e-Commerce Statistics Workshop

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E-Commerce Statistics Workshop Agenda

DAY 1 – Importance of e-Commerce and e-Comm Official Statistics

❑ *Basic e-Commerce (DE) definitions and facts*

❑ *International and Mongolia situation*

❑ *Why official ICT/E-Commerce Statistics is important*

❑ *How to re-enforce official e-Commerce Statistics*

❑ *Discuss Specific e-Commerce Statistics Cases*

Strengthening the Official Statistics role

International situation

- Over the last years, a dramatic increase in the demand for statistical information has been recorded by institutions responsible for the production of official statistics, mainly national statistical systems and international organizations.

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International situation

- *In parallel, the usually predominant role of National Statistical Offices (NSOs) has been challenged by the emergence of new data producers*. These latter, mainly large multinational enterprises from the private sector, but also key players in the domestic e-commerce arena (e.g., in Europe, the Association of e-commerce enterprises), have acquired a considerable importance in the data ecosystem thus increasing the degree of competition in many statistical domains, and especially in the e-commerce sector domain where other producers of economic data, such as national or regional public bodies and private data providers have always provided statistical information.

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Mongolia e-Commerce statistics is available from the following commercial sites:

- **Statista.com**

- **Privacyshield.gov**

- **Datareportal.com**

- **Start.io**

- **Ecommercedb.com**

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Mongolia e-Commerce statistics is available from the following commercial sites:

- None of them seem to rely on their own collected data and instead rely on external data sources. Since e-Commerce statistics primary data is hardly available in Mongolia, we wonder where their data, estimates and forecasts are really coming from.

- it is unlikely that statistics on business ICT use can be produced efficiently outside the national statistical system, especially to guarantee the production under the international standards required to achieve international comparability.

- *Unless sustained by stable economic forces and strong reputation, one-off surveys by unofficial agencies are unlikely to be efficient or sustainable over time (UNCTAD)*. They should therefore be avoided and donor organizations that support the strengthening of statistical systems need to be wary of devoting resources to such surveys. A preferred option is to include business ICT use surveys in national statistical programmes.

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e-Commerce Data Market Challenges - 1

1. *It is a globalised market*. Enterprises need to understand the evolution of their markets at a global scale to successfully carry out their own businesses. Given the increasing global interconnection of economic and social issues, public institutions and citizens need also to take their decisions based upon a set of information with a broader geographical scope with respect to the national one;

2. *New technologies* have also a pervasive impact in terms of data accessibility and integration. Although the full exploitation of data from different types of data sources is prevented by a substantial lack of standardization, the potential advantages of data integration are self-evident, such as in the case of data lakes;

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e-Commerce Data Market Challenges -2

3. *Increasing demand on data for analysis*. Companies more actively engaged in the exploitation of business data have found in data analytics a source of specific competitive advantage in terms of faster and more accurate knowledge of new business opportunities. Demand is also driven by the increasing global interdependency of markets, uncertainty on future political and economic perspectives, etc;

4. *Increased competition of commercial statistics vendors* mainly from the private sector but also PPP that push NSOs to re-define their strategic positioning.

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e-Commerce Data Market Challenges - 3

e-Commerce data produced by NSOs still hold a high value in this market not only for their superior data quality as compared to other data sources, but above all for their aptitude to concretely support a wide range of data users at different stages of their decision-making process by reducing uncertainty and providing new valuable information. In this respect, private data and official statistics are alternative and competitive data sources in the e-commerce data arena.

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Comparing official e-Commerce statistics vs commercial one - 1

1. *Data capturing and computational processing, as well as data warehousing and dissemination tools*, present for NSOs a high threat of fast erosion of value added by private data providers, since the commercial players usually hold a superior technological capability and invest a considerable amount of economic resources in marketing and client customization tools;

2. *Classification and standardization skills, and methodological knowledge, present a medium intensity threat for NSOs since they can be only partially duplicated by private data providers*, since public or private organizations other than NSOs usually make limited investments in ad hoc methodological solutions and have limited capability to define and maintain standard classification schemes according to high level standards.

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Comparing official e-Commerce statistics vs commercial one - 2

3. *The capability to plan and maintain a high degree of harmonization and coherence in the production of business data represent a peculiar characteristic of NSOs*. Indeed, it represents the NSO's genuine competitive advantage over other types of e-Commerce data producers in terms of value added creation from input data. Other organizations engaged in the production and dissemination of E-Commerce data usually neither plan a priori nor have developed standardized routines or manual checks to maintain a high level of harmonization and coherence in the production of e-Commerce data. Therefore, these factors represent now a limited threat for NSOs.

4. *Thematic knowledge* represents the set of competencies and skills on the measurement and analysis of a specific phenomenon that NSOs gain trough the setting up and maintenance of a survey. This knowledge contributes to improving the quality of data in terms of coherence, accuracy but also relevance. The source of this knowledge can be either internal, based on the academic and professional experience of officers, technicians and researchers in charge of a specific survey, or external, generated by interactions with respondent units and data users

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Recommendations - 1

- *reinforce and further enhance the e-commerce statistics production* phases where NSOs have their added value as depicted above. .

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Recommendations - 2

- *define a networking and partnership strategy* especially with reference to other organizations that hold specific technological, data capturing and dissemination assets can provide NSOs with additional resources to reinforce their strategic positioning in the e-Commerce data arena. The definition of an active partnership with different types of data providers in data capturing is also important to obtain some substantial advantages in terms of efficiency, costs reduction and better timeliness in data dissemination by externalizing some low value-added activities of the production process such as data standardization and preliminary data quality checks.

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Recommendations - 3

- promote the higher quality and the free and immediate accessibility of official statistics to all data users, enterprises, citizens and policy makers.

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Recommendations - 4

- promote the value added for commercial statistics providers to develop an alliance with NSOs due to the reliability of official sources. For this scope, NSOs should also promote the transfer of scientific knowledge and competencies available in their organizations to improve the quality of all e-Commerce data.

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Recommendations - 5

- define joint projects with other institutions and also commercial organizations active in the market of e-Commerce data to boost the development of new data by sourcing new technologies, new business models and new data sources, by preserving their neutral and institutional position with respect to all data users and data producers active in the business data arena both in terms of data accessibility and market profit opportunities.

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Recommendations - 6

- promote the development of new official statistics in specific areas of foremost interest for the business and social community at the national level or international level where market opportunities are insufficient for private organizations to produce new data or there is a strong need to develop official data in order to benchmark the data quality and reliability of not official data sources.

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Recommendations - 7

- provide a better data dissemination by investing more in making their data more explicitly linked to data-user decision processes by using both technological (automatic customization of data dissemination according to data user characteristics that are publicly available) and analytical solutions (tools and dissemination products oriented to reduce the knowledge gap in understanding and effectively use the data).

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Recommendations - 8

- reinforce the cooperation with other NSOs and international organizations in the dissemination of official statistics by promoting the publication of data at the national level that incorporate international comparison with other countries, following the examples of Eurostat and OECD that systematically publish any statistical figures in the framework of an international comparison data dissemination approach (commercial entities are already doing this).

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A new organizational model

- The budget limitations and the need to compete with the rising commercial statistics or, at least, the wish to remain relevant in the e-commerce/business statistics arena has led the many EU NSOs to *adopt new strategies, increase productivity, streamline the statistics production through the adoption of a new organisational model based on GSBPM and the use of new technologies*.

- The adoption by NSOs of a more efficient and flexible production model that decompose and reorganize all statistical production lines based on well-defined business lines and business support functions can ensure large benefits in terms of costs reduction, increased efficiency and better timeliness in the production and dissemination of data. Furthermore, it can lead to additional benefits in terms of data quality based upon the pooling of methodological, data collection and analytical competencies that are dispersed in the stovepipe based production organization.

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A new organizational model – The Generic Statistical Business Process Model

Overarching Processes							
Specify needs	**Design**	**Build**	**Collect**	**Process**	**Analyse**	**Disseminate**	**Evaluate**
1.1 Identify needs	2.1 Design outputs	3.1 Reuse or build collection instruments	4.1 Create frame and select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems	8.1 Gather evaluation
1.2 Consult and confirm needs	2.2 Design variable description	3.2 Reuse or build processing and analysis components	4.2 Set up collection	5.2 Classify and code	6.2 Validate outputs	7.2 Produce dissemination products	8.2 Conduct evaluation
1.3 Establish output objectives	2.3 Design collection	3.3 Reuse or build dissemination components	4.3 Run collection	5.3 Review and validate	6.3 Interpret and explain outputs	7.3 Manage release of dissemination products	8.3 Agree an action plan
1.4 Establish output objectives	2.4 Design frame and sample	3.4 Configure workflows	4.4 Finalise collection	5.4 Edit and impute	6.4 Apply disclosure	7.4 Promote dissemination products	
1.5 Check data availability	2.5 Design processing and analysis	3.5 Test production systems		5.5 Derive new variables and unites	6.5 Finalise outputs	7.5 Manage user support	
1.6 Prepare and submit buiness case	2.6 Design production systems and workflow	3.6 Test statistical business process		5.6 Calculate weights			
		3.7 Finalise production		5.7 Finalise data files			

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Case Study – ISTAT/1 – A new organization

- The new organization adopted by ISTAT since 2014 , based on the GSBPM model, has introduced some substantial changes in the organization of statistical production for the business/e-Commerce domain: all statistical production processes related to economic units, such as business enterprises, public and non-profit institutions, were clustered in a single directorate which also includes all the relevant basic business registers.

- This new division of labour in the organization of statistical production process generated some substantial advantages for Business/e-Commerce Statistics in Italy with a positive and persistent impact both on data quality and on the expansion of value added generated by official figures. The allocation of all data collection activities to a specific directorate with the active support of external suppliers (call centres) led to successfully exploit economies of scope and scale. On average, the response rate for all structural business surveys raised from 10% to 25% over the past two years

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Case Study – ISTAT/2 – New Strategic Agreements

- The definition of strategic agreements with some key institutional as well as commercial data providers, including the knowledge transfer on how to assess and improve the quality of raw data, helped ISTAT to reduce the timing of data processing as well as the amount of human resources traditionally devoted to input data quality checks with mutual benefits for data providers that have increased the overall quality and therefore the value added of their data.

- This is the case of the close cooperation since long time established between ISTAT and the Italian Customs Agency for the production of foreign trade in goods statistics, and more recently of technical and commercial agreements between ISTAT and private data suppliers for the reclassification of administrative data according to economic principles coherent with statistical variables definitions.

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Case Study – ISTAT/3 – New Strategic Agreements

- The definition of strategic partnership between ISTAT and key output stakeholders for the dissemination and economic analysis of business data has always been a crucial asset to promote the relevance of business statistics in Italy. The production for two decades of a joint statistical yearbook on foreign trade statistics and enterprise economic activities between ISTAT and the Italian Agency for the development of foreign trade and attraction of foreign investments (ICE) was originally conceived to increase the relevance as well as to reduce the gap in the dissemination of official statistics on international trade in goods

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Case Study – ISTAT/3 – Adoption of new technologies

- In 2017 ISTAT has started the production of a set of experimental statistics based on the use of Internet data, one of the most relevant Big Data sources.

- These statistics refer to the activities that enterprises carry out in their websites and are a strict subset of those currently produced by the "Survey on ICT in enterprises".

- The idea is to calculate these estimates by making use of the websites content, that is collected by using web scraping tools, and processed by applying text mining techniques. Then, models are fitted in the subset of enterprises for which both sources are available: survey reported values, and relevant terms obtained by the web scraping/text mining procedures.

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Case Study – SN Statistics Netherlands/1 – A new organization

- In response to a changing environment, in the years 2010s, Statistics Netherlands embarked on a large-scale redesign of the way statistics were produced . The aim was to increase the capability to respond to changing information demand, to lower the response burden for surveys, especially for businesses, and to improve efficiency, while preserving the overall quality level.

- Similar to Italy, it was felt that a new entire approach, based on GSBPM, to producing statistics, moving away from the traditional approach of independent, parallel production lines was needed. Indeed, as independent production lines for statistical products typically have their own design, customized methodology and IT solutions, they are expensive to develop and maintain.

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Case Study – SN Statistics Netherlands/2 – A new organization

- Adopting a more integral approach to designing statistical production processes creates opportunities for economies of scale in process design, statistical methods, IT applications, development, training, and so on.

- The redesign was carried out within the framework of a so-called enterprise architecture, which gives overall guidance when structuring the processes of the organisation, including statistical methods and IT tools used.

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Case Study – SN Statistics Netherlands/3 – The Adoption of new technologies

- SN has pioneered the work on the usage of Internet as a data source for Official Statistics by means of Web scraping . SN started scraping air tickets and property market and clothes prices.