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The role of the Statistical Business Register in the modernisation of the statistical production and services.**Transforming the Australian Bureau of Statistics Business Register (ABSBR)****Note prepared by Bruce Hockman, Economic and Environment Statistics Group, Australian Bureau of Statistics***Summary*

The ABS Business Register (the ABSBR) in its current form was introduced in 2002 coinciding with the changes to the Australian Taxation System which provided the underlying data sources for the ABSBR. This ABSBR was based upon an earlier version known as Inteframe. The ABS was not able to commit sufficient resources to undertake a complete redevelopment of the ASBBR and enhancements were made to the previous system. Some capability deficiencies were identified with the ABSBR. The ABS opted to make a series of enhancements to the ASBBR which resulted in a more flexible business register with an improved capacity for change. This has positioned the ABSBR to develop a geospatial capability. This paper outlines the major enhancements made through the ABSBR Capital Strategy project, the opportunities created and the plans for future developments.

I. Background

1. The ABS has transformed its business register through a series of incremental changes.
2. In 1999 the business register system, Inteframe, was commissioned following a 5 year development project. It was developed using ODBII, the Fujitsu object oriented database management system developed by Fujitsu.
3. Australia introduced the New Taxation System during the period 2000 to 2002. There were two main parts to the taxation reform. The first covered the removal of a range of wholesale sales taxes and the introduction of a Value Added tax known as the Goods and Services Tax (GST). The second covered the introduction of the Australian Business Register (ABR). Organisations register with the ABR and receive an Australian Business Number (ABN). Only registered organisations were eligible to participate in the GST system and able to claim GST credits. All government departments and agencies were to use the ABN as the primary reference number for all dealings between government and business.
4. This new Inteframe system proved to be particularly robust and underwent redevelopment as a result of the introduction the New Taxation System by the Australian Taxation Office during the period 2000 to 2002. The changes which were made as a result of tax reform were considerable but were done at relatively low cost.
5. The major changes were related to the adoption of a new units model (refer to Attachment 1), a two population approach to the maintenance strategy and the inclusion of non-employed units. The ABR became the major updating source for the vast majority of units. These units have relatively simple structures and are known as the Non-Profiled Population. The other units (the Profiled Population) are significant and/or have complex structures are profiled by the ABS.
6. The ABS decided to undertake a redevelopment of the business register when Fujitsu advised it would stop commercial support for the ODBII product in 2007. The redevelopment project focused on the migration of functionality essential to the efficient and effective operation of the business register to a new platform. It was a low cost and predominantly technical project. The budget of the migration project was around a third of the budget for the development of the ODBII based system. The key outcome for the migration project was to ensure business continuity for ABS economic statistics.
7. In June 2008 the Business Register Information Management System (BRIMS) was introduced after a parallel run period with Inteframe. In order to deliver this system on time some of the functionality initially envisaged was not delivered.
8. The BRIMS system was a stripped back version of the initial Inteframe system. It reflected the units model of the time with a single production unit, no location unit and no link between the institutional and producing units.
9. BRIMS has continued to change and gain functionality since its introduction through a series of small projects and enhancements. The major changes to the business register that were made in these enhancements were:
 - Straightlining the business register and eliminating redundant data stores;
 - Creating benchmark information using tax transactional data;
 - Introducing the generic collection object;
 - Introducing geospatial capacity;
 - Linking Legal Entity/ABN to producing units;

- Incorporating profile reports onto BRIMS; and
- Removing the hard boundaries between the profiled and non-profiled populations.

10. An elaboration of these enhancements and their impact on business register functionality are discussed in the following sections.

II. The straightlining process

11. The business processes of transforming registration information from the ABR into business register and common frame units had evolved over a number of years. Some of these processes were efficient and resulted in duplication of data stores, creating a need to keep these synchronised and requiring a number of work arounds. The straightlining process eliminated the duplicated data stores and reduced the requirement for clerical intervention.

III. Creating benchmark information using tax transactional data

12. The derivation of size information for production units was changed from static fields to values based on taxation transactional data for Employment and turnover. The chief benefit was that benchmarks more accurately represented the actual size of business register units and would achieve a higher level of homogeneity within strata and thereby improving the efficiency of sample for point in time estimates. This change was made in association with rules which control the rotation so as to prevent artificial inflation of variance estimates.

VI. Generic collection objects

13. Collections objects are flags held against business register units that identify that they are also reporting units in statistical collections. The business register does not carry sufficient variables to create survey frames for all ABS collections. The institutional unit-based collections such as the International Investment Survey are not business register based as yet. They require collection objects to identify units in the survey and coverage population and their respective size and other descriptive information.

14. Collection objects were part of the Inteframe functionality. Changes were made to make the functionality generic and provide a flexible back-end to allow new collections to be migrated to the business register.

15. The migration of collections to the business register provides advantages to the ABS such as improvements in the coherence of statistical outputs and the ability to re-use and link collected and administrative data.

16. The generic collection object is linked to the ABN (Legal Entity unit), can be populated for any collection and can be used to migrate any collection to the business register. Units moving from the profiled to non-profiled populations or vice-versa maintain their collection object information.

V. Geospatial capacity

17. Locations and establishments were removed from the ABS business register prior to the creation of the Inteframe in order to reduce maintenance costs. Since that time demand has grown for regional statistical data.

18. The ABS made a decision to add a geospatial capacity to the business register. The first phase was to create infrastructure to hold business addresses and associated geospatial metadata. All business addresses for Enterprise Groups have been loaded to the ABSBR.

19. The second phase was the creation of a visualisation tool which enables the business register to be interrogated/viewed geographically. Results of interrogations can be viewed as a list or via a map. Thematic maps can be created and the results of interrogations exported to a file.

20. The third phase is the addition of a location statistical to the economic units model. The business register location unit has the capacity to hold ANZSIC and size attributes. The inclusion of location statistical units on the business register will enable improved modelling of state and regional data. This phase aligns with the ABR's plans to make business location details available across government.

21. The business register will start to take location information from the ABR by 2014. The ABS business addresses will be populated from the ABR and augmented with profiling intelligence and the current Agriculture locations collected via surveys.

22. When fully populated, location statistical units can be linked to administrative datasets creating opportunities for the creation of new regional datasets. Further possibilities exist for linkages to be created to an ABS address register covering all residential and non-residential addresses which is currently in development.

VI. Linking administrative units to production units

23. Under the 2002 units model there was no direct link between the Legal Entity/ABN and the Type of Activity Unit (TAU) for groups in the profiled population, limiting the ability of the ABS to use administrative data. Senior ABS statisticians rated this as the most significant problem with the Economic Units Model (EUM).

24. The 2013 units model now includes direct links between the TAU and the Legal Entity/ABN statistical units. Infrastructure was created on the business register to hold the links and metadata about the relationships between the Legal Entities and TAUs. In addition procedures have been implemented to prevent the creation of many to many links between Legal Entities and TAUs. The population of these links is being undertaken through profiling and will be completed by April 2014.

VII. Profiling review and merging profile reports onto BRIMS

25. The outcomes of a review of profiling have been reflected on the business register. Profiling population metadata has been added to the business register reflecting the group's complexity and propensity to change and recommended profiling methodology and frequency.

26. Profiling reports and charts have now been merged into BRIMS. BRIMS has become the single source of intelligence for all groups on the business register.

VIII. Removing the hard boundaries between the profiled and non-profiled populations

27. The hard boundaries between the profiled and non-profiled populations have added to the cost of maintaining the business register. BRIMS was remediated to allow for the maintenance of information for units in the non-profiled population. These include the introduction of additional ABS fields for industry and institutional sector.

IX. Looking forward

28. The Business Register is now well positioned to undergo further changes and enhancements. In the short term the focus will be on the population of location statistical units and the development of output functionality enabling business-based geospatial data to flow through to the wider ABS.

29. Developments being considered for future years include data linking and improving survey feedback infrastructure.

X. Conclusion

30. The successful transformation of the Business Register since 2002 demonstrates that significant advances can be achieved through small scale incremental change. This, however, requires a sufficiently agile infrastructure that is able to readily adapt to new demands.

Annex

2002 Units Model

2013 Economic Units Model
