting units.

The enterprise-centered approach addresses the following methodological and conceptual aspects:

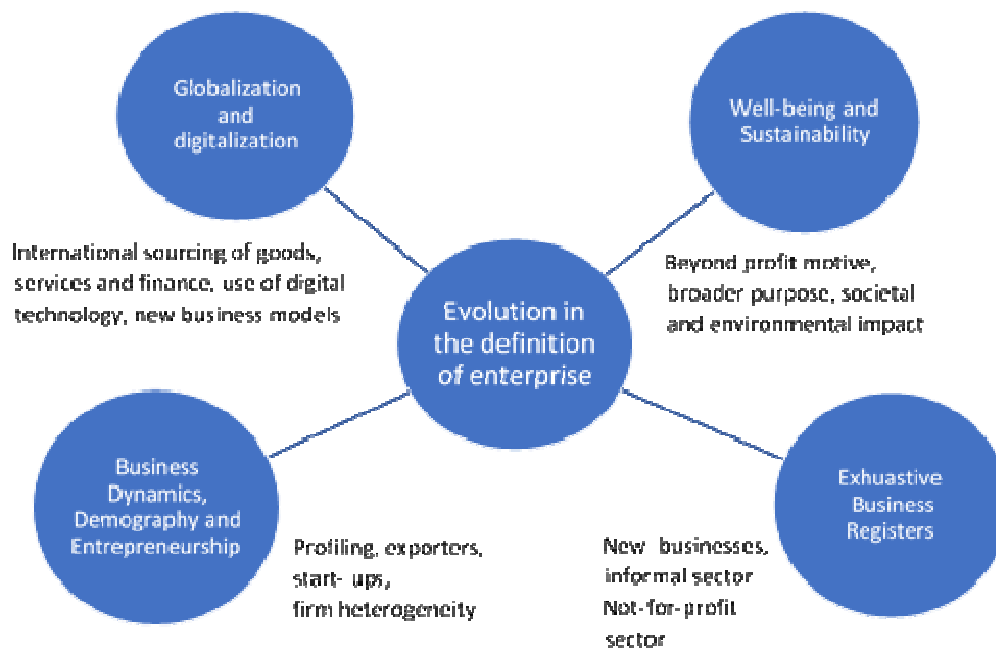
- (a) data integration within the business sector: it serves as the reference unit for data integration processes and for the assessment of data quality across different statistical domains related to production, employment, trade, investment, finance and ownership. Sound data linking processes between two or more data sources should consider the enterprise as the reference unit for data integration, using a core set of characteristics of the enterprise in the SBR. This core set of characteristics of enterprises is referred to as the “spine” of the SBR. In addition, the inconsistency between variables related to different data sources after data integration (e.g., the link between business characteristics, the export values and product details) is usually resolved when managed at the enterprise level.
- (b) setting priorities: it allows for the identification of enterprises with the highest impact on national business-related statistics in order to prioritize their data collection and quality control. Even in developing countries, while the availability of a limited

number of units in the SBR can result in partial coverage of the economy, the quality of the data collected can still be high for national business-related statistics if the quality and coverage of leading firms resident in the country are assured by automatic or manual quality checks.

- (c) linking relationships between units of the enterprise: it describes the link between statistical units of the enterprise and provides the key to scale up or scale down business-related information according to a well-defined set of statistical units, such as establishment, enterprise, enterprise group, and MNE. In particular, the inclusion in the SBR and data integration processes of other statistical units, such as local units (plants) or enterprise groups, shall be carried out by keeping both an horizontal (across variables) and vertical (across units) coherence from micro data up to aggregated figures in order to guarantee the production of high-quality and fully consistent business statistics.
- (d) ensuring data quality, consistency and coherence: it provides the possibility to more easily detect and correct major bias in the data by comparing different data sources related to information on an enterprise's business operations related to production, trade, employment, finance and ownership. It facilitates the integration of information that is normally collected at the enterprise level (such as R&D expenditure, ownership, innovation, and balance sheets) with production, income and expenditure data, which is currently collected at the establishment level.
- (e) facilitating data exchange and sharing arrangements: it provides a better opportunity for NSOs and international organizations to collect, share and analyze enterprise-level information to ensure its global coherence.
- (f) monitoring of legal structures of enterprises: it allows for a better monitoring of relatively rapidly changing legal structures of enterprises, as well as their evolution.
- (g) proving a feasible and fully consistent data production framework to fully exploit the micro-data informative potential of SBR integrated data for the dissemination of new outputs as described in section D.

It should be emphasized that the proposed approach for official business statistics does not aim to affect the standard definitions of statistical units or traditional classification schemes. However, the adoption of an enterprise-centered approach and the strong focus on a specific set of global priority areas, as described in the previous section, will warrant an evaluation of the present set of business statistics. For instance, as shown by Figure 2, the traditional definition of an enterprise in official statistics as an economic agent exclusively oriented to making profit, dominated by domestic and local business operations, and characterized by a high degree of homogeneity in the use of industry-specific inputs and technology may need to be revisited.

Figure 2 –New perspectives on global priority areas and the evolution of the concept of enterprise and related statistical units



The global priority area of *Globalization and digitalization* warrants an evaluation of the traditional definition of the enterprise to adapt to the international sourcing of business operations through firm networks in global value chains, the development of new business models, and the use of cross-cutting technologies in different industries (not only for large complex enterprises, but also for small and medium-sized enterprises (SMEs)). The global priority area of *Business dynamics, demography and entrepreneurship* reviews the relevance of traditional economic classification schemes, which are based on industry, enterprise size and territorial location, in explaining differences across firms in birth, death and high-growth rates. This global priority considers new core concepts for better understanding entrepreneurship, business demography and business dynamics, and for presenting a set of indicators that can be used to support the analysis and implementation of public policies that encourage entrepreneurial activity. The statistical definitions and indicators should enable policymakers to assess the impact of policy initiatives on economic activity and its impact on jobs. The global priority area of *Well-being and sustainability* expands the motives of business enterprises beyond the exclusive pursuit of profit to also consider social responsibility and environmental sustainability. The global priority area of *Exhaustive Business Registers* explores the boundaries of market-oriented business sectors and aims to expand the scope of SBRs to new forms of business activity oriented to non-profit activities and the informal economy.

By and large, the diverging patterns in both the organization and the economic performance of businesses included in the same industry warrant a review of the traditional assumption of the existence of a representative business activity classified by its production process, its use of inputs and its production of outputs of goods and services. Additional characteristics of the business activity must be identified for the measurement of the heterogeneity in business structure and performance by official statistics.

Moreover, the pervasive role of MNEs led by a controlling unit as dominant actors in the domestic and globalized economy warrants a reconsideration of the traditional role of the enterprise as the controlling unit of business behavior and the establishment (or local unit/industrial plant) as the place where the production-related decisions are made. For instance, the controlling unit of the enterprise group is defined in different ways in different contexts (e.g., ultimate controlling institutional unit; global decision center; holding company, etc.) and is the economic entity that takes most of the strategic decisions, while enterprises that are not responsible for operating the business lines of the enterprise group hold limited decision capabilities. In contrast, local industrial plants may substantially differ from each other in terms of type of products produced, technology used and geographical market orientation, and may have a degree of operational autonomy.

D. Production framework

This part of the paper explores how the strategic view on business statistics can be implemented by NSOs by adopting a new cost-efficient and data quality-augmenting production framework. Three key elements characterize the new production framework: (1) the use of the SBR as the backbone to produce official business statistics, (2) the development of a new set of classification schemes and variance-based indicators, and (3) new methods related to microdata linking, profiling of MNEs and data exchange and sharing. Each of these elements are further described below.

1. The SBR as the core of the new statistical infrastructure

The SBR already plays a crucial role in official statistics. It provides the frame to correctly identify the target population for business surveys, to randomly select the sample of units under investigation, and to gross-up the sample of survey respondents. However, with a few limited exceptions, such as in the case of business demography indicators, NSOs have usually given little attention to the SBR as a direct source of information to produce business statistics. Indeed, the SBR contains some highly desirable characteristics for data dissemination, such as its exhaustive nature and the high level of coherence of information on business units. Because SBRs are not constrained to survey-specific sample designs, the information included therein can be disseminated with a high degree of granularity (such as breakdowns by industry, location and enterprise size), reclassified ex-post according to non-standard classification schemes, and consistently integrated with other data sources. In addition, the set-up and maintenance of SBRs usually rely upon administrative or fiscal data sources, which limits

the response burden and lowers the data collection costs as compared to survey collection.

As a result, the SBR can play a pivotal role in the process of data integration with different and multiple data sources by generating new information with the desirable characteristics described above. Appropriate micro-data linking methodologies based upon unique identifiers could be applied to produce consistent information scalable from micro to aggregated figures. The Linked Employer Employee Data (LEED) approach, in which business micro data is being linked to jobs and other social statistics, is an example of data linking between statistical business and household units.

However, the ability of the SBR to easily generate consistent and extended data sets through data linking crucially relies upon successful matching of micro data sources that hold similar characteristics. An example is the linking of SBRS with census-like administrative data sources that have been harmonized for statistical definitions of the statistical units and variables. In addition, the SBR can be linked with other company lists or registers, such as the list of exporting and importing enterprises from customs records as demonstrated by the production of TEC (trade by enterprise characteristics statistics) in many countries.

Innovative approaches can be developed to fully exploit SBRs to enhance data integration, using a spine model consisting of a core set of business characteristics. The integration of business registers according to the spine model will also be explored for purposes of the Global Groups Register of the largest MNEs presently being developed by UNSD, building on the experience of the EuroGroups Register operated by Eurostat.

2. Analytical classifications and new variance-based indicators

As already highlighted earlier, an increasing heterogeneity in economic performance between business units within and across industries makes mean-based indicators (e.g., average labor costs, average productivity, and average profitability) less and less informative for data users, who wish to better understand the complexity of today's business activities. Similarly, the capability of standard classification schemes to explain firm-level variability as a result of its basic business characteristics (i.e., industry, enterprise size class and location) has sharply declined based upon the increasing relevance of firm specific assets (technological, commercial, managerial or human capital related) in explaining the heterogeneity in both level and growth rate of productivity, profitability and new job creation.

As a result, there is a need to develop new classification schemes and a new class of variables based upon variance-based indicators for business statistics. By leveraging the granularity and the informative power of basic and extended SBRs, it is possible to introduce new classification schemes and a new class of indicators that can provide a broader and more consistent picture of the evolution of businesses.

New analytical classification schemes should reflect characteristics of business profiles - such as export activities, provision of services, internationalization processes or new

technology adoption (e.g., patents or digital profile) because these latter features have been proven in the academic literature to explain a larger share of firm-level heterogeneity in productivity and profitability as compared to traditional classification schemes.

Firm-level variance-based indicators for productivity, labor costs and profitability can be easily calculated by NSOs if the variables are integrated in the SBR for all statistical units. Those indicators are very informative in explaining differences in business performance across business units within the same industry and across different countries. For instance, given differences across countries in the level of productivity for a given industry, countries with lower firm-level variance may exhibit more similar and converging patterns of productivity across firms, while others with higher variance may have a more polarized business community (in which there are stronger winners but also firms with severe problems).

Similar considerations apply if one considers the evolution over time of a firm-level productivity distribution for a given country, industry and size class. Productivity stagnation (i.e., no change in mean values over time) can hide a strong increase in variability, whereby the best-performing firms are more competitive, but their impact on industry and country mean productivity is cancelled out by poor performance of other struggling businesses. As a result, associating standard business statistics indicators with new indicators on variability or other distribution-based indicators can highlight a more complex picture of the evolution of resident companies, ultimately allowing the opportunity to better fine-tune policy measures both at the national and sub-national/regional levels.

3. Microdata linking, profiling of MNEs, and data sharing and exchange

In order to improve the quality and granularity of business statistics, and to understand the increasingly complex role of businesses and MNEs in global production and employment, it is necessary to develop more efficient ways of producing statistics. Such strategies include microdata linking (MDL); profiling large and complex MNEs; and data sharing or data exchange.

MDL, or the combining of micro-data on entities, such as enterprises, jobs and persons, not only reduces respondent burden, but also supports analysis of both firm and employee characteristics and can help in answering questions on job dynamics, income and welfare.

Furthermore, to ensure meaningful and correct measurement of global production and trade, many statistical offices are considering how to improve data specifically on large and complex MNEs. At the national level, Large Case Units (LCUs) are increasingly being established in NSOs to improve the quality, consistency and coherency of data on MNEs by coordinating data collection and compilation, ensuring data consistency across all data sources, and building client relationships with the respondent MNEs. For producing statistical data related to MNEs the use of new and innovative data sources for reducing statistical burden and cost to NSOs including direct data collection from MNEs,

an improved legal framework and more intensive use of administrative data should be supported.

Bilateral exchange of business micro-data between national statistical offices and possibly with other producers of official statistics would be another way forward in improving the understanding of business dynamics and the operations of MNEs at the global level. However, it is widely known that data sharing of micro-data at the international level has proven to be limited due to strict privacy and confidentiality laws. While there are ongoing initiatives to make progress in addressing data sharing issues across countries, such as the G-20 Data Gap Initiative (DGI) and forthcoming ECE Guide to Sharing Economic Data, it is well understood that this is an area that is still being developed. Most business statistics-related projects to compile internationally comparable statistics to date have utilized “coordinated MDL” or “distributed microdata research”, which requires central coordination of the database construction, analysis and publication, respecting subsidiarity and national legislation.

One possible way to address the legal obstacles associated with data exchange is to help countries draft legislation that amend the treatment of data confidentiality. For example, it would be useful to consider an exemption to data confidentiality to allow exchange of firm-level data that are already made publicly available by the respondent itself, perhaps in published annual reports or filings with financial regulators, if the data meet the statistical definitions. These public data could then also be exchanged freely among NSOs and/or consolidated by international and regional agencies. This would be a critical step towards assuring the overall quality of the macroeconomic aggregates and business statistics produced by a country at national and sub-national/regional level.

E. Conclusions

Given the changing nature of business activity, a new strategic view on business statistics should be pursued by NSOs to remain relevant and responsive to new data needs. Such a new strategic perspective warrants coordination at the international level to ensure the international comparability of business statistics.

The new strategic view on business statistics should be guided by:

- a targeted approach with a focus on a limited number of global priority areas, with the objective to generate unique value-added for data users in terms of relevance, granularity and consistency of business data.
- the prominent use of the SBR as the spine of the new production framework representing the population of business units. Ample provision should be made to create the capability for microdata linking and integration of the SBR with household units and thus for the generation of an integrated set of business and household related sociodemographic and socio-economic statistics.
- the promotion of agreements for international data sharing and exchange of business statistics to capture the global role of MNEs through international profiling of large and complex enterprise groups.

The proposed international governance model to support a coordinated and effective evolution of business statistics relies upon the activities of UNCEBTS as described in its mandate. This international group of experts in business and trade-related statistics operates as a technical and coordination body. Its work will result in the evolution of business statistics along specific global priority areas and based upon an enterprise-centered approach as described in Section C of this background paper. The Committee also promotes the adoption of a common production framework based on a centralized SBR, microdata linking, profiling of MNEs, and data sharing and exchange, as well as the development of new classification schemes and indicators, as highlighted in Section D. This approach will make it feasible for countries to progress with the evolution of their business statistics in a way that is consistent with their own level of development and capabilities. The UNCEBTS will also ensure global coordination and provide guidance to other statistical expert groups responsible for related statistical domains.

A list of actions that has already been agreed by the task teams of the UNCEBTS for implementation includes the following:

- a mapping of NSOs' institutional and technical capabilities to set up and maintain SBRs as an a priori condition for their further development;
- the production of experimental indicators which serve users' needs for further analysis of drivers of growth; e.g., based on firm variability and distributions;
- the identification of a set of concepts, guidelines, data sources and minimum set of indicators to improve national and international business indicators in terms of comparability and relevance;
- the formulation of implementation strategies for the production of newly defined indicators that are consistent with NSOs' existing and potential capabilities.

Additional actions that shall be considered in the drafting of the final version of this strategic view paper are the following: the further elaboration of the concept of enterprise vis-à-vis the complex structures of MNEs and enterprise groups and their business functions; the identification of appropriate tools to coordinate the activities of different task teams of the UNCEBTS or working groups operating in similar statistical domains, and the design and implementation of an appropriate communication strategy both within the international community of business and trade statisticians and with respect to external stakeholders. The latter may be interested not only in communication about the production of new outputs in business statistics but also in the knowledge and professional skills held by official statisticians in understanding, classifying and measuring new complex and integrated business phenomena as well as in evaluating the quality and relevance of new data sources.