Cetic.br

The Regional Center for Studies on the Development of the Information Society

Reliable ICT Data for Evidence-Based Digital Policy Design and Monitoring

The Regional Center for Studies on the Development of the Information Society

Cetic.br was created in 2005, as a department of the Brazilian Network Information Center (NIC.br), with the mission of producing data on access to information and communication technologies (ICT) and their use and appropriation by the Brazilian society. The data collected is used in the design and monitoring of public policies that contribute to the development of the Internet, supporting digital transformation.

In 2012, Cetic.br became a UNESCO Category 2 Centre, the first of its kind dedicated to the development of information and knowledge societies. The Center reports to the Communication and Information (CI) Sector, one of five areas covered by UNESCO. It contributes to the Organization's strategic objectives, strengthening its efforts to monitor the building of information and knowledge societies. Cetic.br cooperates with countries in Latin America and Portuguese-speaking countries in Africa.

Mission

Cetic.br's mission is to contribute to building inclusive knowledge societies through information and communication technologies in Latin America and Portuguese-speaking countries in Africa. The Center, which is responsible for the periodic production of indicators and statistics on the availability of ICT in Brazil, also conducts capacity-building programs in survey methodologies in the regions in which it operates.

Main Lines of Action

ICT STATISTICAL DATA PRODUCTION CENTER & KNOWLEDGE HUB

COLLABORATION PLATFORM & METHODOLOGICAL INNOVATION LAB

CAPACITY-BUILDING PROGRAMS ON SURVEY METHODOLOGIES

ANALYSIS OF THE SOCIOECONOMIC IMPACTS OF ICT & CONTRIBUTIONS TO PUBLIC POLICIES

"Cetic.br has greatly contributed to the development of indicators and the collection and analysis of data that enables policymakers to foster the opportunities and mitigate the risks that digitalization brings. Beyond its expert role in statistical data production, the Center has been a major partner in building capacities of UNESCO Member States, including reflections on the impact of emerging technologies such as Artificial Intelligence (A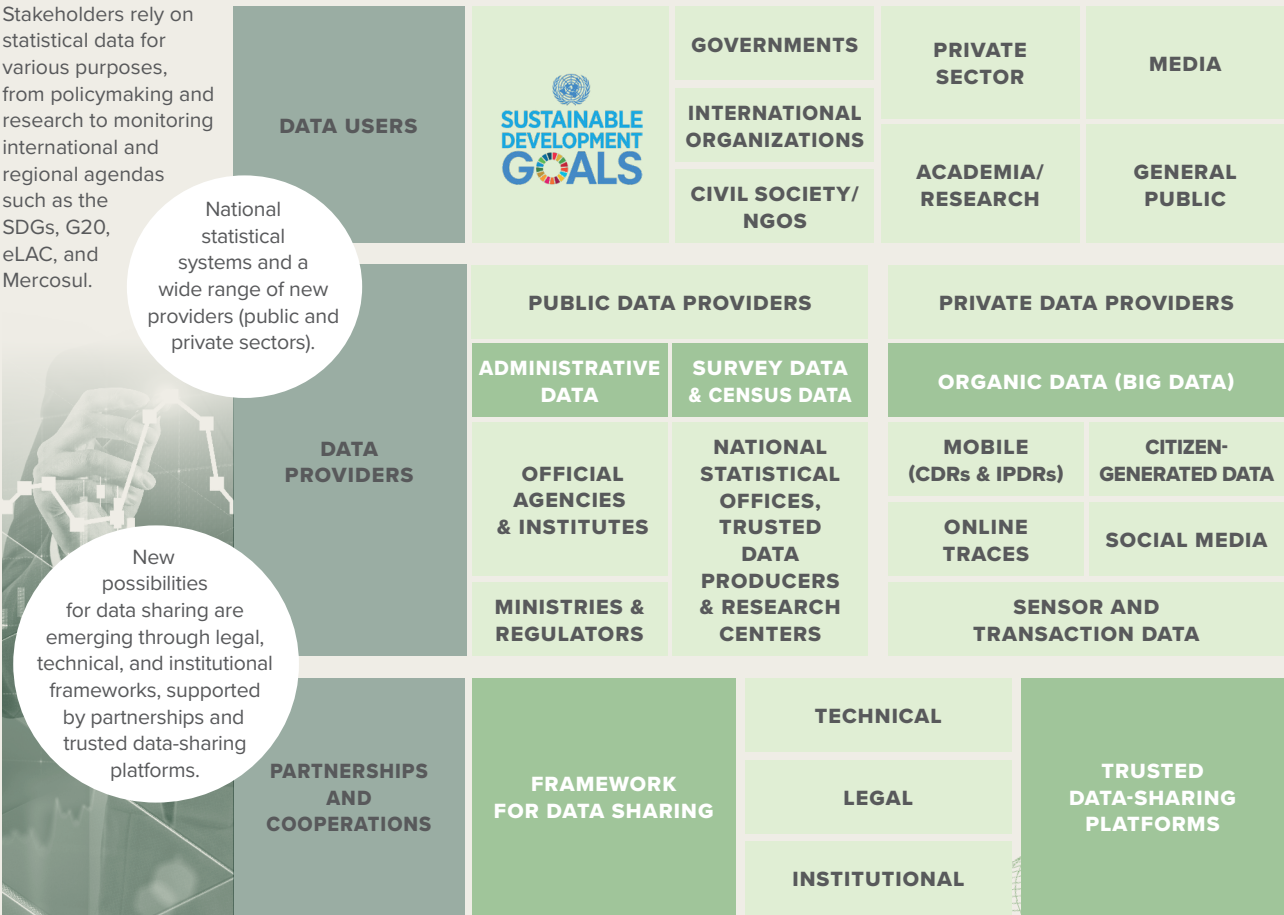I). The Center has made important contributions to the development of the Internet Universality Indicators and Massive Open Online Courses (MOOCs) on 'The Role of ICTs in achieving the Sustainable Development Goals' and on 'Artificial Intelligence and the Rule of Law', which have served Member States globally."

TAWFIK JELASSI
UNESCO Assistant Director-General for Communication and Information

Statistical data production ecosystem

Stakeholders rely on statistical data for various purposes, from policymaking and research to monitoring international and regional agendas such as the SDGs, G20, eLAC, and Mercosul.
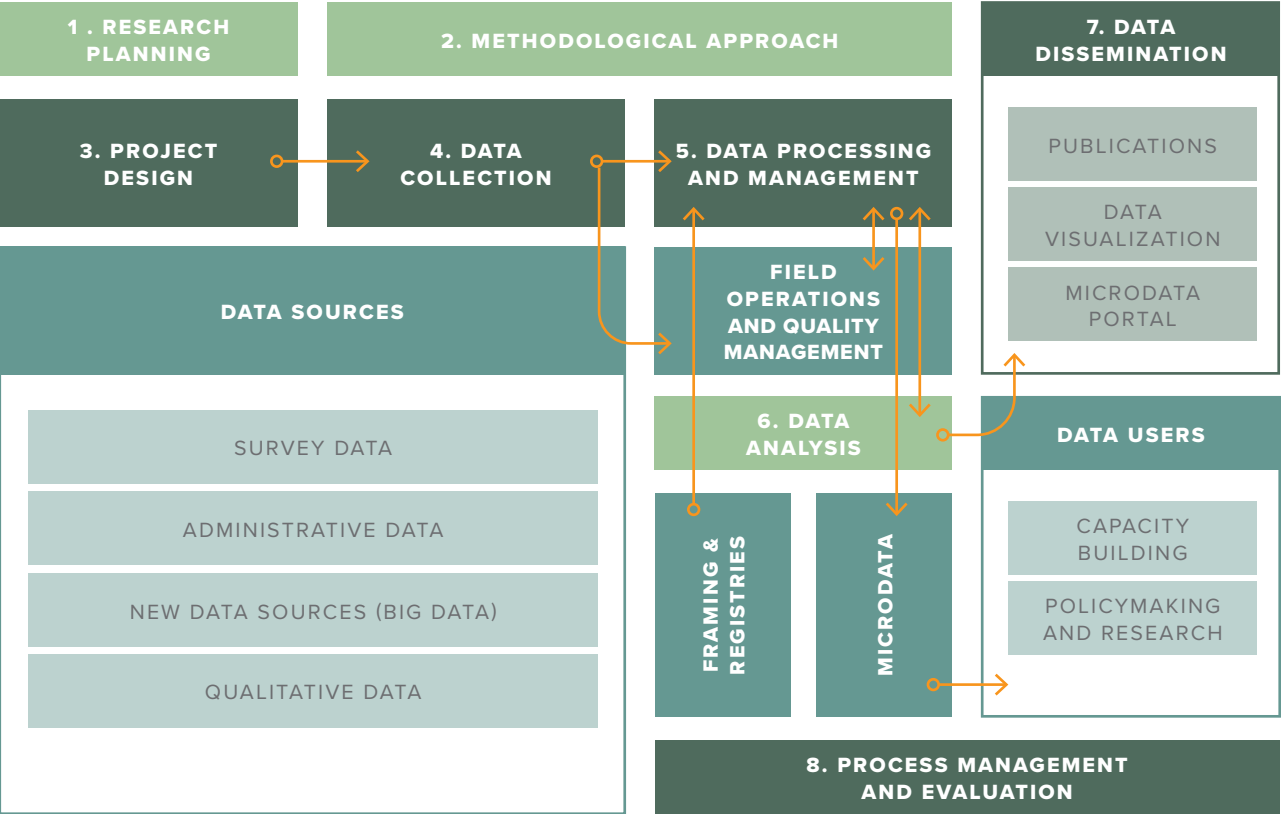
National statistical systems and a wide range of new providers (public and private sectors).

New possibilities for data sharing are emerging through legal, technical, and institutional frameworks, supported by partnerships and trusted data-sharing platforms.

DATA USERS

SUSTAINABLE DEVELOPMENT GOALS

GOVERNMENTS	PRIVATE SECTOR	MEDIA
INTERNATIONAL ORGANIZATIONS	ACADEMIA/ RESEARCH	GENERAL PUBLIC
CIVIL SOCIETY/ NGOS		

DATA PROVIDERS

PUBLIC DATA PROVIDERS

ADMINISTRATIVE DATA	SURVEY DATA & CENSUS DATA
OFFICIAL AGENCIES & INSTITUTES	NATIONAL STATISTICAL OFFICES, TRUSTED DATA PRODUCERS & RESEARCH CENTERS
MINISTRIES & REGULATORS	

PRIVATE DATA PROVIDERS

ORGANIC DATA (BIG DATA)

| MOBILE (CDRs & IPDRs) | CITIZEN-GENERATED DATA |
| ONLINE TRACES | SOCIAL MEDIA |

SENSOR AND TRANSACTION DATA

PARTNERSHIPS AND COOPERATIONS

FRAMEWORK FOR DATA SHARING

- TECHNICAL
- LEGAL
- INSTITUTIONAL

TRUSTED DATA-SHARING PLATFORMS

Methodological approaches and data collection strategies

Alternative data sources such as Big Data and administrative data are increasingly being used by Cetic.br to complement traditional survey data.

APPROACH	QUANTITATIVE		QUALITATIVE
	STRUCTURED (DESIGNED DATA)	**UNSTRUCTURED** (ORGANIC DATA)	
TYPE OF DATA	PROBABILISTIC AND NON-PROBABILISTIC SURVEY DATA	BIG DATA SENSOR & TRANSACTION DATA WEB DATA	CONVENIENCE SAMPLE (QUALITATIVE DATA)
DATA COLLECTION STRATEGIES	STRUCTURED INTERVIEW* SECONDARY DATA USE (DATA SHARING AGREEMENTS)	DATA ANALYTICS TOOLS WEB SCRAPING	COGNITIVE INTERVIEWS FOCUS GROUPS IN-DEPTH INTERVIEWS CASE STUDIES

* Types of interviews being carried out by Cetic.br
CAPI: Computer-assisted personal interviewing
CATI: Computer-assisted telephone interviewing
CASI: Computer-assisted self-interviewing
CAWI: Computer-assisted web interviewing

(Source: Cetic.br, 2021)

Data production process

1. RESEARCH PLANNING	2. METHODOLOGICAL APPROACH	7. DATA DISSEMINATION

3. PROJECT DESIGN	4. DATA COLLECTION	5. DATA PROCESSING AND MANAGEMENT

7. DATA DISSEMINATION
- PUBLICATIONS
- DATA VISUALIZATION
- MICRODATA PORTAL

DATA SOURCES
- SURVEY DATA
- ADMINISTRATIVE DATA
- NEW DATA SOURCES (BIG DATA)
- QUALITATIVE DATA

FIELD OPERATIONS AND QUALITY MANAGEMENT

6. DATA ANALYSIS

FRAMING & REGISTRIES

MICRODATA

DATA USERS
- CAPACITY BUILDING
- POLICYMAKING AND RESEARCH

8. PROCESS MANAGEMENT AND EVALUATION

Phases 1, 2, and 6 - Multistakeholder engagement: This process relies on multistakeholder groups made up of experts from government, international organizations, academia and research institutes, private sectors, and civil society organizations

Phases 3, 4, 5, 7, 8 - GSBPM: Processes aligned to levels 1 and 2 of the GSBPN Version 5.1

Level 1 of GSBPN as defined by United Nations Economic Commission for Europe - UNECE (Version 5.1, January 2010)

1. SPECIFY NEEDS	2. DESIGN	3. BUILD	4. COLLECT
5. PROCESS	6. ANALYZE	7. DISSEMINATE	8. EVALUATE

(Source: https://statswiki.unece.org/display/GSBPM/GSBPM+v5.1)

"When it comes to capacity-building on survey methodology to produce ICT-related statistics, Cetic.br has been doing exemplary work. The National School of Statistical Sciences (ENCE) of the Brazilian Institute of Geography and Statistics (IBGE) has been partnering with Cetic.br to deliver workshops and capacity-building activities aimed at bringing together stakeholders from the data production ecosystem, including policymakers, researchers and representatives from public, private and international organizations to debate data production and use. By regularly carrying out ICT surveys to produce public statistics, Cetic.br has accumulated solid experience and has contributed substantially towards better use of ICT-related statistics for policy design, monitoring and research. In addition to disseminating knowledge about survey methodology, Cetic.br has also become an important voice in international fora discussing the development of methods and indicators to measure the socioeconomic implications of digital technologies in society."

PROFESSOR PEDRO LUIS DO NASCIMENTO SILVA

Former President of the Internation Statistical Institute - ISI
Vice-President of the Society for the Development of Scientific Research - SCIENCE

Cetic.br's ICT Data Production Ecosystem Vision

Digital technologies are revolutionizing societies, driving profound social and economic transformations. Particularly, the data revolution has initiated an unprecedented era of large-scale data generation across various sectors derived from diverse sources, including sensors, imagery datasets, transactions, digital traces from web usage, and administrative records from both governmental and private sectors. These novel data sources – coupled with increased data storage and processing capacities and the increasing adoption of AI – are transforming how statistics are produced and utilized in addressing global challenges.

At the same time, countries face increasing pressure to produce high-quality data in a timely manner. This urgency stems from the need to track progress toward the Sustainable Development Goals (SDGs) as well as regional agendas. By integrating reliable and timely data into policies, governments are better positioned to make informed decisions, driving sustainable development forward.

As a result, the integration of alternative and traditional sources, such as administrative and survey data, has forged a new paradigm, in which private data sources are key. This new data ecosystem demands multistakeholder data governance based on technical standards and appropriate legal and institutional arrangements to support data interoperability and sharing while ensuring privacy and data protection.

Cetic.br envisions a layered approach to the ICT data ecosystem that integrates new data providers and fosters data-sharing opportunities. The uppermost layer of this ecosystem represents multiple data users. The statistical data generated through this approach is designed to significantly enhance policy development and enable monitoring of the SDGs and effective communication strategies that reach a diverse range of stakeholders.

The middle layer of this ecosystem is supported by traditional national statistical systems and administrative data from ministries and regulators, but also incorporates a diverse range of new data sources from the private sector. The combination of varied data sources through proper methodologies and robust statistical protocols creates a powerful approach for producing high-quality and timely data that meets the needs of various data users.

The bottom layer highlights new data-sharing opportunities, supported by partnerships anchored on trusted data platforms and institutional frameworks. These platforms tackle the challenges of integrating multiple datasets by ensuring their secure and trustworthy usage, in strict compliance with personal data protection regulations. Among the opportunities are the integration of Big Data with other sources, including administrative, geospatial, and traditional survey and census data.

> IN THE CONTEXT OF DIGITAL TRANSFORMATION AND THE DATA REVOLUTION, COUNTRIES FACE INCREASING PRESSURE TO PRODUCE HIGH-QUALITY DATA IN A TIMELY MANNER

"In the digitized world, data is continuously generated through smartphones, smart cards, satellites, or mobile apps. These new data sources represent a clear opportunity for the statistical community, and the data community in a broader sense, to innovate and provide better insights with high-frequency and very granular information that previously would not have been possible. In this context, we have established the United Nations Global Platform with regional hubs worldwide working together to educate, collaborate, and develop and test new methods and applications using a variety of data sources. Cetic.br cooperates with the Regional Hub in Brazil, participates in its Advisory Group and Technical Board, and plays an important role in this new data ecosystem, especially by promoting and sharing to knowledge on innovative methodologies for ICT statistics production."

RONALD JANSEN

Assistant Director | Chief, Data Innovation and Capacity Branch
(United Nations Statistics Division (UNSD

About CGI.br

The Brazilian Internet Steering Committee (CGI. br) was created with the purpose of coordinating and integrating all Internet service initiatives in Brazil, as well as promoting technical quality, innovation, and the dissemination of Internet services.

About NIC.br

The Brazilian Network Information Center (NIC.br) was created to implement the decisions and projects of the Brazilian Internet Steering Committee.

About Cetic.br

The Regional Center for Studies on the Development of the Information Society (Cetic.br) is the NIC.br department responsible for the production of indicators and statistics on the availability and use of the Internet in Brazil. In 2012, Cetic.br was approved as a UNESCO Category 2 Center with the mission of monitoring the development of knowledge and information societies in Latin America and Portuguese-speaking countries of Africa.

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