

# Challenges of Migrating ABS Business and Household Surveys to Blaise Web on a Large Scale and Short Timeframe

*Author(s): Adrian Bugg, Kathy Buck, Anthony Davies, Annette Hants, Monica Kempster*

*Presenter(s): Helen Robson*

*Organization: Australian Bureau of Statistics (ABS)*

## 1. Abstract

In 2012, the ABS began a challenging program of transforming its data collection activities to include eCollection as an option for most of its collections. The program began rolling out in December 2012 and covers both household and business surveys. The main part of the migration program is due to conclude at the end of 2013. This paper will look at some of the challenges, including building capability in staff, drivers for the change, things that worked well, learnings and future plans.

## 2. Background

The Australian Bureau of Statistics (ABS) is Australia's national statistical agency. By providing trusted statistics and statistical leadership, the ABS supports public debate and helps Australians to make informed decisions in an increasingly complex world. The ABS provides statistics on a wide range of economic, social, population and environmental matters for government, business and the community.

The ABS continues to be regarded as a world leader amongst national statistical agencies. However, we face a number of challenges including increasing demands for more timely and diverse statistical data on our economy, society and environment. Additionally, we operate in a fast changing information landscape and we are constrained by a tight financial situation. The ABS is facing increasing collection costs and complexity as well as provider resistance. As Australia's official statistical agency, our ability to effectively respond to these challenges is key to our ongoing success.

The ABS needs to ensure that high quality official statistics are readily available to governments and the community when key decisions about the future of our nation are made. In response to this, the ABS has embarked on a significant journey of change – the ABS 2017 Program - that will transform the way we collect, manage and deliver information and statistics. Without this change, our ability to achieve our mission into the future is at risk; we will not be able to continue to fund our existing work program, nor respond effectively to the changing needs of our users.

The ABS commenced planning its business and information management transformation program in 2010. This program represents the most strategic initiative to update statistical business processes and information management infrastructure within the ABS since the 1970s.

In early 2012, the ABS 2017 Group was formed to lead the transformation of the way that the ABS collects, collates, manages, uses, reuses and disseminates statistical information. The transformation program has three key goals:

- to reduce the cost of doing business by streamlining operations to reduce the time it takes for information to move through each stage of the statistical production process. By significantly

reducing the cost of collection and processing, resources can be reinvested in higher value customer products and services.

- to grow the business through new statistical products and services. For example an enhanced capability to quickly bring together data from a range of sources (e.g. administrative, transactional, survey) will help to better shed light on complex economic, social and environmental problems.
- to deliver the first large scale digital Census (2016) on time, budget and to a high quality. This represents the most significant change to an Australian Population Census in 100 years.

The ABS 2017 program needed to ensure a sustainable future for the ABS. The ABS needs to be more productive, timely and flexible with the information that we collect, process and deliver to meet the expectations of user communities.

The ABS must transform its operations in order to maintain our relevance for Government and the Australian community. To meet the ABS 2017 goals, large scale innovation is needed across the ABS, but in a timely manner whilst delivering on business as usual and maintaining the reputation and trust that the ABS is renowned for.

The ABS has been moving toward a goal of increased electronic data collection for some time and we have achieved success through the 2011 eCensus and the Agricultural Census eCollection. The Longitudinal Study of Australian Children and the Household Energy Consumption Survey also successfully deployed web-based survey components in 2011–12. In 2016, when the ABS conducts its first predominately digital census, the target is a minimum 65% eForm response.

Under the ABS 2017 banner, the ABS has embarked on its short term strategic priority of developing key enabling infrastructure, including eCollection capability, within our business and household survey program and for the 2016 Census. The five-yearly Census of Population and Housing is the largest statistical collection undertaken by the ABS. Since August 2011, the ABS has collected approximately 6.1 million Census forms and 2.8 million eCensus submissions, and we have converted these responses into Australia's most important dataset, providing information on our population, where we live, and our key characteristics.

### **3. Collection Costs and Complexity**

The ABS has recently examined response rates being achieved for ABS surveys and the level of effort being expended on intensive follow up to achieve these response rates. There is evidence of provider resistance to supplying survey data to the ABS, and this has been steadily increasing over the past ten years. A steady decline in response rates has been detected for some key surveys. Analysis suggests that this decline is driven by external factors outside of the control of the ABS.

Many business surveys have in the past required providers to complete a paper form. As these surveys are now migrating to eCollection, it is hoped, and experience so far has shown, that providers are more willing to participate using eCollection. This mode is less time consuming and burdensome for providers, avoiding the need for completion and mail back of a paper form. Response rates for these surveys will continue to be carefully monitored to establish if eCollection has increased participation and resultant response rates.

## 4. The Journey

The project to deliver ABS eCollection capability for household surveys commenced in 2010 when it was envisaged that the system developed for the 2010/11 Agricultural Census would be enhanced to accommodate the additional requirements of these collections. The Monthly Population Survey (MPS) would be the first household survey to adopt eCollection.

Following the successful deployment of the Agricultural Census eCollection System (ACES) system, work commenced in 2011 to build the necessary capability. By early 2012 it became evident that, without a significant redevelopment requiring the injection of additional funds, ACES would not deliver an acceptable solution for MPS.

In February 2012, a Request for Expressions of Interest (RFEOI) was lodged seeking information from Industry on six core capabilities, one of which was eCollection. A total of 21 companies responded to some or all of the six capabilities presented in the RFEOI, however, there was no obvious or clear solution provided to any of the six capabilities. Statistics New Zealand participated in this process through membership of the ABS2017 EOI Steering Committee, and in the post evaluation discussions.

The ABS already had considerable existing investments in Blaise as a data collection platform for personal and telephone interviewing, as well as editing and processing for business and household collections. Blaise 4 was already in widespread use within the ABS for Computer Assisted Telephone Interviewing (CATI), Computer Assisted Personal Interviewing (CAPI) and editing purposes.

Blaise was known to be able to handle the complex household survey instruments. MPS and Special Social Surveys (SSS) instruments already used a form of Blaise and it had the added benefit of being used by other international statistical agencies.

An evaluation was subsequently undertaken into the potential for the Internet version of Blaise (Blaise IS) to form the basis of the solution for the online data collection of household surveys, specifically the MPS. Blaise IS offered a ready-made solution that would integrate well with existing survey collections. This solution needed to be available for deployment for the MPS from the December 2012 cycle. The evaluation of Blaise IS recommended proceeding with a Blaise based eCollection capability. Testing has since confirmed that Blaise IS is a more suitable platform for current and future survey collection requirements.

Following a visit by a Statistics Netherlands Blaise IS expert, an evaluation was conducted by the ABS to understand how it could be deployed and what work might be involved in integrating it with other ABS processing systems. The evaluation confirmed the potential of Blaise IS as a cost effective, functionally suitable, solution in the short- to medium-term.

As a result of these evaluations, the February 2012 Household eCollection Program Board endorsed a proposal to proceed to use Blaise IS for household surveys, specifically the development of online collection capability. Following this decision, the ABS commenced the accelerated development of an eCollection solution in May 2012 using Blaise IS for household and business surveys.

The full transformation program included development of the following:

- eCollection for ABS household and business collections
- Administrative data - receipt, transform and load functionality to support the Enterprise Data Warehouse project
- Mobile devices and applications for use by field staff and providers
- Workload and Workforce Management
- Provider/collection interaction and management systems (including a provider/user portal).

Following adjustments to funding and discussions by senior management, the program was rescoped to focus on translation of ABS household and business surveys to eCollection.

#### **4.1. Plans for migration of the Monthly Population Survey to online collection**

The MPS has been conducted by the ABS since 1960 to provide regular information about the population and labour force of Australia. Key economic indicators such as the unemployment rate are produced from MPS data. Approximately 35,000 households around Australia are included in the MPS each month. Households are included in the MPS for eight consecutive months. Using a rolling sample model, dwellings are replaced every eight months, therefore seven-eighths of the month to month sample is the same as the previous month.

The MPS is made up of the Labour Force Survey (LFS) and supplementary survey topics such as education, the environment, conditions of employment and child care arrangements. The LFS component can be answered by any adult member of the household. The Multi-Purpose Household Survey (MPHS) is an additional one-off supplementary survey containing a mix of topics. One randomly selected person in a proportion of MPS households is selected for the MPHS each month. The MPHS is only asked of outgoing MPS rotation group households, who are in their final month of MPS.

The MPS eCollection capability was tested in a full dress rehearsal which was conducted in October and November 2012.

Following the dress rehearsal the ABS initially offered eCollection in December 2012, to one "champion" rotation group. This rotation group continued in the MPS for its full 8 month cycle, finishing in July 2013.

To effectively manage risk and measure the statistical impact of migrating to eCollection for the MPS, a roll-out and statistical impact measurement strategy was developed. This strategy measures the "offer of eCollection" effect to the MPS results, rather than measuring the actual "mode effect" of the eCollection instrument in isolation.

The measurement strategy has two main aims:

- to identify during rollout if there is any catastrophic statistical impact, defined as being a treatment effect greater than three Labour Force Survey (LFS) Standard Errors; and
- to measure (if possible) the size of the statistical impacts post the transition to eCollection, to be able to quantify them for LFS users.

Under the measurement strategy, eCollection has been offered to 50% of incoming MPS rotation group from May 2013 and extends the eCollection offer to 100% as each rotation group refreshes. This option fulfils both the ability to identify if there is a catastrophic impact and, if large enough, to quantify it for users. Full eCollection implementation would occur by April 2014 at the completion of the measurement period.

## **4.2. Migration of Monthly Population Survey to online collection**

### Phase 1

Phase 1 of the Migration of Household Surveys to eCollection involved the development of a web form for the MPS, using Blaise IS. A system was developed that integrates Blaise IS into the ABS environment and offered electronic enumeration to MPS respondents.

Infrastructure and processes were put into place to integrate the data collected via web reporting (Blaise IS) with the data and support mechanisms for existing collection methods for MPS, i.e. CATI and CAPI (managed through the Computer Assisted Interviewing Workload Management System (CAIWMS)).

The full functionality of the system was available in time for the December 2012 MPS, after the DR conducted in October and November 2012.

Development of eCollection brought it to a stage where it was considered suitable to maintain the collection of data and provide stability to the process required for an effective measurement strategy while balancing the potential risk introduced by continual changes. Changes were minimised to allow for a stable collection via eForm month to month during the implementation and roll out to more sample.

From May 2013, it was agreed that no further eForm changes were to be made under the MPS Phase 1 Program for eCollection until completion of the measurement strategy. Further system development continued to support infrastructure requirements for eCollection in general.

Outstanding issues identified during Phase 1 were brought forward to be addressed as part of MPS Phase 2 migration.

### Phase 2

Phase 2 of the eCollection program is currently being developed. Online collection Phase 2 is proposed for delivery after the measurement strategy has concluded. This phase will include the following developments:

- Any corporate initiatives that improve coding functionality and the application of standard coding frames for industry, occupation, country of birth or other significant coding frames applicable to supplementary surveys and MPHS
- Changes identified but not included in the changes made for the May 2013 instrument
- Changes to the structure of eForms to meet accessibility requirements as per Web Content Accessibility Guidelines (WCAG) 2.0
- Series of questions to accurately identify scope and coverage exclusions
- Any improvements suggested by LFS data analysis
- Review of the Household Form operation
- Review of in-form edits

- Any improvements identified to improve respondent experience and reduce overall completion time
- Incorporation of additional data in Blaise database structure to support ongoing mode analysis
- Improved approach materials and review of survey supporting information
- Improvements to the Household Contact Details Form
- Pre-approach strategies to increase uptake of eCollection.

### **4.3. Migration of Business Surveys to eCollection**

The migration strategy for business surveys proposed a roll-out schedule for migration to eCollection that grouped surveys into six batches.

Batch 1 – subannual surveys, large sample volume, with a form that is relatively simple to create with the Blaise web form functionality that has been established by December 2012 (i.e. the functionality required for the Labour Force Survey form). Batch 1 will deliver large savings for small investment.

Batch 2 – subannual surveys, with forms that will require some additional functionality in Blaise, or have some other element of complexity. This group also includes some surveys with relatively simple forms but with smaller volumes than Batch 1 surveys.

Batch 3 – subannual surveys with forms that have a heavy use of explanatory material. Some further thought needs to be given to how these forms are presented in web format.

Batch 4 – the remaining subannual surveys. These surveys have been assessed as a relatively low priority for migration, either due to small sample size, or else the availability of spreadsheet-based electronic reporting.

Batch 5 – annual surveys. This batch aims to make substantial progress towards migrating annual surveys without being too ambitious, preference is again given to collections with large sample sizes. This batch also lists surveys where web forms have already been introduced.

Batch 6 – The remaining annual/irregular surveys (on hold)

There are a relatively small number of business surveys that encountered obstacles to the use of eCollection and will not be migrated. The reasons for this include incompatibilities in infrastructure, specialised data collection requirements or cost factors.

### **4.4. Progress of Migrating Surveys to eCollection**

As discussed earlier, the ABS has focused on implementing eCollection capability for the Monthly Population Survey, most business surveys and preparation of an eCollection solution for the Census test in August 2013.

Significant achievements have included:

- Progressive implementation of MPS commencing from December 2012
- Implementation of quarterly business collections and other Batch 1-4 surveys – See Table 1
- Preparation for MPHS and MPS supplementary topics
- Readiness for annual collections
- Preparedness for Census test in August 2013
- Blaise workshop for international collaboration.

By the end of 2013, the ABS will have implemented eForms for most quarterly and annual business collections, including surveys that result in Major Economic Indicators (MEIs), the MPS (including the MPHS and MPS supplementary topics).

Further to this, we will have established an eCollection capability for household and business collections (based on Blaise) that will have been evaluated for Census. Subject to this evaluation, Blaise will be further developed as the corporate capability or used in conjunction with an enhanced version of the application used for the 2011 Census. In progressing this work, the ABS has established productive working relationships with Statistics Netherlands and has been sharing knowledge and expertise through the International Statistical Network.

In the process of transforming our data collection activities, all relevant areas of the ABS have been working closely together, from subject matter areas through to technical experts. This has assisted in meeting our goal to integrate our activities and systems and reduce duplication of effort. This collaborative effort and commitment from all relevant areas has been vital to success.

All services that support eCollection were designed to provide a corporate capability, for use across business and household surveys. This corporate capability will be used by all household and business collections and the 2016 Census.

Tables 1 and 2 contain lists of the business surveys now using eCollection as the primary mode of data collection and those expected to adopt eCollection in 2013-14 and 2014-15.

Table 1: Business collections now using eCollection as the primary mode of data collection (as of July 2013)

Collection	Cycle Sample size	First use of Blaise eCollection
Internet Activity Survey (IAS)	Half yearly 100 to 600	December 2012
Business Indicators Survey (QBIS)	Quarterly 16,000	March 2013
New Capital Expenditure (CAPEX)	Quarterly 8,000	March 2013
Survey of Tourist Accommodation (STA)	Quarterly 4,500	March 2013
Retail Trade Margins Index (RTMI)	Quarterly 150	March 2013
Engineering Construction Survey (ECS)	Quarterly 2,000	March 2013
Average Weekly Earnings (AWE)	Half yearly 5,500	May 2013
Coverage Survey for International Trade in Services (SITS coverage)	Quarterly 800	May 2013
Survey of Employment and Earnings (SEE)	Annual 2,000	June 2013
Rural Environment and Agricultural Commodity Survey (REACS)	Annual 35,000	June 2013



Table 2: Business collections expected to adopt eCollection in 2013-14 and 2014-15

Collection	Cycle Sample size	First use of Blaise eCollection
Annual Integrated Collection (AIC)	Annual 40,000	August 2013
Agricultural Land and Water Ownership Survey (ALWOS)	Annual 11,000	August 2013
Survey of Venture Capital and Later Stage Private Equity (VC)	Annual 250	August 2013
Private Health Establishments Collection (PHEC)	Annual 600	October 2013
Survey of Motor Vehicle Use (SMVU)	Every second year / 3 segments 16,000	October 2013
Freight Movements Survey	One-off 16,000	October 2013.
Building Activity Survey (BACS)	Quarterly 11,000	December 2013
Job Vacancy Survey (JVS)	Quarterly 5,500	November 2013
Vineyards	Annual 10,000	May 2014
Survey of Employee Earnings and Hours (EEH)	Every second year 63,000	May 2014
Land Management Practices Surveys (LAMPS)	Annual 50,000	July 2014
Business Characteristics Survey (BCS)	Annual 17,000	October 2014
Cultural Funding by government	Every second year 7,000	January 2015
Research and Experimental Development (Businesses)	Every second year 7,000	January 2015

#### 4.5. eCollection Take Up Rates

pleasing take up rates to date indicate that Australian households and businesses are happy to respond via the web. Businesses are particularly keen to use eCollection for our surveys, with an average of 66% of all providers offered eCollection now completing their survey on-line.

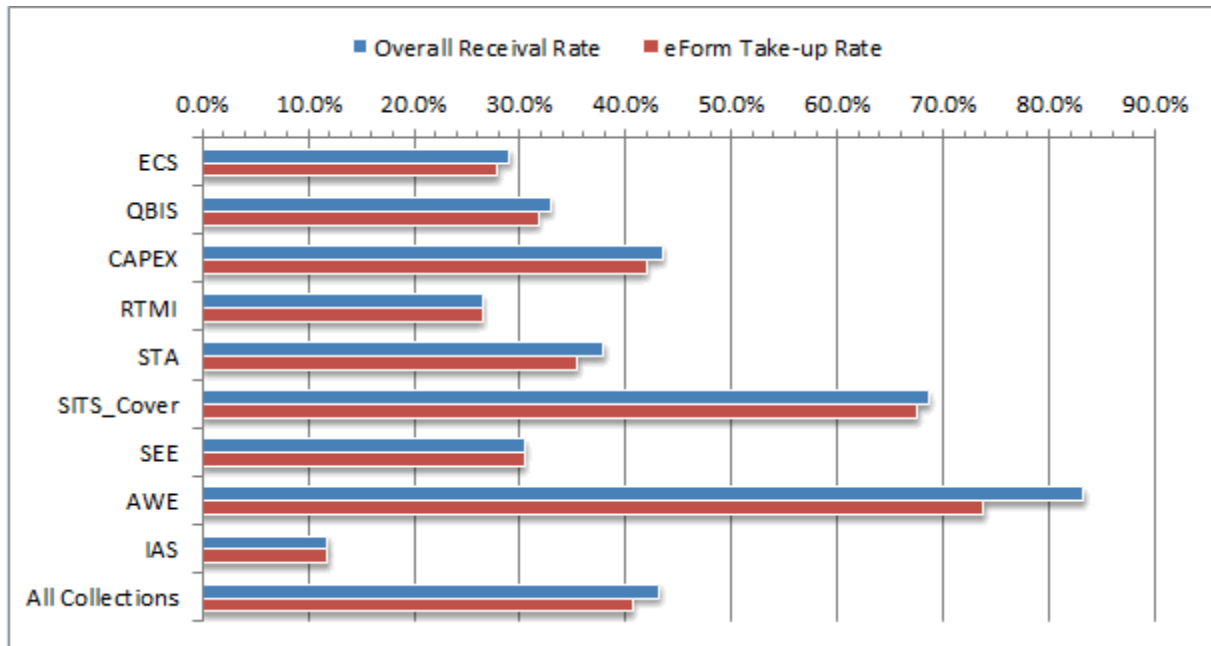
On the household side, implementation of eCollection for the MPS is well underway, with approximately 19% of the sample now offered eCollection.

The opt-out strategy used for business surveys involves a letter being sent to providers, which offers an online option only for survey completion. This strategy is resulting in higher take up rates for business surveys compared to household surveys, as the onus is on the provider to contact the ABS if they are unable to do the survey online.

On the household side for MPS, eCollection take up rates are lower as the offer of eCollection letter encourages respondents to complete the survey online, but also provides another option. Respondents are encouraged to complete the registration process and the survey online by a particular due date. If this date is not met, they are advised that an ABS Interviewer will visit the address to conduct an interview. Households enumerated by an Interviewer are asked after the first month's interview if they would prefer future interviews to be conducted online.

Tables 3 and 4 report the latest take up rates for eCollection for Business and Household Surveys.

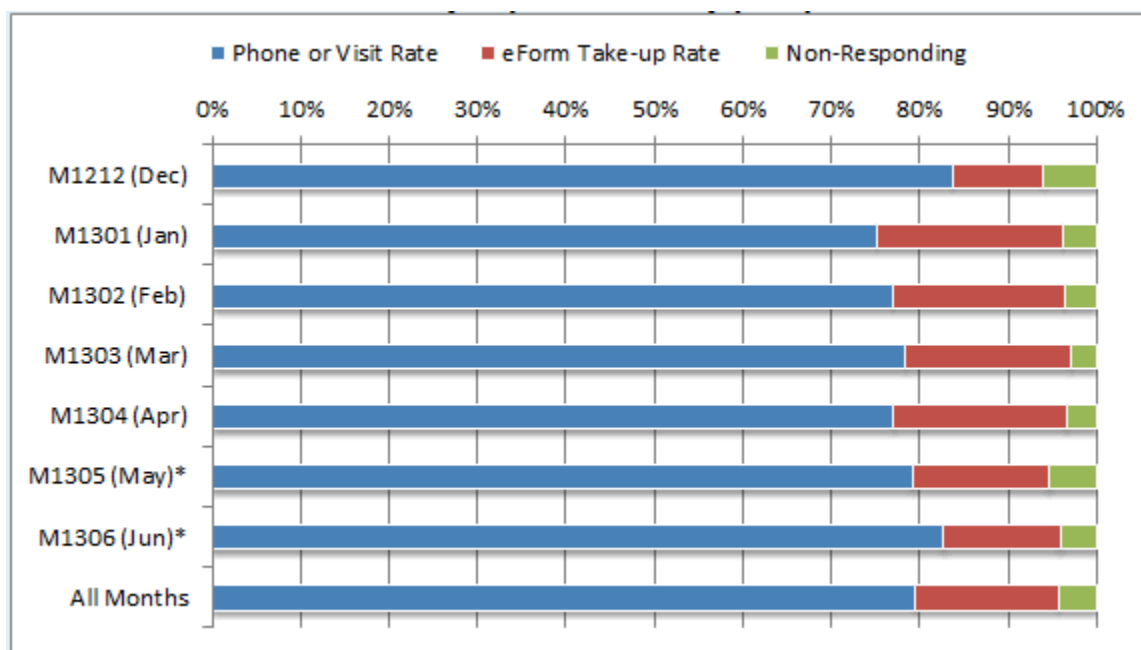
Table 3. eCollection Take Up Rates for Business Surveys in July 2013



\* Current as of 15 July 2013. ECS, QBIS, CAPEX, RTMI & STA are June quarterly surveys.

\*\* eCollection take-up rate includes data entered by providers into an eCollection and data entered into an eCollection over the telephone by PCU staff.

Table 4. eCollection progress of the Monthly Population Survey (MPS) since December 2012



ECollection take up rates on commencement for MPS (December 2012) came in at the expected rate of 10%. This rate increased in subsequent months and is currently averaging 18%. Management Information Reports indicate that some households switch between modes, moving from eCollection to Telephone Interview and vice versa during the 8 months that they are in MPS.

Respondents in households offered eCollection who initially decline the offer are enumerated face to face or by telephone. If the MPS was completed by an Interviewer, the Interviewer was prompted to ask the respondent whether they would do the MPS online the following month.

During the 2011 Census of Population and Housing 33% of Australian households chose to complete the Census questionnaire online using the 2011 Electronic Census Lodgement Solution (eCensus). This was a significant increase on the 10% who chose to use the eCensus in 2006. This increase was driven by a combination of factors, including a greater focus on ‘selling’ the benefits of the eCensus ‘at the door’ by Census field staff, and strong growth in Internet use and connectivity throughout Australia in between Censuses. This growth in take-up is encouraging given the ABS’s stated aim of achieving at least 65% eCensus take-up in 2016.

## 5. Challenges, Opportunities and Lessons Learned

Integration issues were identified during the initial stage of eCollection implementation. These were subject to incremental fixes and enhancements to ensure a stable eCollection experience. Issues identified included:

- the need for early identification of issues to enable technical staff to identify areas of risk and complexity which might impact on eCollection development or deployment
- the need for better control of the agreed timetable for development and operations
- constant competition for resources between business as usual and eCollection development

- the need to focus on the whole collection process, not just eForm delivery
- insufficient time for end to end testing
- short timeframes required for instrument delivery
- insufficient metadata management
- instability of legacy systems
- variation of lead times between business collections and the consequent need for timeframes to be considered on a case by case basis
- failed prefill for rollover of LFS December household form data to January online form.

Overall, ABS eCollection deployment capability improved during this migration phase, demonstrated by the decreasing number of eCollection iterations needed as a result of testing.

### **5.1. Ambitious Release Schedule for Migration to eCollection**

The original planned release of eCollection proved too ambitious in the timeframes allowed and had to be scaled back. A decision was made to proceed to eCollection for the Monthly Population Survey and the Internet Activity Survey. Originally the ABS had aimed to migrate other business surveys ie Quarterly Business Indicators Survey (QBIS) and Capital Expenditure Survey (CAPEX). The ABS has now successfully implemented all March 2013 quarterly business surveys.

In transitioning to eCollection, subject matter areas had to specify requirements to Blaise programmers twice, one set for eCollection and one for CAPI. In turn Blaise programmers had to build two instruments. No additional time could be built into survey development timetables to cater for the increase in work.

There were a large number of Service Requests (SRs) approved for action by developers, and it was difficult to work through these systematically and efficiently. Tight timeframes, changing priorities and unexpected dependencies also resulted in some SRs being overlooked or not correctly implemented. In addition, system integration issues were underestimated.

### **5.2. Change Management**

Subject matter areas in the ABS were initially reluctant to move their surveys to eCollection. These areas are, however, now using data collected via eCollection. Once they migrated, expectations needed to be carefully managed, as many staff wanted to access features available relating to presentation and pop up displays on screen. At this stage of eCollection implementation, only limited enhancements are provided and this will be reassessed through the transformation phase.

### **5.3. Password Resets on Inbound Calls**

The work of ABS staff responsible for handling respondent queries increased substantially as a result of offering eCollection. The main reason for the increase was due to the need to reset respondent passwords, as many respondents either had trouble logging-in to the eForm or had lost their password. Self-managed passwords are a high priority for the ABS for this reason, as it will allow respondents to quickly reset the password themselves, rather than needing to contact the ABS by telephone or email.

#### **5.4. Limited Resources**

The ABS IT environment required solutions and expertise to support the systems. Staff involved in implementation of eCollection, particularly technical staff, needed to work long hours to ensure all the required changes were made to allow for eCollection to effectively integrate with existing systems.

#### **5.5. Integration with ABS legacy systems**

There was limited time to integrate Blaise eCollection with ABS legacy systems such as the CAIWMS. Several work arounds have been put into place to allow eCollection to proceed for MPS. For example, households offered eCollection are initially allocated into an interviewer workload in the CAIWMS. If the household takes up the offer and completes the survey online, a process was put into place to remove the household from the interviewer's workload.

#### **5.6. Authentication and Authorisation**

It has been demonstrated through external load testing, that the current authentication and authorisation solution, which is a Blaise instrument that utilises external system calls, is not performing optimally, and is at least partially responsible for the reduced Blaise capacity and stability. There are plans to replace the current authentication and authorisation tool, which will not only provide a solution for the eCollection platform, but also be implemented for broader use within the organisation.

#### **5.7. Testing**

Availability of testing environments for eForms was limited. Deployment of surveys required technical staff involvement, which was frustrating for staff responsible for testing surveys. Setting up testing records was a difficult process. Timeframes allowed for testing were at times limited due to late delivery of survey instruments.

### **6. Where to Next**

The next 12 months through 2013-14 will consolidate the translation work through provision of eCollection for the majority of business collections, the Monthly Population Survey (including Multi-Purpose Household Survey and the supplementary surveys) and provision of an eForm for the Census Major test in August 2014. The ABS aims to increase uptake of eCollection by examining and improving pre-approach and follow up strategies for households and businesses.

Beyond 2013 the focus will shift from implementation of eCollection to other components including provider management and workforce management to improve the efficiency and effectiveness of our collection operations. It is essential that the ABS build on the capabilities being developed for Census to provide the next generation of systems through which improvements and savings can be achieved. Use of mobile devices and applications will be a key aspect of further modernisation of how we utilise our field workforce and interact with providers.

Further, there will be opportunities to build on the gains already made through implementation of eCollection by transforming electronic collection instruments as distinct to the current approach of

translating existing paper forms. This transformation will drive further productivity improvements for example through incorporation of edits that reduce the amount of processing (editing) required. Savings are currently being derived through reduced collection expenditure (e.g. printing, postage and scanning) whereas further transformation will see benefits obtained from subject matter areas involved with processing.

## 7. Summary

In summary, the ABS has been successful in migrating a considerable number of surveys to eCollection in a short timeframe. Overall, the quality of instruments has been good but the provider experience can be improved. Our ambitious program has managed risk, but ultimately achieved the outcomes sought by adopting a minimalist approach to the initial round of eCollection.

ABS capability in building and using eCollection will continue to develop, and the cost of deploying eCollection will fall. eCollection delivery processes will be progressively incorporated in standard operations and ultimately become a component of "business as usual". This will include capability to rapidly develop and deploy new eForm requirements, as well as roll-over new cycles for ongoing collections.

Engagement is continuing with Statistics Netherlands, and the international Blaise community on the staged release of Blaise 5 and what its capacities are. In conjunction, ABS is seeking to engage with other National Statistical Organisations (NSOs) to learn what has been done with Blaise Internet versions to date, including whether it has been used for a Census deployment, and what other NSOs may be planning for future versions of Blaise Internet. Our interest includes any investigation into the use of Blaise Internet for developing smart phone and tablet applications.

The second phase of the Blaise evaluation project has commenced and includes:

- Further load and performance testing, to be undertaken by a strategic external partner;
- Further security testing on both Blaise IS and Blaise 5;
- A full evaluation of Census, household and business survey requirements against Blaise 5; and
- Testing of integration with Census 2016 back-end systems and infrastructure.

Phase 2 work will contribute to Census 2016's key decision point in November 2013, when a decision will be made on Blaise Internet for the 2016 eCensus solution.

## 8. References

ABS Annual Report, 2011-12 (Cat no. 1001.0)

[1001.0 - Australian Bureau of Statistics -- Annual Report, 2011-12](#)

ABS Corporate Plan , Jul 2012 (Cat no. 1005.0)

[1005.0 - ABS Corporate Plan, Jul 2012](#)

ABS Forward Work Program 2012-13 to 2015-16 (Cat no. 1006.0)

[1006.0 - Forward Work Program, 2012-13 to 2015-16](#)

Volguine O, IBUC 2013 Conference Paper: Blaise 4.8.4 Web Form Load and Performance Testing, July 2013.

Gligora, C, ABS Internal Paper: MPS eForm Report and Analysis; December 2012 and January 2013.

Griffiths, G, ABS Internal Paper: Measurement strategy for identification of statistical impact on MPS estimates arising from the introduction of Web form collection, 2011.

Griffiths, G, ABS Internal Paper: MPS eForm Statistical Impact measurement strategy, June 2012.

Dubois, C, 2011 eCensus Take-up - What the data tells us- Final Project Report, July 2012