6. Organizational and workplace culture issues (Australian Bureau of Statistics)

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6.1 Overview of roles and responsibilities

Initiation of IMTP in February 2010 led to significant adjustment of roles and responsibilities within the ABS.

The 2003 metadata management strategy had stated that, in terms of governance

Metadata management becomes part of every project and each project ensures that they consider and budget for resources to handle metadata development and maintenance.

It is sometimes suggested that by making something "everyone's business" it becomes nobody's business.

The Data Management Section (DMS) within the ABS was to be "consulted" and had a co-ordinating and advisory role. The aim was that the Corporate Metadata Repository (CMR) and its services would be progressively extended to meet the needs of new application developments. DMS developed guidelines to assist project planners, project managers, business analysts and IT staff in understanding the practical meaning and intentions of the principles and how they might apply in the context of a specific project. DMS also provided direct interactive advice to planners, analysts and IT staff.

In practice, however, the design and development of new metadata repositories and services were driven by the initiatives that required them, and paid for them, such as BSIP and ISHS (see BHM). Given input from DMS, architectural design panels and other sources the designs were notionally left open for use by other projects, and for integration within the CMR, but these outcomes were given relatively low priority in practice.

DMS also continued to fulfil roles it had prior to the 2003 strategy. DMS has been responsible for Data Management Policy within the ABS and maintaining the ABSDB and selected other infrastructure such as CMS and ClaMS described in the supporting page for Section 4.1 of this case study. The maintenance role includes

- managing IT maintenance and minor new developments
- acting as database administrators
- supporting end users including providing content design advice and training

While DMS ensured necessary "repository infrastructure" was provided, and that the infrastructure remained "fit for purpose" in a changing organisational and technical environment, it is not responsible for the quality of the content held within each repository. That responsibility rests with the subject matter areas and others who provide the content and have an ongoing custodianship responsibility, including ensuring the content remains up to date and answering any enquiries its definition might generate from others.

Data Management Policy mandates use of the corporate facilities for various purposes and subject matter areas are responsible for making use of the facilities in accordance with those policies.

The Standards and Classification Section (SCS) has a number of leadership roles in regard to metadata content within the ABS. SCS develop and support "standard" classifications and variables which are cross domain in nature (eg industry, occupation, language). Many of these are recognised standards for Australia as a whole, not just the ABS. SCS also provide guidelines and advice to help subject matter areas ensure their "collection specific" metadata is well defined and curated.

DMS and SCS form the Data Management and Classifications Branch (DMCB) within the Methodology and Data Management Division (MDMD). DMCB brings together specialists in metadata modelling and systems with specialists in metadata content, in order to reinforce each other's work and to provide strong integrated support to the ABS and the broader National Statistical Service.

With announcement of the IMTP, an early matter to be clarified was the nature of the new program's relationship with MDMD - and DMCB in particular. The conclusion was that IMTP would assume leadership at the strategic level in regard to (Statistical) Information Management. The Program Board for IMT, for example, consists of the head of the ABS and his four deputies. This Board is therefore able to address organisational

governance and alignment issues, including in regard to Statistical Information Management, that the approach to implementing the 2003 strategy had been unable to address in practice.

Naturally the IMTP leadership role entails working closely with MDMD. It is recognised, also, that IMTP is leading a transformation process (which, from July 2011, is expected to take at least six years to complete). At the conclusion of that transformation process IMTP is not expected to continue as an organisational unit in its current form. Strategic leadership therefore needs to transition to a sustainable arrangement within the "post IMT" organisational structure.

As described in IMT, this leadership role is reflected in activities such as development of the Statistical Information Management Framework, design work associated with the MRR and leadership of the international OCMIMF collaboration. A team of information management specialists, and business analysts specialising in information management systems, exists within IMTP. At the current time (July 2011) this team comprises half a dozen staff. It is expected to approximately double in size during the coming year..

DMS staff have been seconded to IMTP on a rotating basis to assist with its IM work program.

In addition, DMS has notionally divided its work program between maintenance of existing infrastructure (as described above) and supporting IMTP through

- detailed assistance to "pathfinder" projects in applying standards such as SDMX and DDI as well as sound data management practices more generally
- providing input to the IM related projects and initiatives that IMTP is undertaking
- undertaking practical research projects on behalf of IMTP

There are around a dozen staff within DMS currently, with their duties split fairly evenly between maintenance of existing infrastructure and supporting IMTP.

A third key area (beside IMTP and DMCB) is SISD (Statistical Infrastructure and Solutions Design) unit within the technology oriented division of ABS. One role of SISD is to provide technical leadership and support in regard to Enterprise Architecture, including data/information architecture. SISD also leads and supports the "solutions design" process within the ABS, ensuring that new developments (particularly those that are classed as "Architecturally Significant) are designed with due regard to agreed architectural principles and practices. Alignment with the "to be" business and data/information architectures, whose definition is emerging from IMT, is a key consideration in this regard. The "Metadata Building Code" developed by DMS during 2010 currently provides guidance in this regard.

The solution design process culminates with a formal Design Review that comprises senior executives from Technical Services Division, IMTP and relevant business stakeholders. Where an appropriately consultative solution design process has been followed prior to the formal Design Review, however, key "architectural concerns" from various perspectives should already have been identified by stakeholders and addressed in the design proposal. The Design Review should serve as a formal gate to confirm the solution design process has been conducted appropriately, and confirm high level support for the solution proposed, rather than result in fundamentally new concerns being identified.

In addition to these key organisational units (IMTP, DMCB and SISD) there are a range of governance, reference and advisory groups that include participants from across the ABS. These groups assist in steering and informing ABS priorities and directions related to Statistical Information Management.

Phase 5 of IMT will focus on extending facilities to support the discovery of and access to data within the NSS. In the meantime, however, the Data Leadership Initiative (DLI) is being sponsored by NSSLB (National Statistical Service Leadership Branch). DLI aims to promote within the NSS best practice standards to help ensure data is 'fit for purpose' for statistical use. This includes best practice in application of exchange standards such as SDMX and DDI. NSSLB is working closely with IMTP and DMS in regard to these aspects of DLI.

The following table contains a list of specialists in metadata management in the ABS:

Name	Role/Position in ABS	Phone Number	Email
Alistair Hamilton	Chief Statistical Information Architect - IMTP	+61 2 62525416	alistair.hamilton@abs.gov.au
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Graeme Brown	Director - SCS	+61 2 62525920	graeme.brown@abs.gov.au
Ric Clarke	Chief Architect - SISD	+61 2 62526736	ric.clarke@abs.gov.au

Marie Apostolou	Director, Statistical Coordination, NSSLB	+61 3 96157500	marie.apostolou@abs.gov.au

6.3 Training and knowledge management

General training in regard to IMT, including the future for statistical information management, is only starting to be developed and remains at a general level.

Capability building for information management specialists and IT developers in regard to SDMX and DDI has been a priority since the decision of the ABS Executive in October 2009 that these standards will form the core of the ABS's future directions and developments with regard to statistical information management. To date this has primarily been achieved through engaging international experts to present structured courses and workshops. On line learning packages and other training materials developed overseas have also been researched and evaluated, and then utilised where appropriate. It is planned to "train trainers" within the ABS to be able to deliver basic and intermediate (but not necessarily advanced) training in regard to these standards (and their application within the ABS) in future.

Several of the deliverables from the current activities being undertaken by IMTP (eg the Metadata Registry/Repository, the Statistical Information Management Framework) create training needs in order for these outputs to be harnessed appropriately by business and technical users.

In regard to existing infrastructure, DMS provides a range of training.

In addition, a Corporate Metadata Repository (CMR) Assistant is available from the home page of the ABS intranet. This provides a portal to overview and detailed information about the available facilities as well as related policies, guidelines and training courses. It also provides direct access to the facilities themselves by allowing users to click on the component of interest as represented in a high level diagram showing how the various facilities fit together.

As the CMR is "part of the way the ABS does business", the generic training offered by DMS is only one strand. The training about dissemination processes in the ABS, for example, includes information about how content defined in the CMR can be drawn into the various dissemination channels and made available outside the ABS. DMS provides development assistance and input on the components of these training courses that relate to the CMR.

Similarly the corporate "Assistants" related to Business Statistics, to Household Surveys and to Publishing cross reference relevant content from the CMR Assistant where appropriate.

The strategy of presenting information about the CMR in the context of a particular wider business process, rather than trying to present everything about it exhaustively in a major CMR specific training program, appears to work well.

6.4 Partnerships and cooperation

The major partnership specifically related to metadata management, as described under IMT, is the ABS work on the OCMIMF Collaboration with five other NSIs.

Given the ABS Executive decision in regard to SDMX and DDI in October 2009, the ABS has a strong interest in how effectively and efficiently these standards work together, both currently and into the future. The ABS is therefore a very active participant in the SDMX/DDI dialogue process which also engages the two standards bodies together with a number of other NSIs and international agencies.

While developments such as the MRR and the Statistical Information Management Framework are not formally structured as collaborative projects, plans and experiences in regard to them are shared at an informal working level. Informal interchange is particularly common with agencies that are undertaking similar developments which harness SDMX and DDI working together.

More generally, the ABS is very keen to share information and experiences and to collaborate within METIS generally as well as on a narrower (eg bilateral or "working group") basis.

At a national level, ABS is undertaking a number of metadata related projects in conjunction with ANDS (Australian National Data Service). The primary focus for ANDS is infrastructure to better support the data management and access requirements of researchers. Public Sector Information, including statistical information from the ABS, is a key information resource of interest, and value, to the research community.

The National Statistical Service (NSS) provides many opportunities for other collaborations. These include working with State and Territory Government agencies that are undertaking major data related initiatives as well as working with sector specific initiatives (eg the Australian Transport Data Action Network) that span agencies at the State and Territory as well as the Australian level. NSS initiatives take the ABS beyond

simply collaborating with other statistical agencies and into collaborating with other metadata communities, such as the geospatial community, the research community, and others.

One collaborative project, for example, with a state government agency and the university sector involved developing "injectors" for technical metadata about usage rights under the Creative Commons framework. The software allowed information on usage conditions to be "injected" into spreadsheets and other products so this information remained associated with the content even after it had been downloaded from the web. The Creative Commons organisation itself has now expressed interest in assuming responsibility for ongoing custodianship and development of the software.

6.5 Other issues

Over the past 15 years the term "metadata" has become common parlance within the ABS. The value and importance of metadata is widely recognised.

There is also a degree of disappointment, frustration or scepticism expressed in some quarters because more progress hasn't been made more quickly and we haven't yet made metadata simple to manage and maintain as well as "all powerful" in driving and describing all processes and outputs. The vision expressed in the 2003 metadata strategy to some extent fostered expectations that were unable to be met during the subsequent years of implementation. Questions have been raised in regard to what is different about IMTP which will allow larger scale success this time.

As illustrated elsewhere in this case study, however, the corporate positioning of, and support for, IMTP is incomparably stronger than the positioning for implementation of the 2003 strategy. The profile of IMTP has led to much more active business (including senior executive) engagement from across the ABS in shaping the IMT strategy and its expression. It is a corporate initiative, driven by business strategy and requirements, rather than an initiative driven (in reality or in terms of common perception) by IT and/or IM specialists. In addition there are enablers (eg mature standards and technologies) capable of supporting IMTP that did not exist eight years ago. Partly because of these enablers, great strides have been made within the wider community of producers of official statistics which mean IMT is able to harness collaboration, and shared solutions, in a manner that was not possible in 2003. In addition, IMT learns from past ABS experiences in this field - and the experiences of other agencies.

The fact the term "metadata" is so widely used, in a variety of valid but different contexts, is emerging as an issue. The focus on IMT on "statistical information" rather than specifically "data" or "metadata" is seen as an advantage in this regard. At a minimum most references to "metadata" in discussions within the ABS, or outside the ABS, require clarification of which type(s) of metadata is being referenced.

Being primarily aware of low level technical examples, some managers are unsure why metadata should be considered a strategic business challenge and enabler within the ABS rather than a purely technical matter. Once again, a focus on "statistical information" (which is the core business of the ABS as an NSI) can be helpful.

Similarly there is frequent confusion between "metadata concepts, models, systems etc" and "metadata content". It is challenging to promote a message that investment in well designed and integrated metadata infrastructure is a necessary, but not sufficient, condition for achieving consistently high quality of metadata content. Senior managers have tended to have unrealistically high expectations of what will be delivered - which would lead to disillusionment if not addressed in advance - or else their expectations are so low that they are unwilling to commit resources to the effort.

Very significant challenges arise from the fact staff often enjoy the challenge, and receive satisfaction, from developing definitions, structures, frameworks etc from first principles. They often also find it hard to resist the temptation to "tweak" the wording of a definition, the details of a structure etc that they already recognise as basically fit for purpose but which they believe could be improved upon slightly for their specific purpose. This can be seen as part of a culture of "local optimisation" rather than "global optimisation". A series of poorly integrated local optimisations, however, may result in an inefficient, sub-optimal end to end business process. In addition, a diversity of "locally optimised" processes/systems across the organisation typically proves very hard to sustain over time.

Seeking of "local optimisation" by employees can be linked to a sense of professionalism and pride in their work. It is vital not to undermine the latter two when seeking to address the former. Aiming for "local optimisation" also tends to be simpler than seeking global optimisation.

It is also the case that simple reuse isn't always the answer. Sometimes local divergences are appropriate even when viewed from a wider perspective. The trick becomes identifying when this is the case. Such cases typically require "designing the divergence" such that re-use of existing concepts and content is maximised, with the divergence being only to the extent required. This becomes a difficult balancing act. There is a temptation to revert to "starting with a blank slate" as soon as it becomes apparent re-use will not be simple.

As illustrated in the preceding two paragraphs, there is scope for the aim "think globally, act locally" to create even more challenging and satisfying roles for staff, but the extent of the cultural change required to reach that point appears daunting.

Exactly the same "local optimisation" issues described above in regard to subject matter staff reusing metadata structures and content have been observed in terms of programmers re-using existing services as part of Service Oriented Architecture.