Andrew Allen
Office for National
Statistics

Session 2 Innovation in statistical business registers

Managing the transition to a new Statistical Business Register

Introduction

The ONS is currently developing a new Statistical Business Register (SBR), which will replace a system initially introduced around 25-years ago. The business register is used in the production of most business statistics in the UK, and used by a range of external government customers for wider economic analysis. The new SBR is being built in a new technology stack and will also include methodology improvements, which will change the way many variables are calculated. The new SBR will also include extra administrative sources and hence have a full, but bigger population.

In parallel to the IT system build, we have started to plan how to make the transition from the old system (IDBR) to the new SBR. This will lead to many challenges for the user community and we need to work with them to manage the transition.

This paper will set out the key considerations and outline some of the proposals to enable the smooth transition to the new system.

The transition plan will cover a range of activities including, dual running, organisational change and user acceptance of the new product. From a customer point of view the main issue is migration of surveys from the old to new system, and managing discontinuities arising from the new bigger business population. Before decommissioning the old system, the Business Register operations team and the survey customers will need to be fully confident that the new system can accurately deliver all their required functions.

There are international guidelines on how to set up and run an SBR, but there are none on how to transition to a new register. The aim of the paper is to identity the key considerations and share these with the Wiesbaden community. We would very much welcome advice and suggestions from members of the group who have experience of this type of transition.

The new SBR

ONS is transforming its information technology landscape to a service oriented architecture, with Cloud Foundry hosting its services and Cloudera providing a data management and processing platform. At the same time the old IDBR is being replaced, so rather than building it in an isolated database, we will be using this new infrastructure. The consequence of this is that the new register will be based on a data access platform and built up from a range of services. To the end user it will look like a single harmonised system, but it will be a network of systems.

The IDBR created enterprises directly from administrative units, without firstly creating legal units.   The new system will first create a legal unit view of the business. This is called the Business Index, and will operate as a separate service, providing a cross government legal unit identification service. The BI will then feed these legal units into the new SBR system, where the family of statistical units will be created.

The IDBR was known to have under-coverage of very small entities. This was managed through estimation using aggregate data from administrative sources, but the wider role requires this under-coverage to be addressed. ONS has also recently benefitted from new data sharing provisions (Digital Economy Act 2017), which will enable access to important new data sources to fill this gap.

The main new data source will be Self-Assessment Tax. This will be used to identify very small sole traders and partnerships; whose sales are below the £85,000 VAT threshold and who do not employ any other staff. There are many businesses in this group, but their total output is only a small part of the economic output of the UK. However, there is a growing policy requirement to analyse this population in detail. The expanded population will allow detailed industrial and geographical analyses of this part of the population for the first time.

Organisational Change

Moving from a register based on 25-year old technology, to a new system based on the latest technology, will lead to considerable organisational change. This significant investment will lead to efficiencies, and it is expected that a smaller team will be required to run the new system. Also, some of the skills required will change. While core business structure and register updating knowledge will still be required, it is likely that we will need less clerical, and more analytical input. The aim is to automate as much as possible, and to take a more risk based approach to clerical procedures.

Creating the BI and SBR as separate products also leads to organisational change. The BI will be managed by Data Architecture division in the new ONS technical environment. The SBR will be managed by the Data Collection division, so this will necessitate organisational change, on top of the impact of the more efficient systems.

As the system build moves towards completion we will consider the roles required to run the new system (there are currently not fully known) and a create a training programme. A transition plan to manage the movement of staff into these new roles will be then be put in place.

While dual running we will need both old and new roles to be carried out. A scenario could occur where some team members are selected and trained for new roles, but they will also have to carry out their old functions.

We are working with the operational team to create a new organisational design and consider how roles will change. A key part of this is to keep communicating with the operational team during the development to help them deal with the uncertainty.

Dual Running

The user community, particularly National Accounts will need to assure the new SBR, and manage the impact of change. This will create pressure for an extended dual run, whereas the SBR team would be happier for a shorter dual run. Nevertheless, some dual running will be required. This dual run is not just at the end of development period; there will be a need to

keep the data in both systems closely aligned during the development to be able to assess quality and the impact of incremental functionality.

It is not feasible to run two complete operational teams, from both a cost and expertise perspective. It is also not acceptable to allow the old system quality to deteriorate while it is still being used.

The main areas of non-administrative data that are needed to be updated on both systems are survey feedback, business profiling and other enterprise group clerical updating. Survey feedback includes essential contact information such as address changes, and ceased trading notification. But we also take some information for variables, such as classification changes.

A special register survey (business register and employment survey) which is the source of all local units is probably the biggest challenge, since this provides a monthly update, not only amending details of units, but also creating and terminating local units.

So, the current plan is to use a technology solution, which will be to take a regular copy of any non-administrative data updates from the old system, and use this to update the new system. This will need to be a regular copy over to avoid conflicts with multiple data changes to units. This will require some short-lived temporary functionality to be developed, but this seems to be inevitable to facilitate transition. Eventually as we are happy with the performance of the new system, we would switch to making clerical amendments on the new system, and copying these back to the old system.

It is assumed that the administrative data will feed both systems in parallel, although that will also cause problems with duplication, so it will be necessary to design a stagger in data load to deal with births being created in two different systems at the same time.

User Acceptance

Differences between the new and old system will arise from:

- New or changed administrative sources
- New methodology, including a separate legal unit step
- New technical system

The first two are intentional changes, whereas the third could be caused by coding errors, or confusion over the requirements. Industry standard technical coding tests will be conducted as well as user assurance checks.

The methods changes will be tested and agreed through the governance arrangements. Also in this case there is the extra complication of the BI-SBR split. We are not building a simple replacement, but instead have introduced a separate legal unit step. This has the potential to create a discontinuity and adds complexity when assessing the quality of the new register outputs.

The user community understand why new data sources are being introduced and will expect us to be able decompose the impact.   It is envisaged that a data-pack explaining the differences between the two systems will be produced each month, to help with user assurance. This pack will be presented to a transition group – see transition group section.

Survey Migration

Over 60 business surveys are conducted on the IDBR, so business survey migration will be a very challenging part of the transition. Previous experience of register population change, has demonstrated just how long the user community take to introduce register population changes. Users will need to adjust their systems, estimate the discontinuity in their outputs, and create a publication strategy.

One way to minimise the delay in making use of the new system, will be to replicate the population from the old register on the new register, by creating frame filters that mimic the old frame population. It may not be possible to do this precisely, but a close approximation may be achievable.

 The main risk with this approach is that could slow down the transfer to the full use of the SBR as the user community can prevaricate.

Survey management

A function of the register is to manage respondent burden and overlap between surveys. If survey samples are selected from two different systems, then it becomes hard to manage overlap control. Also, small businesses are given survey holidays based on their size and response history.   To assist the transition, all existing enterprises will carry over their old reference number, as well as a new number, which is generated for use on the new system. This will enable their sample history to be considered, but it is no yet clear that we can provide the same guarantees during the transition period.

Transition Group

The change will require a coordinated approach to manage the impact through the production chain. ONS will set up a register transition group, which will be chaired and managed by National Accounts. This will give the ONS users the opportunity to coordinate the transition, and ensure external users communication is consistent.

In parallel, the external user committees, will be used to support other government departments through the transition process.

Ultimately the transition group should also agree the decommissioning date for the old business register!

International Community Experience

The purpose of the Wiesbaden group is to share experience, so if anyone has recent experience of moving to a new Business register, any lessons learnt or advice would be welcome!