Statistics Colloquia 2015
Department of Statistics Malaysia

Applying the Generic Statistical Business Process Model (GSBPM) in the National Enterprise-Wide Statistical Systems (NEWSS)

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CONTENT

1. Introduction to GSBPM
2. Importance of GSBPM
3. Key features of GSBPM
4. Introduction to NEWSS
5. Mapping of GSBPM to NEWSS
6. Discoveries
7. Way Forward

INTRODUCING THE GSBPM

Describes and defines the set of business processes needed to produce official statistics. It provides a standard framework and harmonised terminology to help statistical organisations to modernise their statistical production processes, as well as to share methods and components.

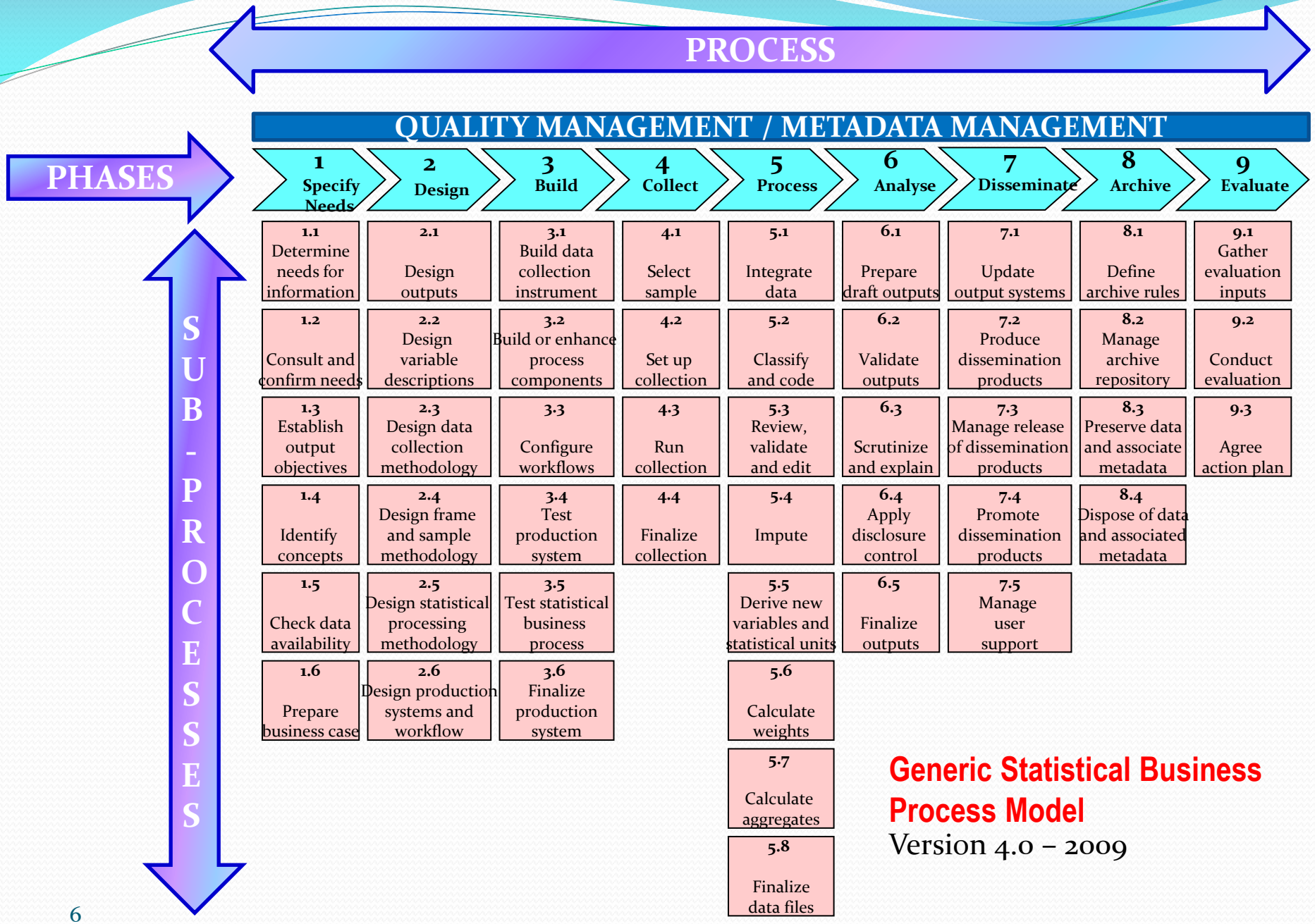
INTRODUCING THE GSBPM

- Intended to apply to all activities undertaken by producers of official statistics, at both national and international levels, which result in data outputs.

- Designed to be independent of the data source, so it can be used for description and quality assessment of processes based on surveys, censuses, administrative records and other non-statistical or mixed sources.

WHY DO WE NEED GSBPM?

i. To define and describe statistical processes in a coherent way
ii. To compare and benchmark processes within and between organisations
iii. To make better decisions on production systems and organisation of resources
iv. To standardize process terminology



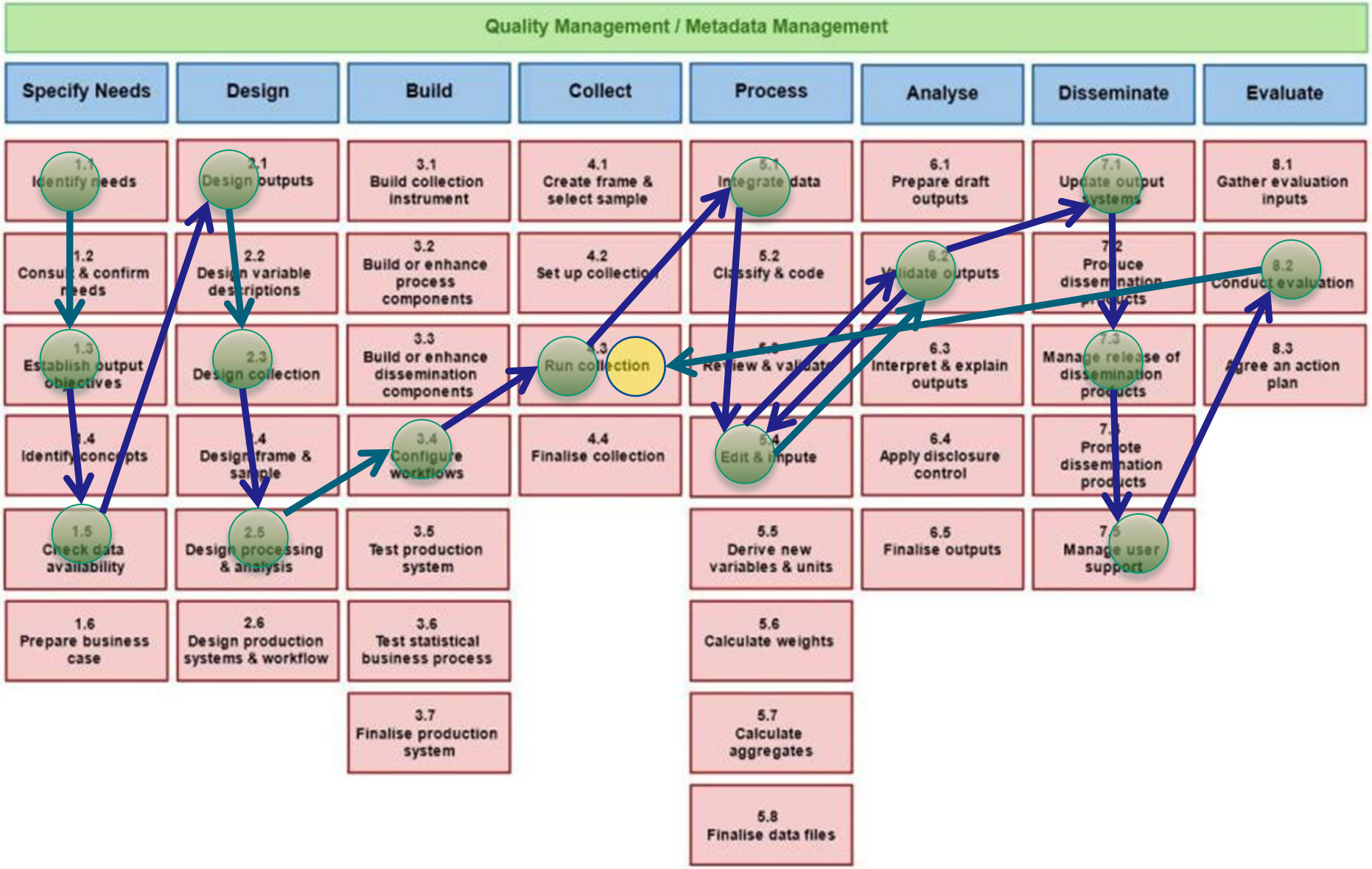
Generic Statistical Business Process Model

Version 4.0 – 2009

KEY FEATURES

i. Not a linear model
ii. Sub-processes do not have to be followed in strict order
iii. It is a matrix, through which there are many possible paths
iv. Some iterations of a regular process may skip certain sub-processes

EXAMPLE OF POSSIBLE PATH



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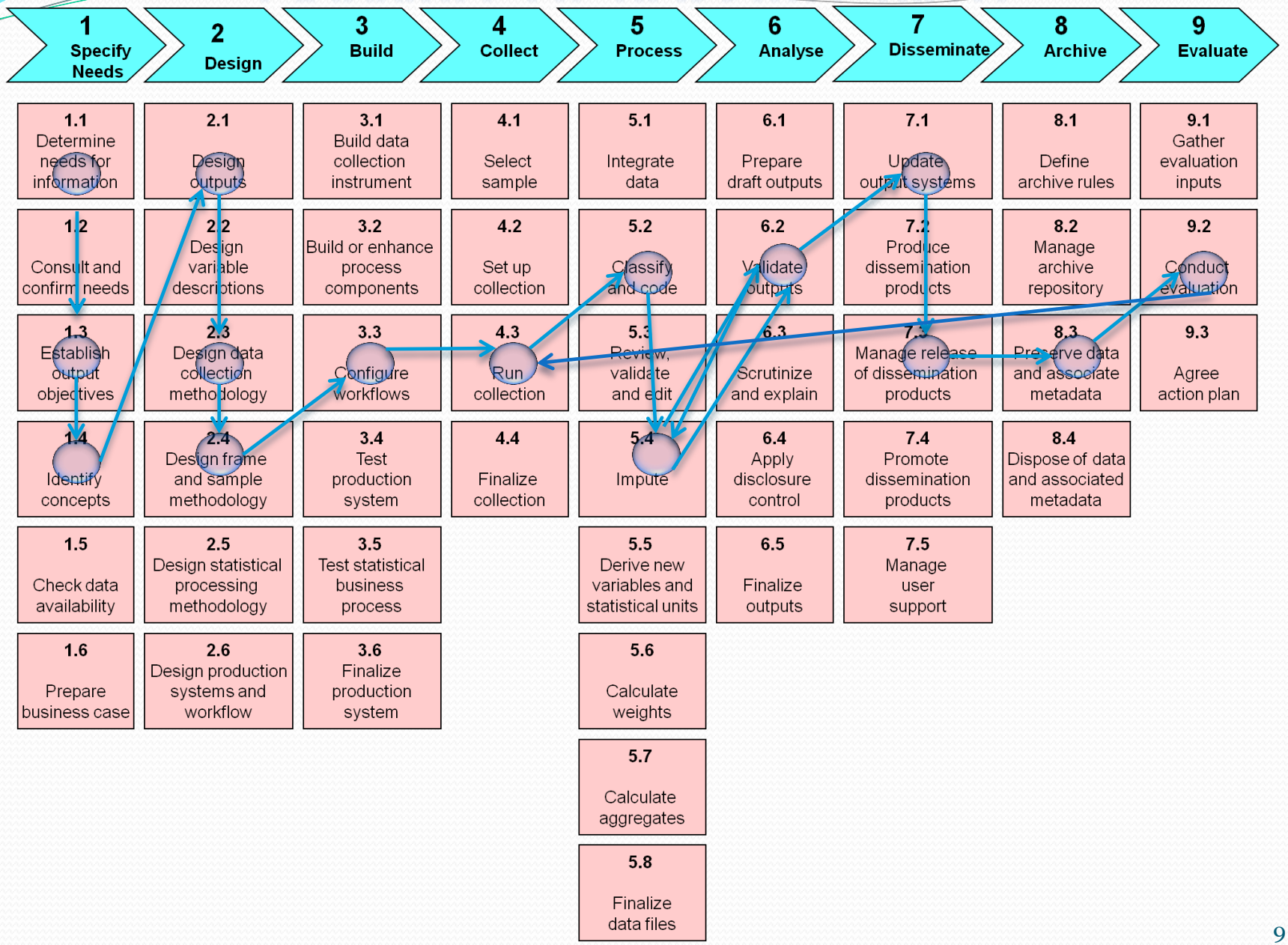
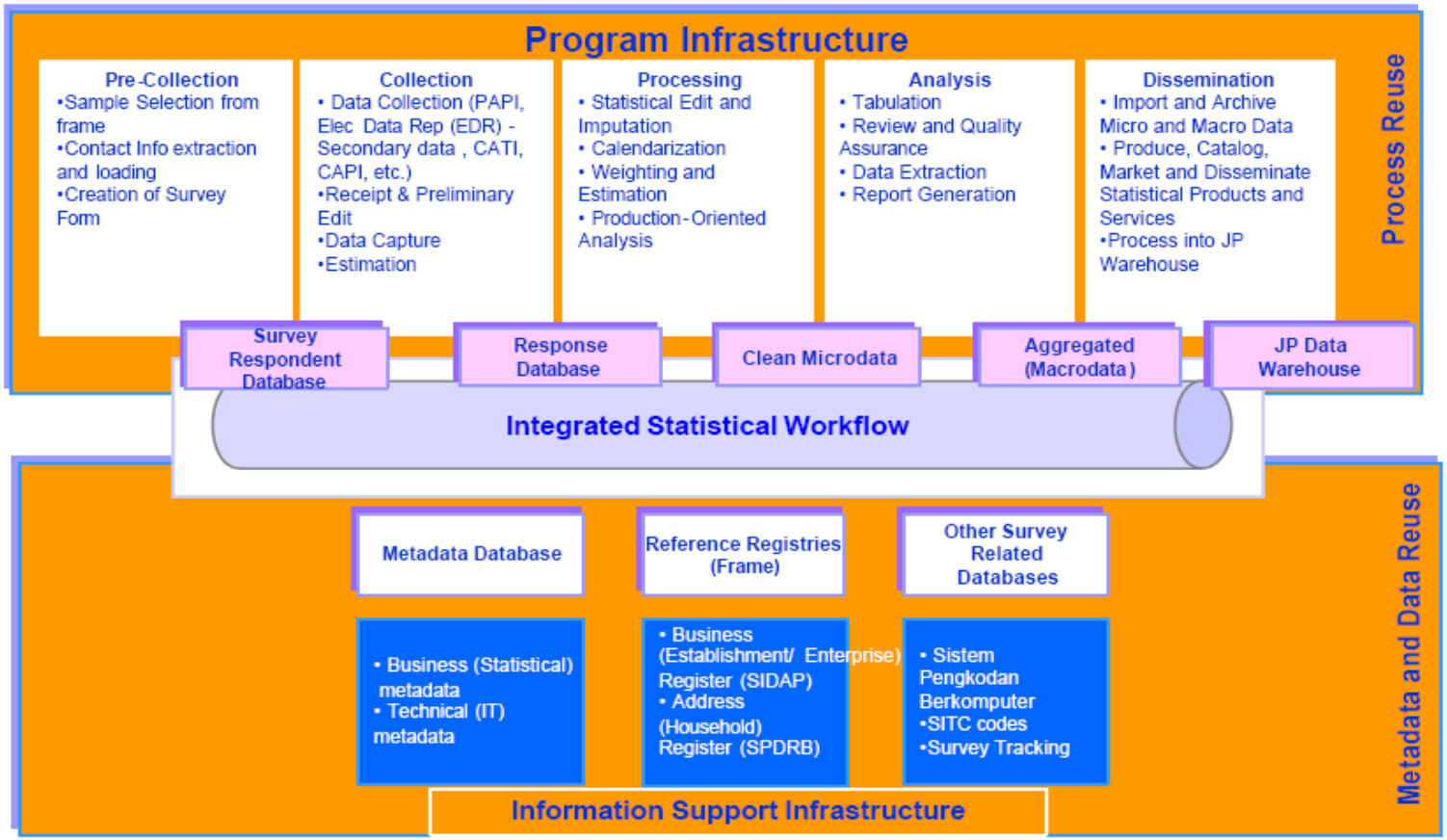


INTRODUCING THE NEWSS

- An Integrated Statistical System Framework for common systems across DOSM.
- The framework of the system is in accordance to the phases and sub-processes in the GSBPM.
- The first phase of development started on 1st August 2008 and officially delivered to DOSM on 31st March 2010.
- Currently, the development has been expanded to Phase III.

NEWSS VISION

Integrated Statistical Systems Framework



- Ensure the development of application produces quality statistic using standard mechanism, that shall increase efficiency and shorten the process of developing the census/surveys on the same platform.

Source : BPSM

Integrated Statistical System Framework For Census & Surveys
Efficiently monitor and manage Census & Surveys
NEWSS OBJECTIVES
Extend the dissemination of Statistical Information
Improve the timeliness and reliability of the Statistical Information

NEWSS INTERFACE

National Enterprise-Wide Statistical Systems

Log Keluar

ISSF | Business Intelligence | GIS | Penilaian | Pengurusan Dokumen | KMS

Menu

- Laman Utama
- Direktori Saya
- Profil Banci / Penyiasatan
- Pra Pengumpulan Data
- Pengumpulan Data
- Prosesan Data
- Penyebaran
- Pensampelan
- Rangka Pertubuhan / Enterpris
- Rangka Isi Rumah
- Laporan
- Pengurusan Pengetahuan
- Pentadbiran
- Kod dan Klasifikasi
- Rujukan Banci / Penyiasatan
  - Direktori Data
  - Metadata

Selamat Datang ke Sistem NEWSS

Direktori Saya

Tugasan	0	sehingga login terakhir
	16	belum dilaksanakan
Tugasan Kumpulan	6	sehingga login terakhir
	127	belum dilaksanakan
Kandungan	0	sehingga login terakhir

Penyiasatan Untuk Tahun Terkini

Lewat	0
Dalam Proses	15
Selesai	0
Telah Dirancang	0
Jumlah	15

1 Pra-Pengumpulan Data

Menjalankan opsyen sampel, saiz dan pemilihan sampel serta penyelarasan parameter dengan menggunakan algoritma pemilihan sampel.

2 Pengumpulan Data

Pengagihan sampel. Menjalankan kerja pungutan data.

3 Prosesan Data

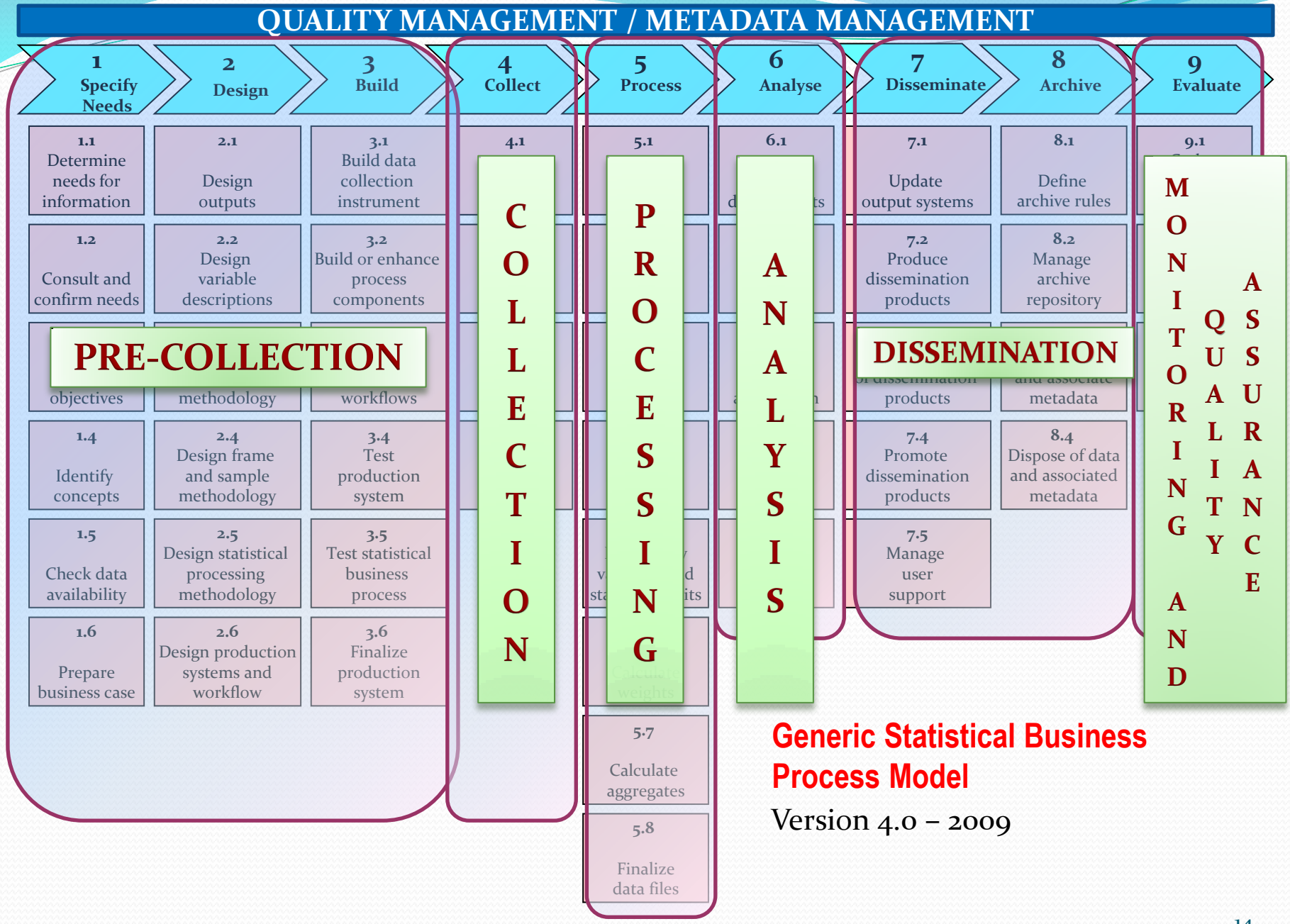
Menjalankan tangkapan data secara dalam atau luar talian serta memantau maklumat terkini dari agensi yang lain untuk merangka data.

4 Analisis & Laporan

Persoalan dan menjalankan analisa keatas keputusan yang diperoleh dengan menggunakan beberapa laporan dan peralatan menganalisa serta peta.

5 Penyebaran

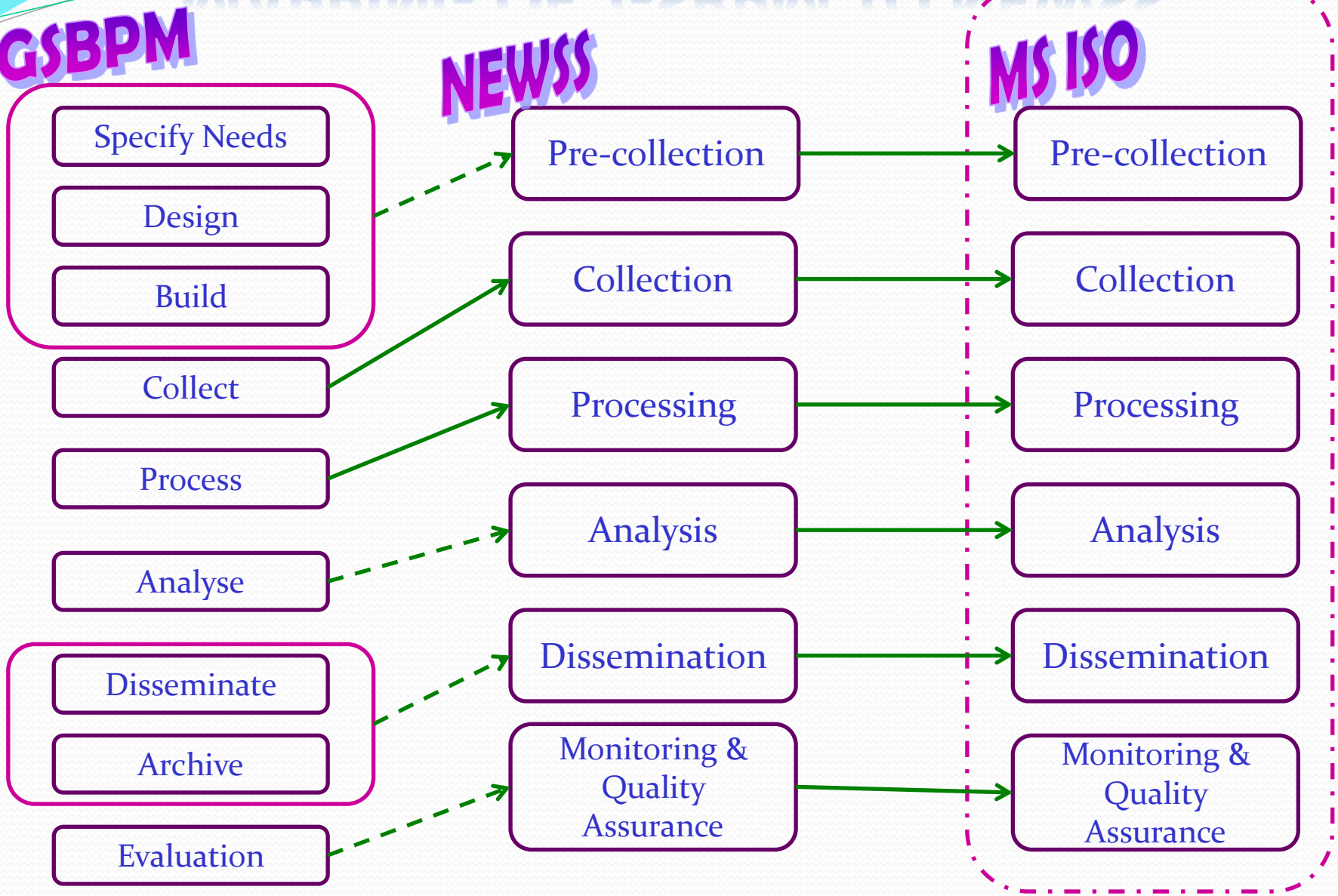
Membuat pertanyaan dan mengemaskini maklumat untuk tujuan penyebaran dengan menerbitkan laporan dengan pantas.



Generic Statistical Business Process Model

Version 4.0 – 2009

MAPPING OF GSBPM TO NEWSS



DISCOVERIES

#	ITEM
1	Few phases of the GSBPM not included in the NEWSS i. Specify needs ii. Design iii. Build
2	Phases of the GSBPM fully applied in the NEWSS i. Collect ii. Process
3	Phases of the GSBPM partly applied in the NEWSS i. Analyse ii. Disseminate iii. Archive iv. Evaluate
4	Dissemination – further strengthened with the development of data warehouse, StatsDW
5	Full application of GSBPM will give great impact to the metadata management of DOSM

WAY FOWARD

1. Metadata management – to add description for each sub-process for each survey / census

2. Application of GSBPM in the improvement project or review of surveys or statistical process.

3. Strengthening the quality and metadata management of DOSM through the development of a system which capable to manage metadata , based on GSBPM.

4. Needs to define and determine archive rules/procedures for statistical data and metadata resulting from a statistical business process.

EXAMPLE 1

- Australian project to improve production of prices data
- Identified activities within GSBPM sub-processes
- Some phases “out of scope”

Prices System Improvement Project

Australian Bureau of Statistics

Prices concordance of high level 'to-be' business processes to the GSBPM v 4.0

version 0.9 - 20 January 2011

Quality Management / Metadata Management

1 Specify Needs

- 1.1 Determine needs for information
- 1.2 Consult and confirm needs
- 1.3 Establish output objectives
- 1.4 Identify concepts
- 1.5 Check data availability
- 1.6 Prepare business case

2 Design

2.1 Design outputs
- Design Price Index characteristics
- Design Price Index classification/s (structures)
- Design weighting patterns
- Design Price Index measures
- Design Price Index products

2.2 Design variable descriptions
- Design variables collected via data collection instrument
- Design derived variables and transformation formula

2.3 Design data collection methodology
- Determine suitable methods for data collection
- Design data collection instrument
- Design formal agreements to collect data
- Design provider management method

2.4 Design frame and sample methodology
- Desing survey frame methodology
- Design survey sample methodology

2.5 Design statistical processing methodology
- Design statistical method for
  - integrating data
  - validating data
  - imputing data
  - calculating aggregates
  - micro editing
  - macro editing
  - classifying and coding data
  - calculating weights
  - finalising data

2.6 Design production systems and workflow
- Determine the work flows from data collection to dissemination of outputs
- Define criteria to assess the quality of the production systems and work flows
- Design systems /work flows integration, migration and roll forward processes
- Determine fitness for purpose of existing production systems and work flows
- Undertake gap analysis to determine re-use of existing systems and work flows

3 Build

- 3.1 Build data collection instrument
- 3.2 Build or enhance process components
- 3.3 Configure work flows
- 3.4 Test production system
- 3.5 Test statistical business process
- 3.6 Finalise production system

4 Collect

4.1 Select sample
- Establish frame according to frame design
- Select sample according to sample design
- Establish maintenance procedures for frame and sample
- Maintain frame and sample

4.2 Set up collection
- Investigate and establish collection strategy for sample and administrative data
- Establish training regime for staff to enable data collection
- Check data collection tools, technology and processes are available and ready for use
- Establish and review security procedures for data collection
- Prepare data collection systems for collection and receipt of data

4.3 Run collection
- Establish provider contact procedures and SLA's
- Collect data according to schedules
- Follow up with providers for data
- Record provider contact information and response rates
- Record and resolve queries by providers and data collection staff

4.4 Finalise collection
- Convert data for data loading
- Upload data into processing systems
- Load metadata into metadata storage systems
- Archive paper forms, and administrative data sets

5 Process

5.1 Integrate data
- Match data records
- Prioritise data records
- Eliminate duplicate data records
- Anonymise data records

5.2 Classify and code
- Classify data according to pre-defined collection requirements and definitions
- Assign codes to data items according to classification

5.3 Review, validate and edit
- Detect and treat all Quality Adjustments
- Detect and treat all significant anomalous data

5.4 Impute
- Logical imputation
- Historical imputation
- Seasonal imputation
- Subjective imputation
- Mean imputation
- Regression
- Donor Imputation

5.5 Derive new variables & statistical units
- Derive a final price for reference data
- Derive a final price for pre-processed data
- Derive a final price for all Price Observations collected
- Derive a current Price Relative for all Price Observations which have a Base period Price recorded

5.6 Calculate weights
- Calculate Reporting Unit sample weight
- Calculate Price Observation sample weight

5.7 Calculate aggregates
- Calculate the Raw Index, C Index, Average Price and Median for Price Samples using assigned Compilation method
- Price update previous period value aggregates for all elementary aggregates
- Sum all child value aggregates for each upper level Price Index component

5.8 Finalise data files
- Calculate all additional aggregate data for Price Index (P Indexes, points contribution & change, percentage change)

6 Analyse

6.1 Prepare draft outputs
- Record quality characteristics for each Price Index number produced
- Produce data visualisation outputs

6.2 Variable outputs
- Validate Price Index outputs against body of knowledge
- Validate Price Index quality characteristics against a quality framework
- Macro analyse Price Index outputs
- Investigate inconsistencies between macro data and body of knowledge

6.3 Scrutinise and explain
- Inspect macro statistical outputs
- Explain macro statistical outputs against body of knowledge

6.4 Apply disclosure control
- Assess likelihood of identification of data
- Recommend protection techniques for data
- Apply protection techniques to data

6.5 Finalise outputs
- Apply consistency checks
- Produce clearance documentation
- Set level of data release
- Conduct clearance meetings with senior management
- Clear data for release

7 Disseminate

7.1 Update output systems
- Load data and metadata to output data stores
- Resolve issues
- Validate and sign off

7.2 Produce dissemination reports
- Prepare draft of dissemination products
- Finalise dissemination products
- Validate and Sign off release of dissemination products

7.3 Manage release of dissemination products
- Brief authorised stakeholders

7.4 Promote dissemination products
- Release dissemination products
- Release other products

7.5 Manage user support
- Record Query in Single repository
- Categorise/Link Query by Release Period/Index/Component
- Resolve Query
- Refer to Delegate
- Advise response to client
- Record response

8 Archive

- 8.1 Define archive rules
- 8.2 Manage archive repository
- 8.3 Preserve data and associated metadata
- 8.4 Dispose of data and associated metadata

9 Evaluate

9.1 Gather evaluation inputs
- Determine persons / team to conduct evaluation
- Gather inputs required for evaluation

9.2 Conduct evaluation
- Conduct detailed analysis and evaluation of all gathered inputs
- Produce report detailing finding, and recommendations for improvement

9.3 Agree on action plan
- Present evaluation report to appropriate corporate consultative boards for discussion
- Agree on action plan for either implementing or amending the proposed recommendations
- Set up metrics to monitor the success and benefits derived from implementing recommendations

DRAFT

thank you
danke
謝謝
ngiyabonga
teşekkür ederim
gracias
merci
obrigado
dziękuję
bedankt
спасибо
Баярлалаа
рахмат
dank je
go raibh maith agat
mochchakkeram
sukriya
kop khun krap
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