

Session 1: Sources of data and big data analysis

Management of Complex Surveys; DOSM Experience

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Content of Presentation

- **Background**
- **What is Survey?**
- **When to use Survey ?**
- **Factors to be considered**
- **DOSM's Experience**
- **Moving Forward**



WHY WE NEED STATISTICS ?

“An essential component of any development planning is data. Without data, a country’s efforts to plan for future growth and welfare of its people cannot be grounded in reality and therefore may be severely flawed”

Hon. Prof. Peter Anyang’ Nyong’o, Minister for Planning and National Development, Kenya



Street hawkers make up a great portion of informal trade in developing countries. Photo: Gautier Willaume/iStockphoto



Social indicators like primary education and school enrolment rates are helpful to measure the real progress and development of a country. Photos: Hoegen

STATISTICS ???

Numerical
information /data
based on the
process of data
collection,
processing &
analyzing

Methods to
systematically
organize , present,
analyze and
interpret data
effectively

“**National statistical offices** exist to provide information to the general public, Government and the business community in the economic, demographic, social and environmental fields “ Handbook of Statistical Organisation UN

SOURCES

THE SOURCES OF STATISTICS

SURVEYS

CENSUS AND SAMPLE SURVEYS

ADMINISTRATIVE RECORDS

ESTIMATES



WHAT IS SURVEY ?

- Provide a means of measuring population's characteristics, self reported & observed behavior, awareness of programs and needs.
- Repeating surveys at regular intervals can assist in the measurement of changes over time.
- These types on information are invaluable in planning & evaluating Government policies & programs.
- Unlike a **CENSUS**, where all members of population are studied, **SAMPLE SURVEYS** gather information from only a portion of population interest.

WHEN TO USE A SURVEY ?

- First rule is to consider whether the data are available from other data sources or collection methods.
- The option of collecting required using existing administrative records should also be explored. The advantages are in term of cost, time and the absence of respondent burden.

FACTORS TO BE CONSIDERED

1. Practicality; can the information be collected cost effectively & accurately via survey

2. Resources; availability & need

3. Timing; to ensure that data of sufficiently quality can be collected & analysed

4. Survey Requirements

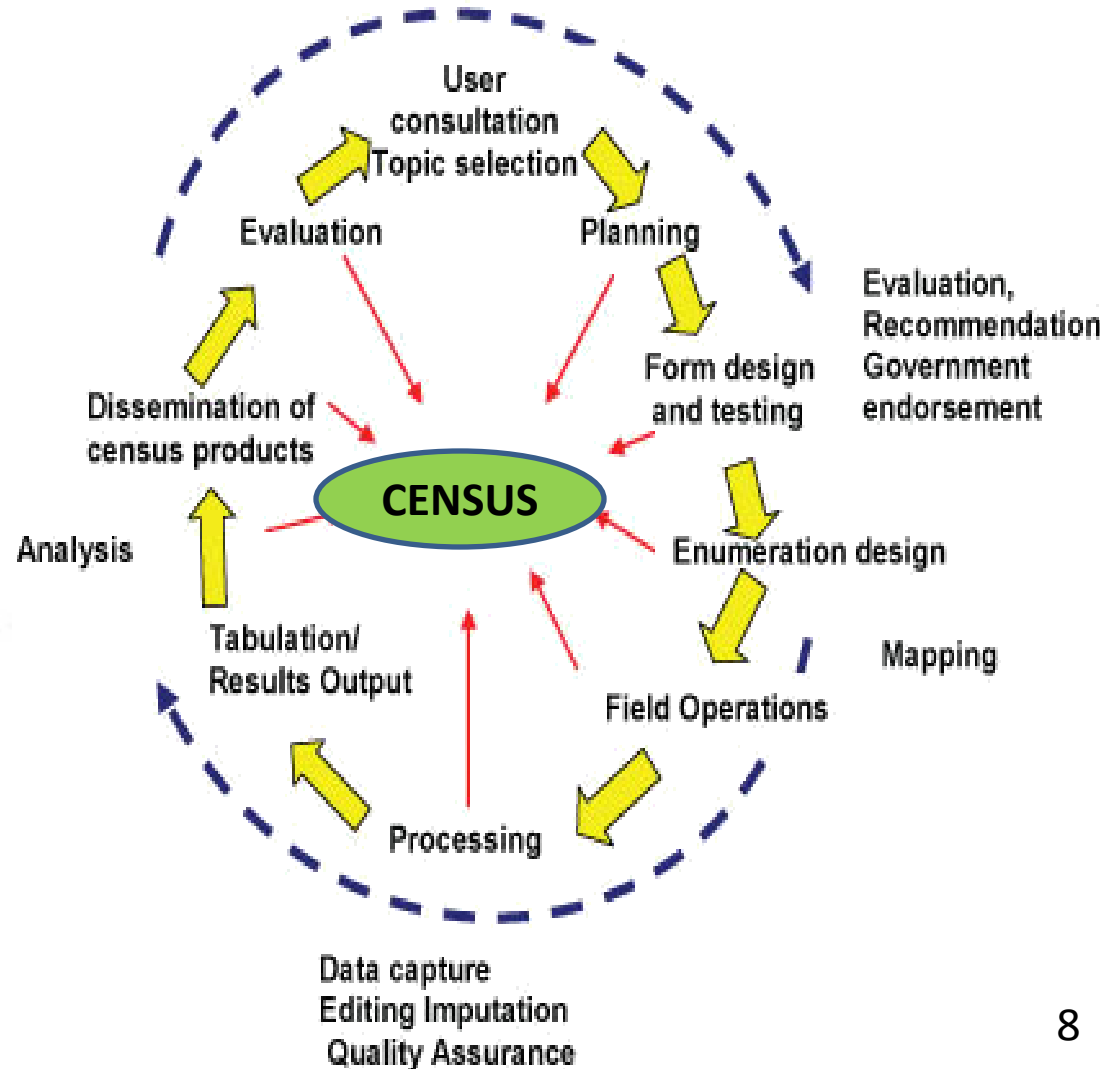
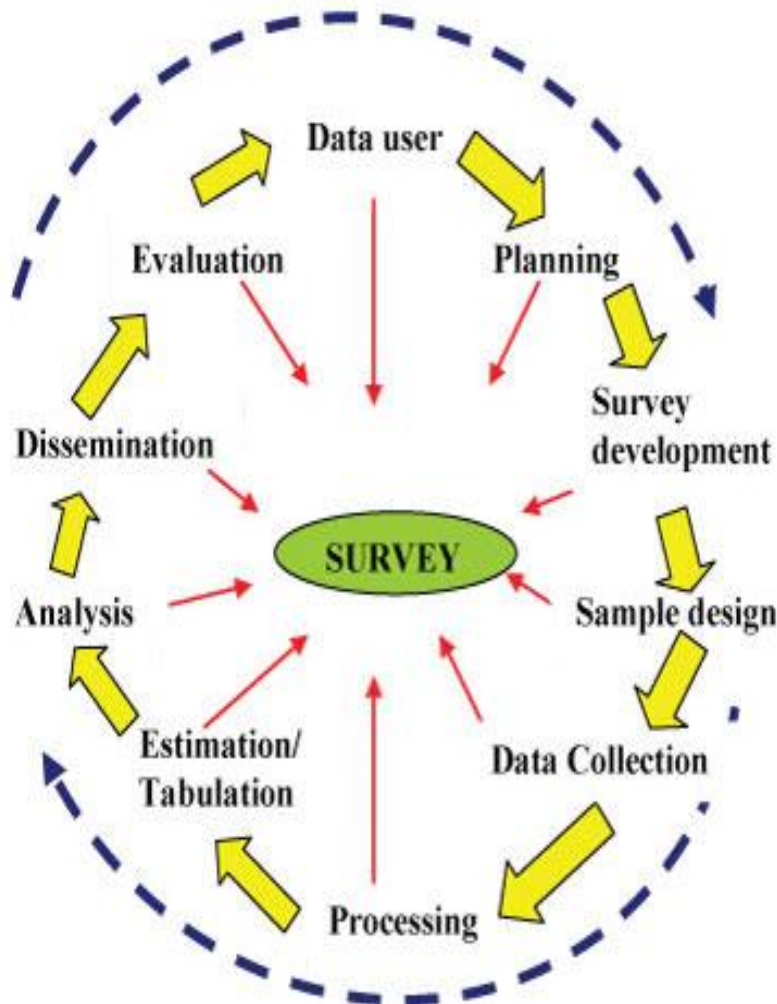
8. Ethical consideration; data is treated confidential, such anonymity is preserved

7. Legislative Power

6. Frequency

5. Accuracy

UNESCAP ILLUSTRATES SURVEY & CENSUS CYCLE



DOSM'S EXPERIENCE



The Department of Statistics Malaysia (DOSM) was established in 1949 under the provisions of the Statistics Ordinance 1949 - Bureau of Statistics. In 1965, the name of Bureau of Statistics was changed to the Department of Statistics, Malaysia, under the provisions of the Statistics Act 1965 (Revised 1989).



The function as stipulated in the act:

To collect and interpret statistics for the purpose of formulation or implementation of Government policies in whatever fields as needed by the Government or for fulfilling the requirements of trade, commerce, industry, agriculture or others.



Malaysia Statistical System:

A **centralized system** and at the same time allows other government agencies to collect statistics to fulfill their own needs

DEPARTMENT PRODUCTS

A. CENSUS/SURVEY/COMPILATION	COUNT
I. ECONOMIC	101
II. SOCIAL/DEMOGRAPHY	70
III. GENERAL	9
B. SURVEY FRAMEWORK	
I. Economic (Active Establishments)	1,025,845
II. Household(Housing)	7,479,385

SOURCES AND SCOPE OF DATA

PRIMARY

- Social & Demographic- PTB, HIS, Migration, Informal Sector, Population & Housing Census
- Economic
- Manufacturing, Services, Construction, Mining & Quarrying and Balance of Payments

SECONDARY

- International Trade- Royal Malaysia Customs Department
- Fertility & Mortality – National Registration Department of Malaysia
- Education – Ministry of Education Malaysia
- Health - Ministry of Health Malaysia

SCOPE

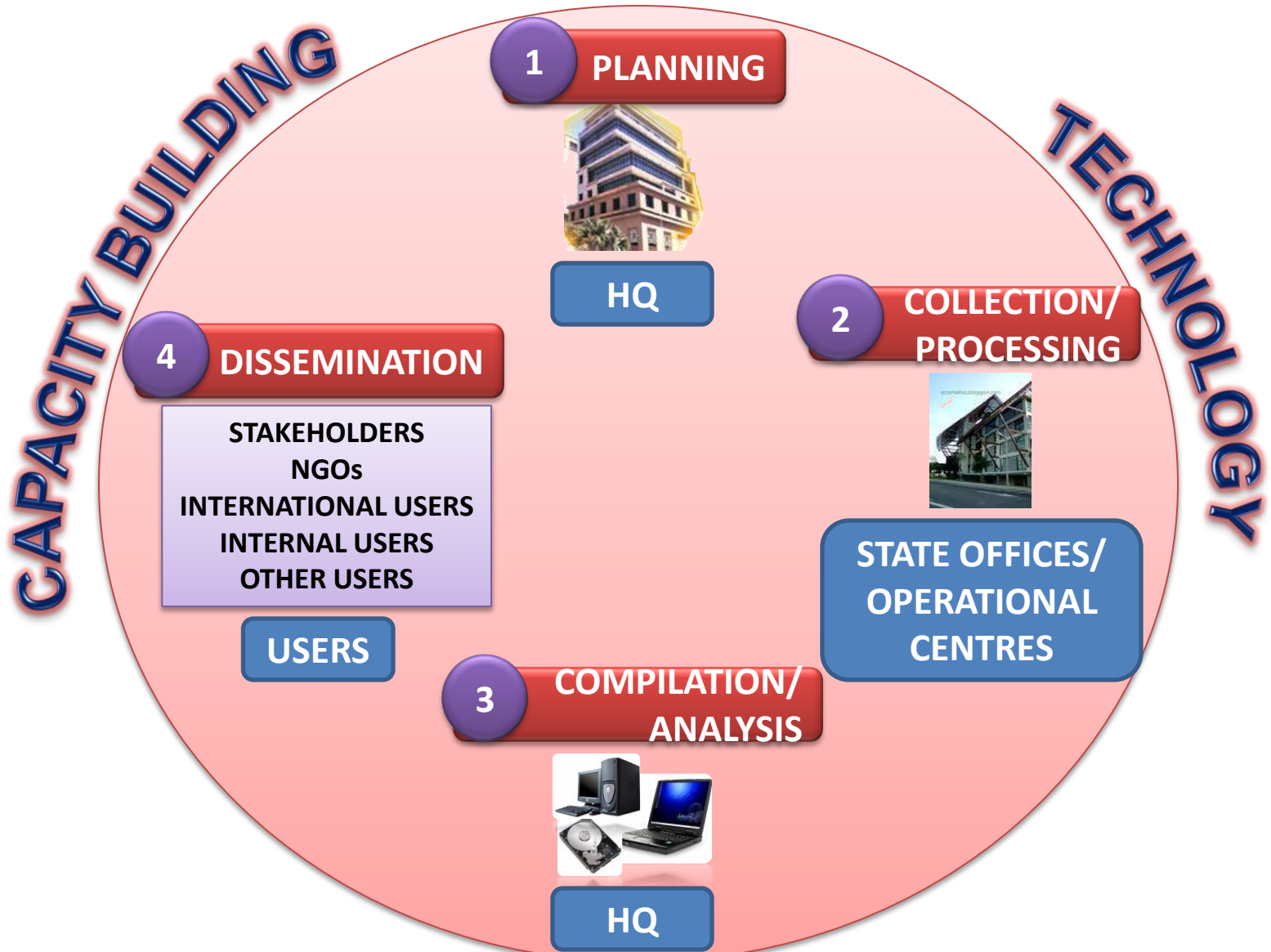
Economy

- Agriculture
- Mining and Quarrying
- Manufacturing
- Construction
- Services
- National Accounts
- Balance of Payments
- Economic Indicators
- External Trade
- Small & Medium Enterprises

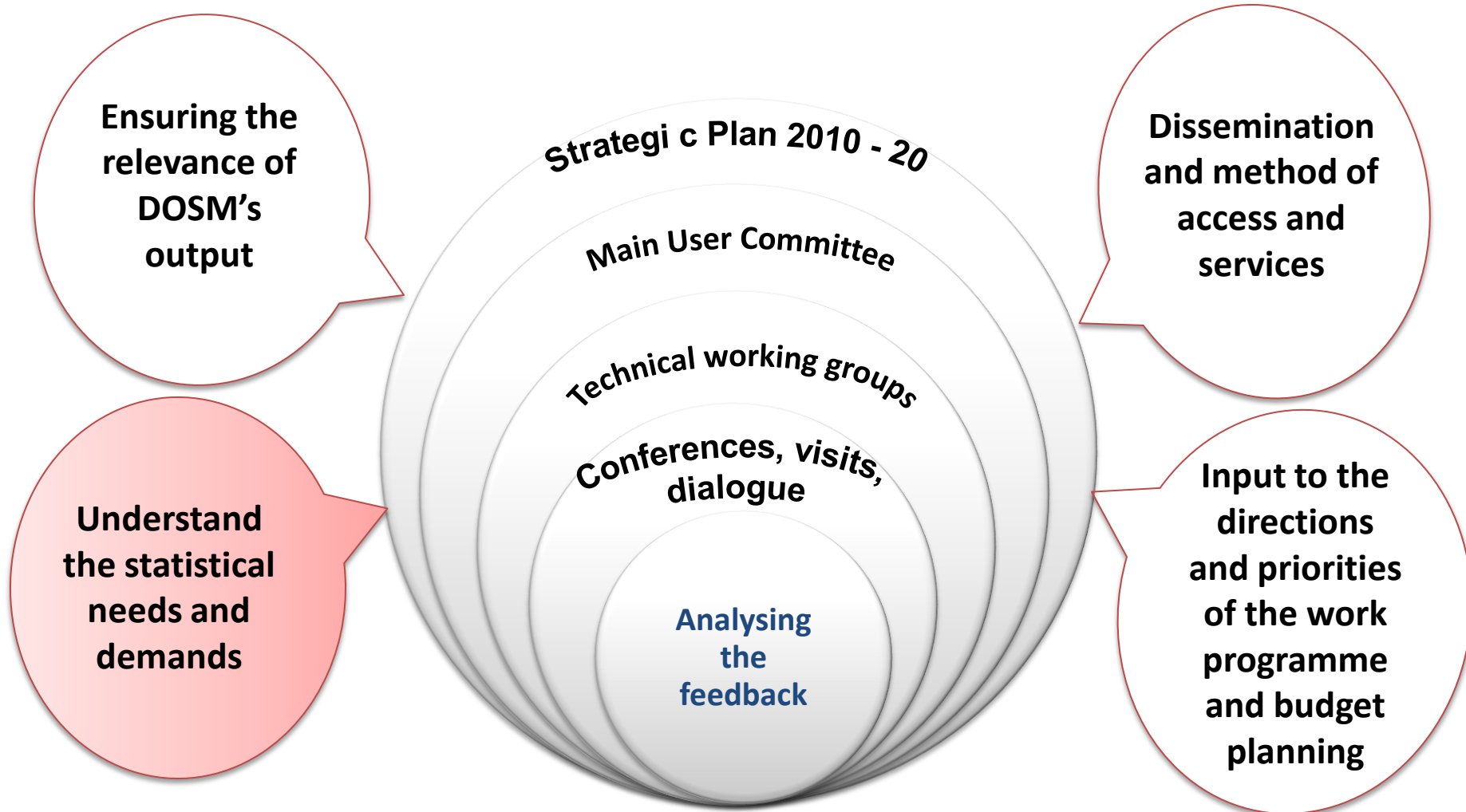
Social

- Population
- Labour Force/Migration/Wages & Salary/Informal
- Household Income
- Household Expenditure
- Consumer Prices
- Producer Prices
- Environment
- Health
- Education
- Housing
- Others Social Statistic

MANAGING SURVEY

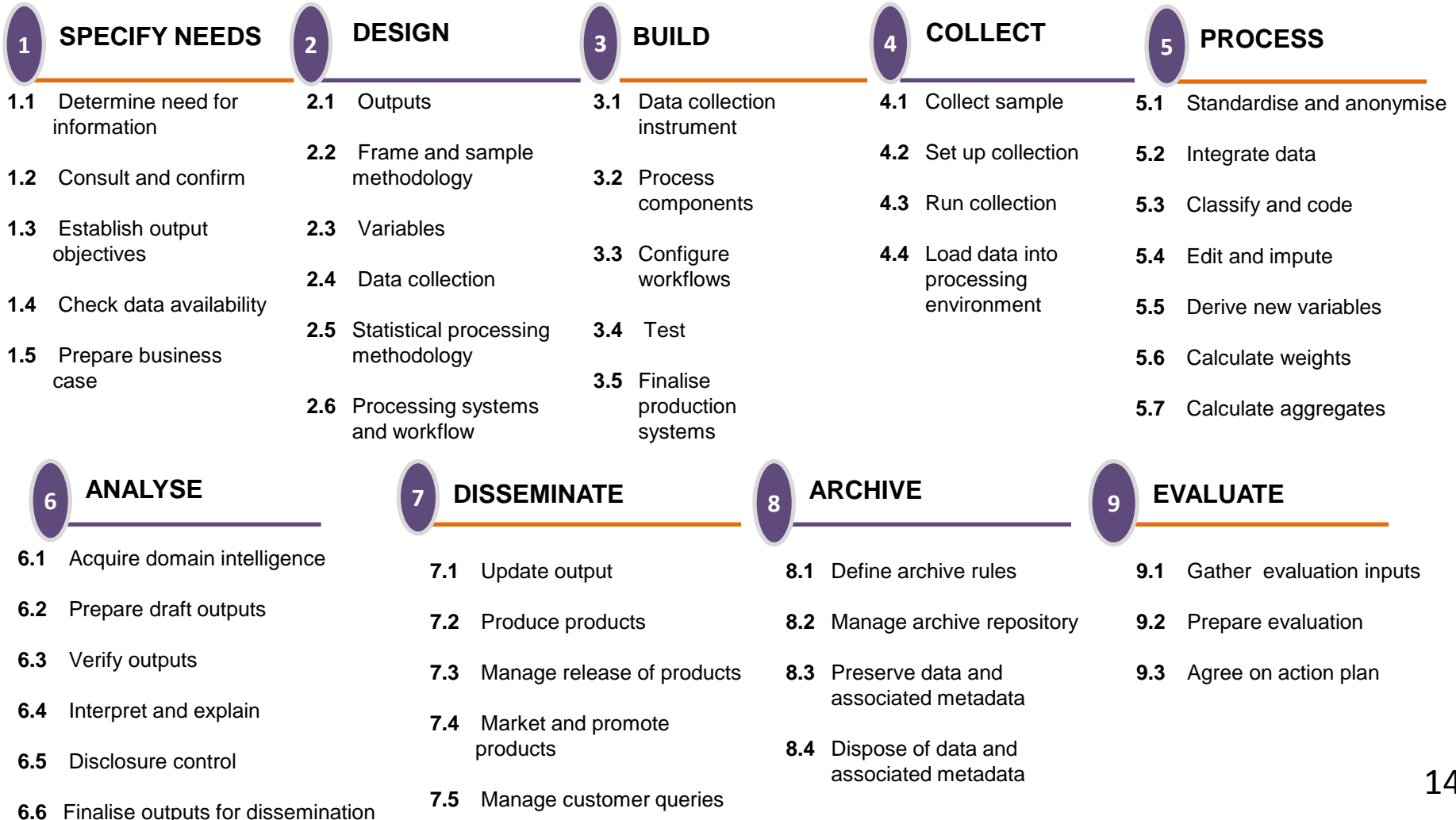


DATA COMMUNICATION



STATISTIC ACTIVITIES FRAMEWORK

GENERIC STATISTICAL BUSINESS PROCESS MODEL (GSBPM)



ADOPTION OF INTERNATIONAL STANDARDS

**NATIONAL &
INTERNATIONAL
DEVELOPMENT
PLANNING**

Comparability of statistics regionally and internationally

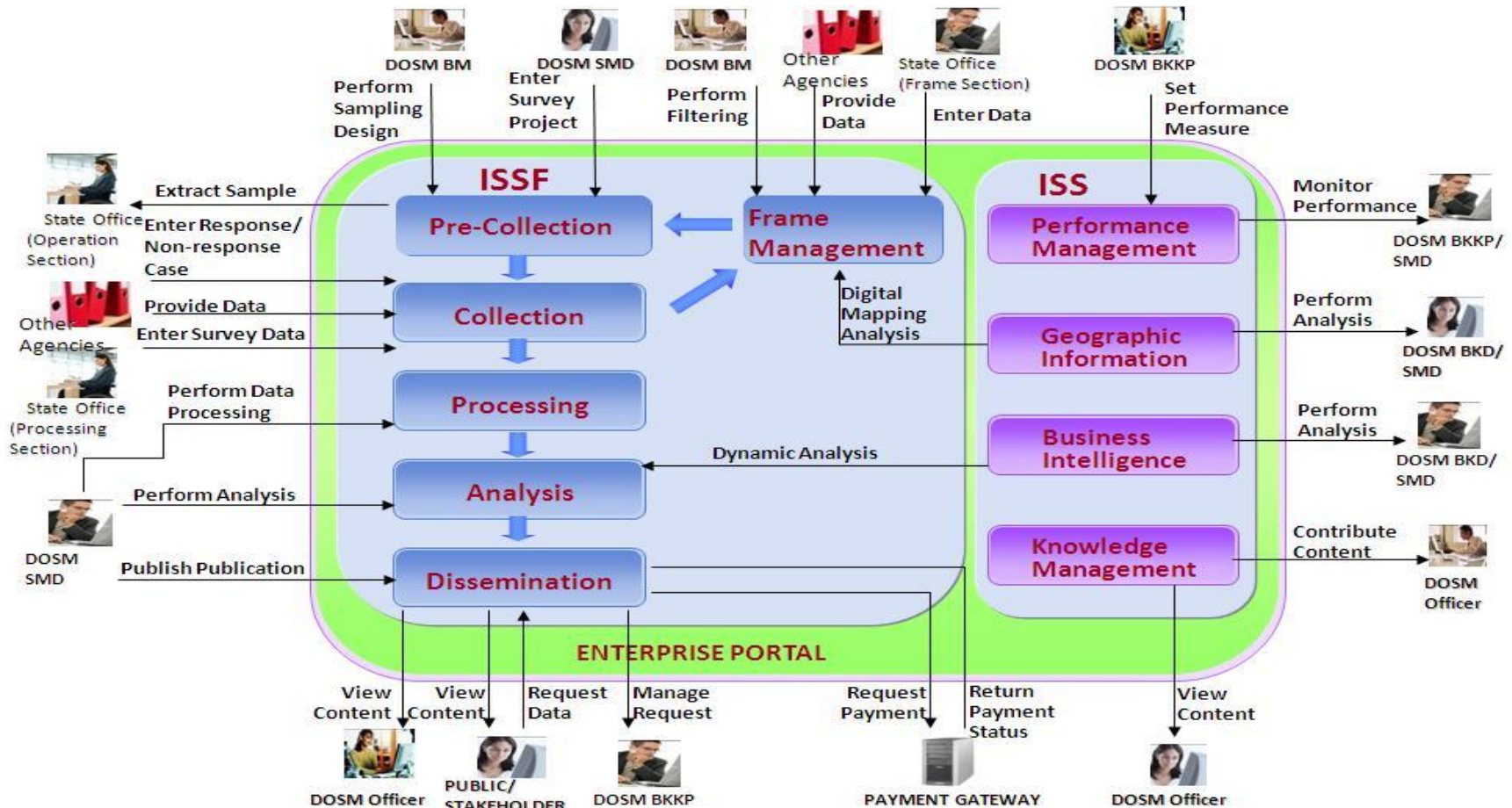
**INTERNATIONAL
STANDARDS**

Adoption/Adaptation of international manuals (42 manuals), codes and classifications to ensure standardization

**INTER AGENCY
TECHNICAL COMMITTEE**

- **Committee chaired by the Chief Statistician**
- **Focus on the standardization of codes, classifications and concepts in statistics among relevant government agencies**
- **Frequency of meeting –quarterly**

INTEGRATED STATISTICAL SYSTEM FRAMEWORK

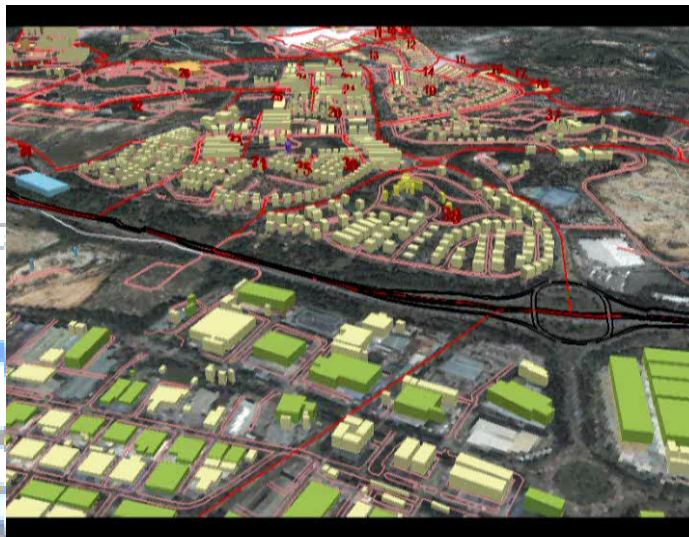


- Foundation are driven by System of National Account
- Inline with Generic Statistics Business Process Model (GSBPM)

STATISTICAL FRAME MANAGEMENT

1. Household Frame

2. Business Frame



Its been updated annually through the Agency Records, Surveys Feedback and Screening Survey. The biggest updating exercises are Economic & Population Census.

Completeness, consistency, reliability and up to date frame are important as it is going to be used as sample selection, stratification, imputation and estimation

POLICY ON QUALITY

DOSM is committed to provide data and statistical services which are user oriented, timely and of quality through the use of up-to-date and relevant statistical techniques and technology and by continuously improving the knowledge and skills of the staff at various levels.

g-NQAF

MS ISO

5s

9001:2008

INOVATION

National Enterprise Wide Statistical System (NEWSS)

- **Integrated Statistical System**

Modernisation in Data Collection & Processing

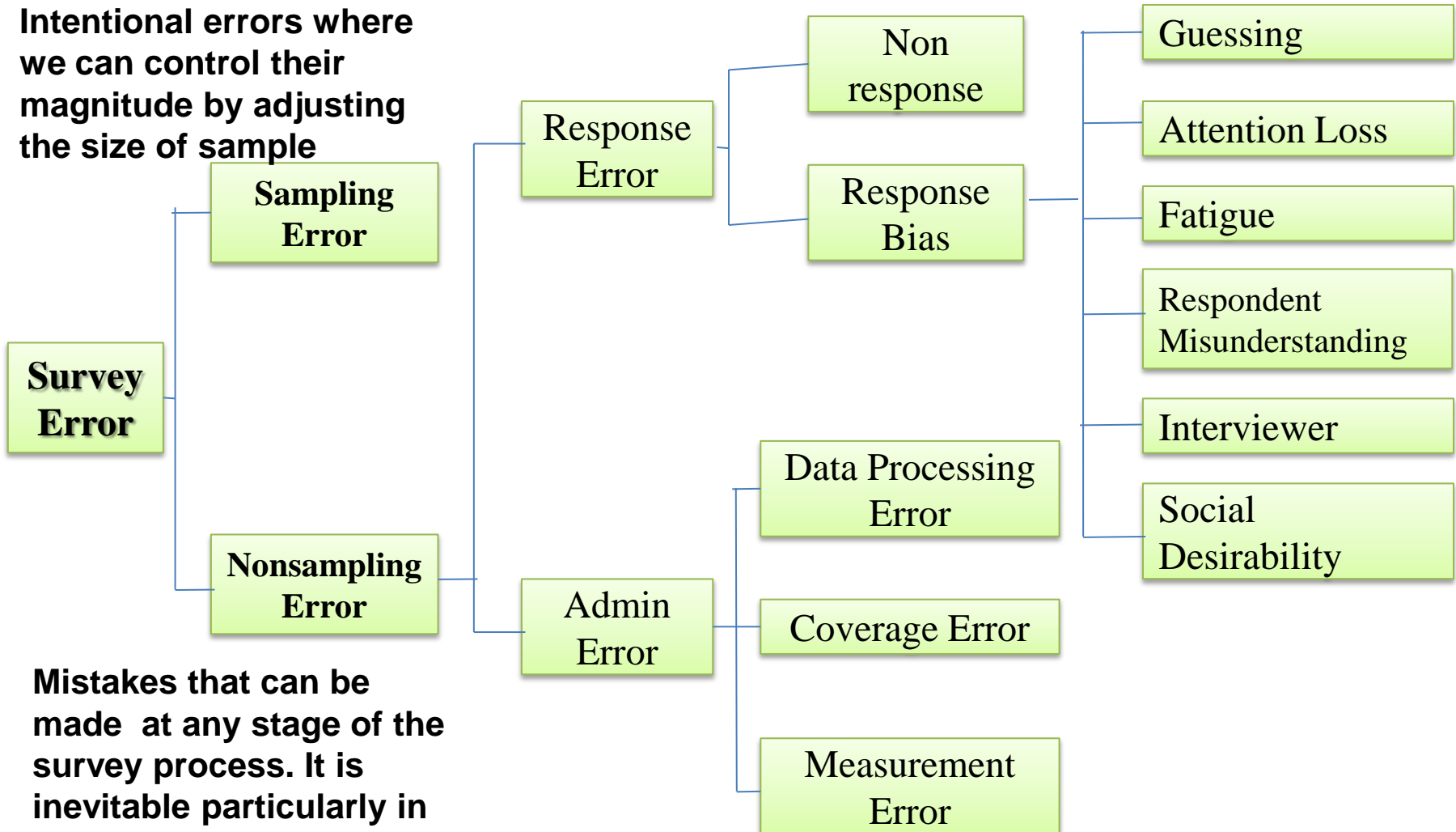
- **e-Survey/CATI/PDA/CAPI/ICR**

Modernisation in Communicating Statistics

- **e-Services**
- **Interactive Database**
- **Social Media**

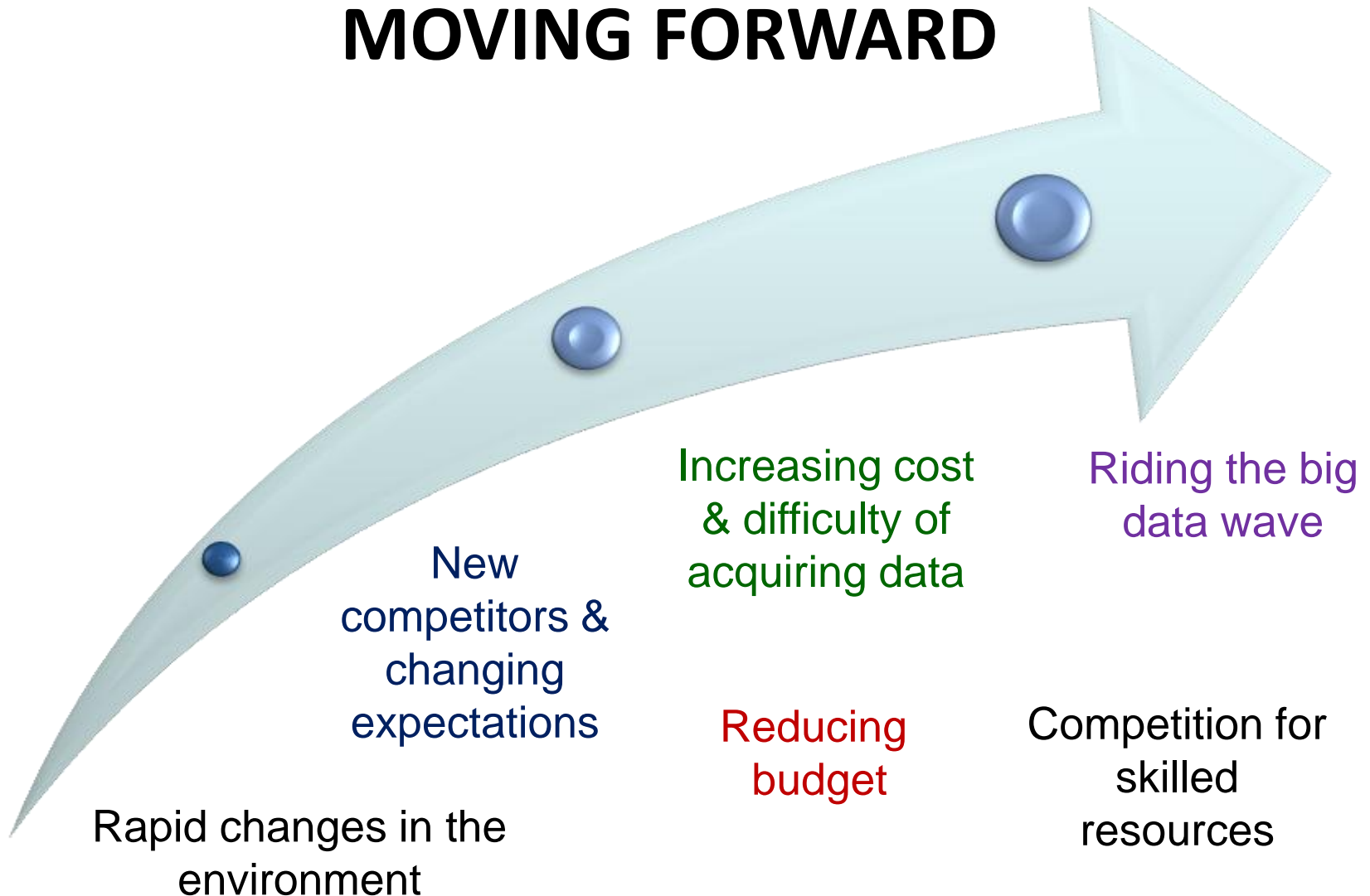
AVOID SURVEY ERROR

Intentional errors where we can control their magnitude by adjusting the size of sample



Mistakes that can be made at any stage of the survey process. It is inevitable particularly in large scale data collection

MOVING FORWARD

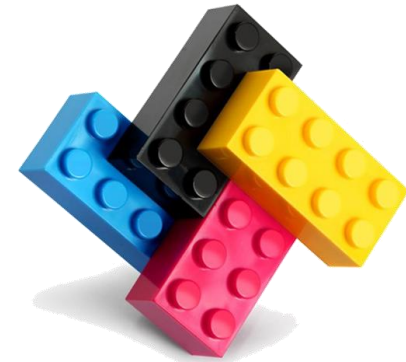


STANDARDS-BASED MODERNISATION

Quality Management / Metadata Management								
1 Specify Needs	2 Design	3 Build	4 Collect	5 Process	6 Analyse	7 Disseminate	8 Archive	9 Evaluate
1.1 Determine needs for information	2.1 Design outputs	3.1 Build data collection instrument	4.1 Select sample	5.1 Integrate data	6.1 Prepare draft outputs	7.1 Update output systems	8.1 Define archive rules	9.1 Gather evaluation inputs
1.2 Consult & confirm needs	2.2 Design variable descriptions	3.2 Build or enhance process components	4.2 Set up collection	5.2 Classify & code	6.2 Validate outputs	7.2 Produce dissemination products	8.2 Manage archive repository	9.2 Conduct evaluation
1.3 Establish output objectives	2.3 Design data collection methodology	3.3 Configure workflows	4.3 Run collection	5.3 Review, Validate & edit	6.3 Scrutinize & explain	7.3 Manage release of dissemination products	8.3 Preserve data and associated metadata	9.3 Agree action plan
1.4 Identify concepts	2.4 Design frame & sample methodology	3.4 Test production system	4.4 Finalize collection	5.4 Inputs	6.4 Apply disclosure control	7.4 Promote dissemination products	8.4 Dispose of data & associated metadata	
1.5 Check data availability	2.5 Design statistical processing methodology	3.5 Test statistical business process		5.5 Derive new variables & statistical units	6.5 Finalize outputs			
1.6 Prepare business case	2.6 Design production systems & workflow	3.6 Finalize production system		5.6 Calculate weights		7.5 Manage user support		
				5.7 Calculate aggregates				
				5.8 Finalize data files				



Frameworks and
Standards
For
Statistical
Modernization



**Fostering Interoperability in Official Statistics:
Common Statistical Production Architecture**

TERIMA KASIH
THANK YOU