



AIHW's metadata strategies

A national data standards approach



What will be covered

- **Background**
- **History**
- **Current developments**
- **Future challenges**



Background





Why?

- **Need to improve quality, relevance, consistency and availability of national information about the health and welfare of Australians**

How?

- Establish national data standards
- Focus on metadata that describes the meaning and representation of individual data elements that are the source of meaningful statistics
- System independent
- Support data development





Outcomes

- **Most visible product – national data dictionaries**
- **Behind the scenes – structures and processes**
- **Value rests on Agreement and Authority**
- **Collaborative approach**



Some history





In the beginning...

- 1989 (Version 1)
 - Proposed national data collection of hospital-based data
 - Needed a data specification to record agreement on scope, definitions of data fields and data formats
- 1993 (Version 2)
 - National Health Data Dictionary for institutional health care
 - Annual publication ever since
- 1995 (Version 4)
 - National Health Data Dictionary (NHDD)
 -



Trends 1989-1995

- Realisation that definitions were useful, and had application beyond initial collection focus
- Development of national agreements, and committees to consider and 'approve' definitions
- Development of conceptual framework for national health information (NHIM)

Behold ISO 11179!

- 1996/97
 - Realisation that structure used to represent the data items was inadequate
 - Identification of 11179 (1993) as a basis for defining NHDD data elements
- 1997 (Version 6)
 - Dictionary entries reworked into format based on 11179
- 11179 format is still basis of current NHDD (Version 12)





AIHW Knowledgebase

- **At the same time, AIHW decided to build an on-line version**

NHIK - National Health Information Knowledgebase

- **Contents of Dictionary, plus hypertext links**
- **NHIM used as a 'coordinating framework' to access data elements**

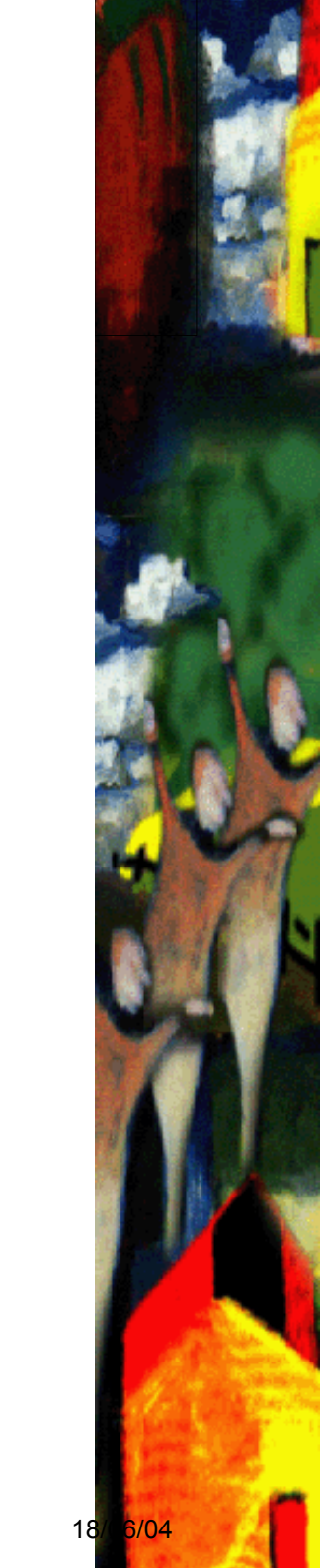




NHIK

- **Launched 1 July 1997 to coincide with release of NHDD v6**
- **Oracle database, accessed via Oracle Web Application Server**
- **One of the first Internet-based searchable databases**
- **Low-cost solution**





1996-2003

- **National Community Services Data Dictionary**
 - **Version 1, 1998**
 - **Version 2, 2000**
 - **Version 3, 2003**
- **National Housing Assistance Data Dictionary**
 - **Version 1, 2001**
 - **Version 2, 2003**



1996- 2003 cont.

- **National agreements and committee structures established for community services and housing**
- **And national information models established for community services and housing**
- **Meanwhile, NHIM version 2 developed**

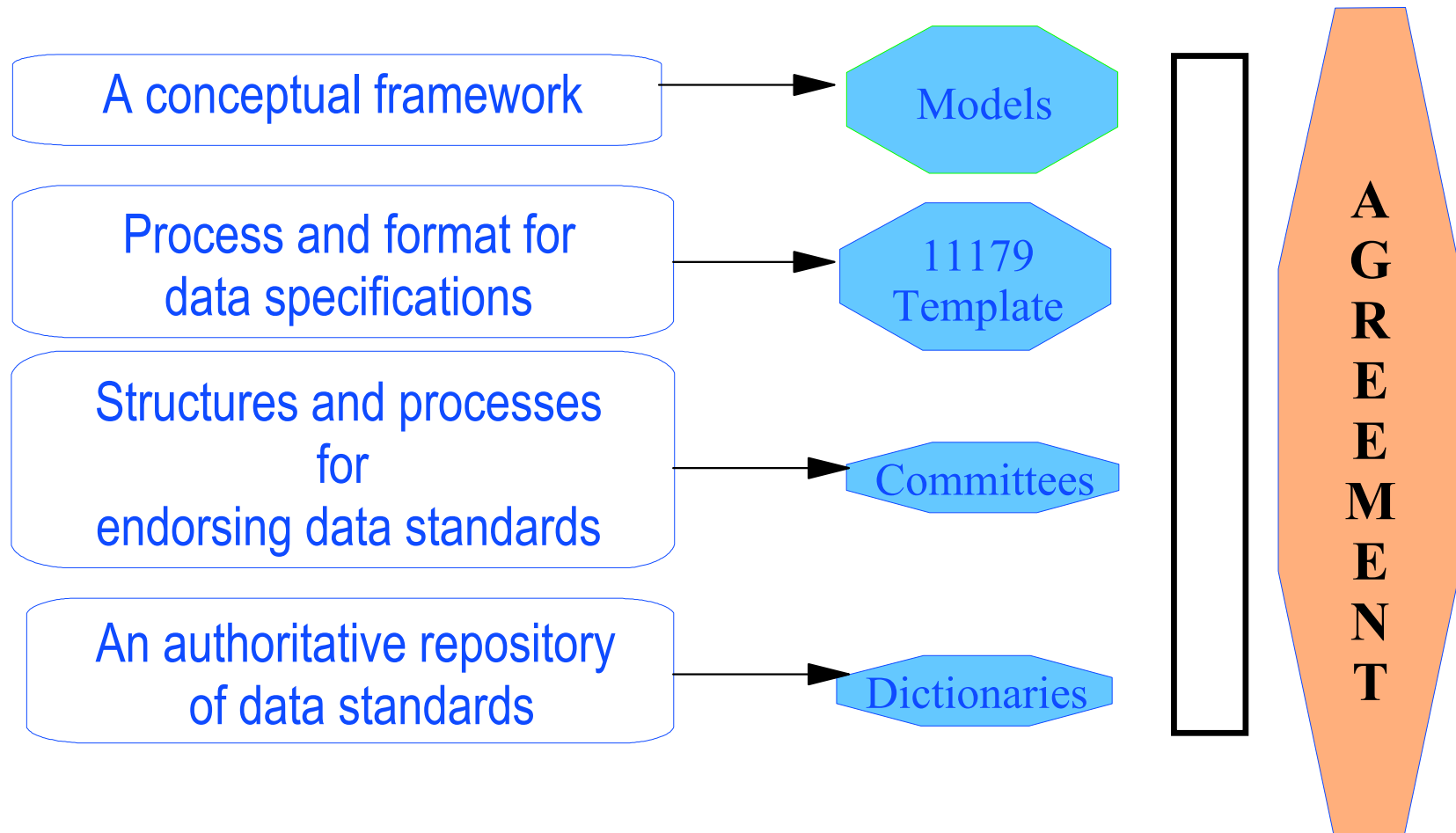




Data standards infrastructure

- National information agreements
- National information models
- Standard format and process for metadata development
- Structures and processes for endorsing metadata as national standards
- Authoritative repository of data standards

Structures, Processes & Products



Current developments



Redeveloping the AIHW KB

- Advances in web server technology
- Acceptance of web delivery of information
- Increased sophistication of web sites and users
- A need to upgrade the website
- An opportunity to consider the 'new' version of 11179
-



KB redevelopment cont.

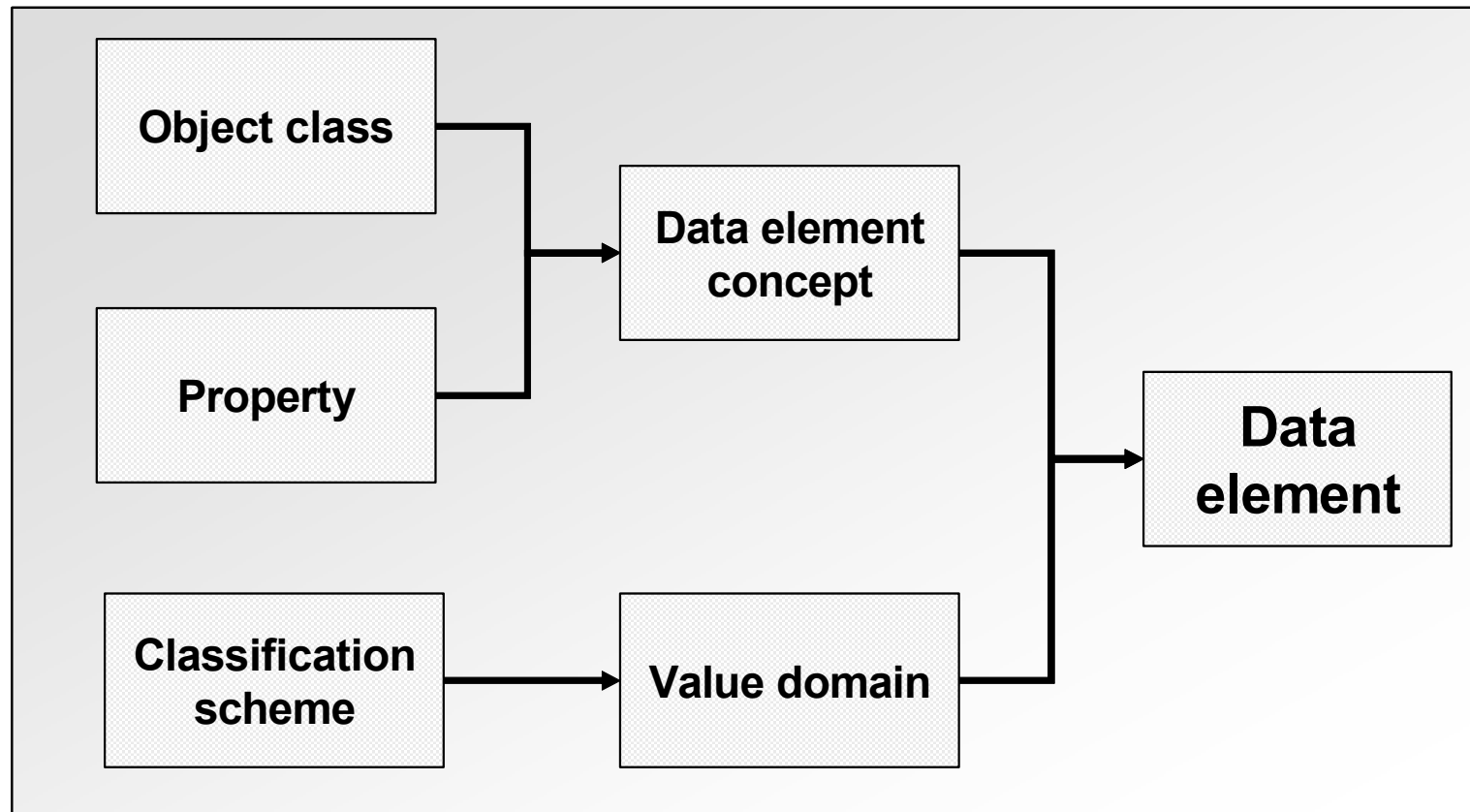
- **Begun March 2003, still progressing**
 - **Stakeholder and user needs analysis - completed**
 - **Functional specification for new website - completed**
 - **Redesign of metadata structures, based on 11179 – current**
 - **Re-engineering of KB content - current**



New ISO 11179

- From data elements to metadata registries
- 6 part standard:
 - 1 Framework
 - 2 Classification
 - 3 Basic attributes and Registry metamodel
 - 4 Formulation of data definitions
 - 5 Naming and identification principles
 - 6 Registration

New metadata structures



What are they?

- **Object class:** the 'thing' of interest (eg. *Client, Dwelling, Hospital admission*)
- **Property:** the characteristic of the 'thing' (eg. *Sex, Location, Date*)
- **Data element concept:** a concept that can be represented in the form of a data element, described independently of any particular representation (Object class + Property) (eg. *Client sex, Dwelling location, Hospital admission date*)
- **Value domain:** A set of permissible (valid) values for a data element (eg. *1=Male, 2=Female*)
- **Data element:** A unique combination of a Data concept and a Value domain element



A new implementation of 11179

- From dictionary of data element definitions to register of national data standards
- 11179 appears well suited to meet these requirements – greater flexibility
- AIHW using 11179 for documenting standards not databases ('what should be' vs 'what is')
- AIHW enhancement: new metadata item type: Data Set Specification – or logical grouping of data elements (mandatory and non-mandatory)



Some key benefits

- Promotes re-usability of metadata items – especially value domains, object classes and properties
- Establishes classification schemes as a separately managed type of metadata item – incorporation into national data standards registration process
- Allows generic and specific metadata to coexist

AIHW METeOR (the new KB)

- AIHW's metadata on-line register to include:
 - A database for metadata
 - A web-site interface including plain English guide to data development
 - A create and submit tool for metadata developers
 - Registrar tools (query, process and export) and
 - System documentation
- Building phase to occur between June and September.
- Loading the re-engineered metadata and testing in October
- Implementation by the end of 2004



Challenges

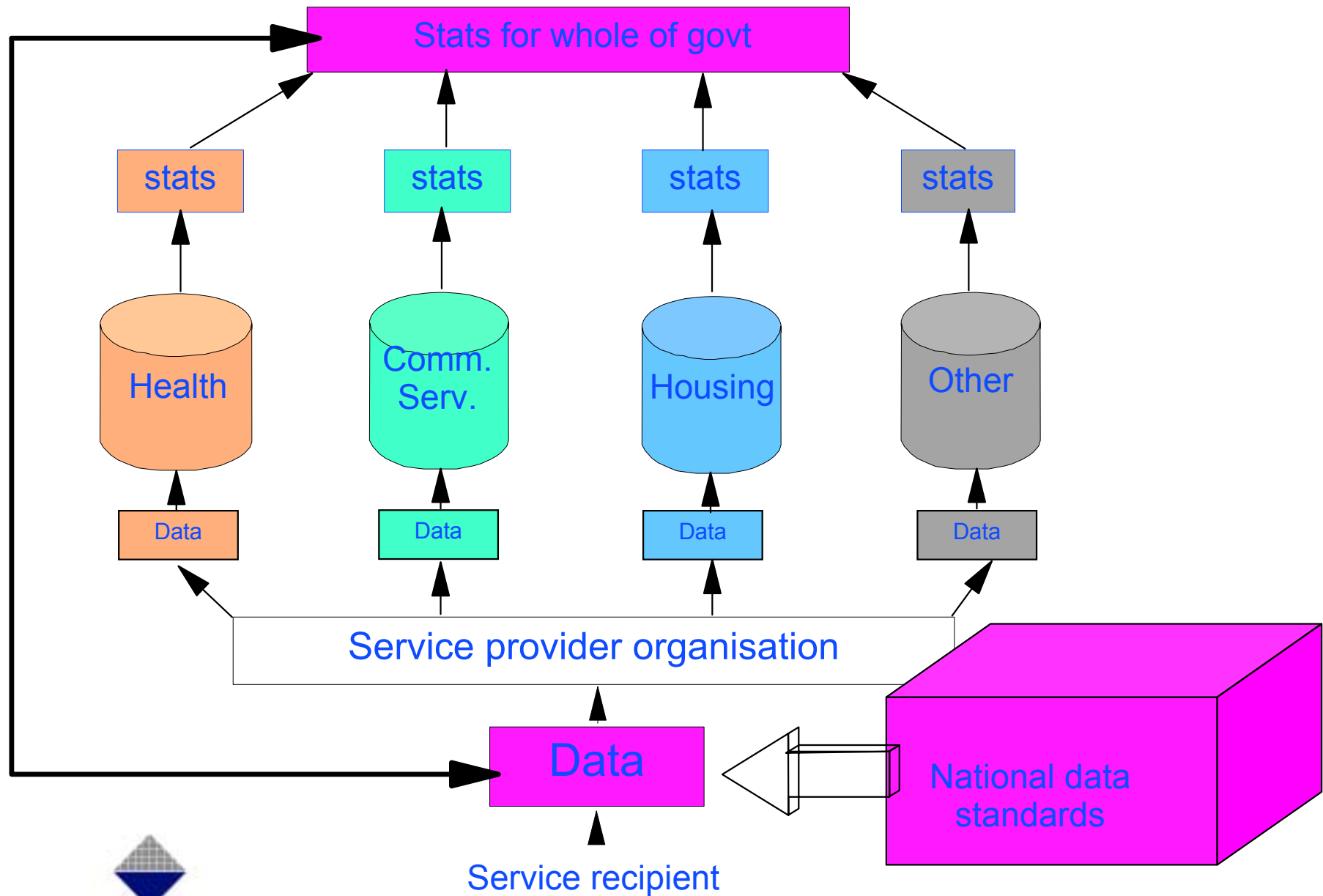


Dilemma

- Information needed to support
'Whole of government' approach
- BUT also need information to support accountability by
policy/admin silos
- Same time: reduce data collection and reporting burden on
service providers
ie. *Record once – use often!*
- *How can information both support and transcend
policy/admin silos – at the same time?*



'Where we are' vs 'where we want to be'





Information mechanisms for crossing the silo boundaries

- **Formal agreements: basis for collaboration**
- **Committees: forum for identifying common information needs and reaching agreement on standards**
- **Data standards register: authoritative metadata resource for data developers**