Australian Bureau of Statistics

Census 2016: ICT Capacity & Capability Phase 1 Review Report

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Date: 13 May 2014

Version 1.0

Status: Final

Freedom of Information Status: Conditionally exempt

Document History

Date	Version	Author	Description
09 April 2014	0.1	[redacted]	Template
10- 22 April 2014	0.2 – 0.5	[redacted]	Early data/information gathering notes
22 April 2014	0.6	[redacted]	Findings commentary. First full draft
29 April 2014	0.7	[redacted]	Initial ABS Delegate feedback
08 May 2014	0.8	[redacted]	Final draft for TSD review
13 May 2014	1.0	[redacted]	Final version

Reviewers

Date	Version	Name	Role/Title
22 April 2014	0.6	[redacted]	Review Team member
24 April 2014	0.6	[redacted]	ABS Co-Delegate
29 April 2014	0.7	[redacted]	Review Team member
29 April 2014	0.7	[redacted]	Review Team member
05 May 2014	0.7	[redacted]	ABS Co-Delegate
09 May 2014	0.8	[redacted]	ABS Co-Delegates
13 May 2014	1.0	[redacted]	ABS Co-Delegates

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1. Executive Summary

The Census 2016 Program is both a critical and a flagship activity within the ABS portfolio. The role that Technology Services Division (TSD) plays in supporting both the Census 2016 Program and the wider ABS 2017 Program is vital to the successful delivery of both.

The Review Team has seen good evidence of the excellent commitment of TSD staff to support Census 2016 and to joint working with Census Branch. None the less as with any Program of this scale, complexity, risk and high profile, there are areas where significant risks exist and must be well and, in some cases, better managed to ensure the success of the Program.

The report provides a review of TSD's support for Census 2016 and identifies areas of best practice and those which would benefit from further improvement. The findings and recommendations contained within this report are in the context of the scope of this review. Therefore where reference to TSD's capacity and capability is made, this relates specifically to that required to support the Census 2016 Program and should therefore not be more widely interpreted to apply to the capability and capacity to support the wider 'business as usual' activities that TSD undertake, as this was not within the scope of this review.

Overall whilst no one risk or issue is considered imminently critical to the Program's successful delivery, with less than 28 months before Census night (Aug 2016) however, this position may soon change and a series of key decisions (detailed in this report) need to be made and clearly and consistently communicated across the whole Census 2016 Program. First amongst these key decisions from a technical perspective, and already recognised by TSD (hence the reason for this review), is the form and content of the engagement of a prime partner. The second phase of this review will assist ABS in defining the requirements and structuring of this engagement.

The recommendations of the Review Team can be viewed as two separate but related matters, i.e. those to do directly with the eCensus and those relating to the wider Census 2016 Program.

<u>eCensus</u>

In terms of the eCensus the Review Team recommend that ABS positively consider placing the bulk, if not all, the responsibility for development and operation of the eCensus and

associated web facing components with the prime partner, as detailed in the scope options section of this report.

Wider Census 2016 Program

In respect of the TSD aspects of the wider Census 2016 Program, the Review Team recommend consideration be given to seeking additional expert advice from one or more external parties to increase the capability and capacity of TSD in designing and testing the complex and technically challenging interplay between the critical systems which will support the overall Census 2016. The potential options, the respective 'pros and cons', together with the rationale for our recommendations are set out in detail in this report.

Strategic considerations

In addition, the Review Team suggest that the following considerations are key to the strategic direction of Census, not just for 2016 but beyond into subsequent cycles.

a) Census is substantially different to any other collections (project or program) in ABS in terms of scale, reputational risk, 'life cycle' timeframe, peak demand and consequent performance requirements;
b) Whilst the aspiration has been to achieve a corporate information platform for all collections, the different and markedly higher performance requirements of the eCensus specifically to other forms of collection suggest that this aspiration is unlikely to be achieved in either an affordable (value for money) or sustainable way (other aspects of the wider Census can and are being considered for 'corporatisation');
c) With the increasing population in each cycle of the Census and potential for further complexity in data collected digitally, the potential is for an ever increasing 'gap' between the performance requirements of eCensus collection from the rest of the ABS portfolio.
d) Blaise has been selected as the strategic collection tool and technical assessments by TSD have proven that this application cannot scale to eCensus volumes and is never likely to be architected to scale to eCensus volumes.
e) Given that the performance requirements of Census peak once every five years it is difficult to identify any strong arguments in favour of ABS creating and maintaining this capability 'in house', particular for eCensus, but also for some of the deeper technical skills required of the wider Census applications that are not required elsewhere in the ABS environment.

CapDA's analysis suggests that ABS should consider a long term strategic prime partnering arrangement for the bulk of the digital Census requirements over no less than two and preferably three Census cycles. This, via an open tender, has the potential to generate a more

economic long term solution to eCensus as well as generate greater interest and thereby competition from the supply market.

An open tender would normally be the option most likely to provide ABS and the taxpayer with the best combination of value for money, innovation and risk mitigation. The relatively limited time window to procure through an open tender and 'on board' a prime partner in time to develop a solution for the Dress Rehearsal in August 2015 combined with the inherent risks of any new prime partner (with limited experience of eCensus and/or ABS) means that whilst this remains a valid option, these risks should be weighed carefully against the aforementioned benefits.

Consideration should also be given therefore, to a limited tender to reutilise the existing eCensus application. This would potentially involve procuring IBM's services given their existing experience of the application, hosting it and working with ABS on the eCensus. This route although not ideal from a procurement perspective, would have the benefit of mitigating the increasing risks to what is a far more complicated Census Program than has ever previously been attempted and in what is a much reduced timeframe for a prime to come 'on board' than in earlier Census cycles. The reason for this complexity, and thereby risk, is primarily derived from the ABS' reliance upon a far more integrated IT environment than previously attempted with the Census.

Whatever approach is taken to procuring a prime partnering arrangement, both the scope and the ongoing management of the engagement will be critical factors in achieving the right outcomes. The second phase of this review, focussing on the requirements, will assist ABS in planning for this.

In addition to this primary recommendation for the procurement of a prime partner, the other key recommendations detailed in this report, that the Review Team wishes to highlight are as follows:

- Improved documentation – there is a need for greater attention to be given to improving the detail and quality of documentation to enable clarity around designs, models, risks, decision making and communication;

- Solution Architect – the appointment of a dedicated Solution Architect to ensure a clear and coherent overview of the Census solution set;

- Resource supplementation - the need to augment existing TSD resources with additional deep technology expertise in key areas.

2. Purpose of the review

CapDA were commissioned by the ABS to assist in:

a) The review of the ABS's ICT environment in relation to the delivery of the 2016 Digital Census, matching the business requirements to known market capabilities, and

b) Developing an appropriate statement of requirements (to enable an approach to the market to procure a prime provider).

The overall review is split into the two above phases.

This report specifically addresses the first of these phases (a) and the following deliverables required from that phase:

i. Review the ABS ICT environment and organisation to assess its capability and capacity to meet the requirements of the 2016 Census;

ii. Conduct a detailed assessment of the ICT market in order to provide the ABS with an understanding of the capacity and availability of suitable prime partners;

iii. Provide a report detailing the suitability of the ABS ICT environment to meet the demands of a digital Census, including best practice business advice to influence business processes to minimise customisations and any residual risks;

iv. Review and report on the appropriateness of the budget allocated to deliver the ICT components of the overall task.

Given this scope therefore, where reference to TSD's capacity and capability is made, this relates specifically to that required to support the Census 2016 Program and should not therefore be more widely interpreted to apply to the capability and capacity to support the wider 'business as usual' activities that TSD undertake.

3. Findings and Recommendations

Census 2016 - Technology Services Division

Introduction

The Review Team would like to place on record their thanks and appreciation for the openness and co-operation of all staff that took part in this review. In particular our thanks go to [redacted] for their diligence in coordinating and supporting this review and helping the Review Team to access the people and documentation necessary to complete this review successfully.

The Review Team has seen good and consistent evidence of the excellent commitment of TSD staff to support Census 2016 and to joint working with Census Branch. As with any Program of this scale, complexity, risk and high profile however, there are areas where significant risks exist which must be well and, in some cases, better managed to ensure the success of the Program.

The Review Team focussed primarily, in this first phase on the review, on a significant number of interviews with TSD staff directly involved in the Census 2016 Program, those staff with wider roles in TSD and current or former Census Branch staff. The Review Team also conducted a desk based review of all the relevant documentation that was available both on Census 2016 and Census 2011 in order to conduct a comparative assessment of the relative risk and issues, progress and to identify the appropriate lessons to be learnt from earlier Census cycles.

With the approval of ABS Procurement Services the Review Team also conducted a series of meetings with potential prime partners to ascertain the level of capability, capacity and interest that may inform any future approach to the market.

Overall the Review Team found that whilst TSD have recognised the need for and mobilised resources to support the Census 2016 Program, budgetary challenges, as with all parts of ABS, are posing TSD with the issue of stretching increasingly constrained resources (both in terms of capability and capacity) across a wide range of activities and demands. In the case of Census 2016 these are demands that will only increase rapidly as the Program moves towards execution. Should funding that has been sought from Federal Government for the Critical

Statistical Infrastructure Program (CSIP) be granted, the demands of this Program will, despite the extra funds, only further increase the risk of untenable internal TSD resource contention.

TSD face major and difficult decisions as to how best to support the various challenges of Census 2016 in general and the eCensus in particular, given their constraints in both capacity and capability.

The Review Team found that there is an urgent need to 'on board' a prime partner, and other external resources, as quickly as possible in order to bring not only the additional technical capacity and capability that will be required to support Census 2016 (and not just eCensus), but also to enhance the capability and the rigour of planning, program and related management skills and documentation to ensure that a timely, consistent and coherent approach to the solution design and to map out and manage against a clear plan and critical path for delivering Census 2016. There are specific areas detailed below where further improvements in the capability and capacity of the existing resources, however sourced, will significantly reduce the risks currently existing within the Program.

Focus on people

Based on interviews with TSD staff, we have made the following observations.

Websphere skills

TI has developed some Websphere skills as a result of supporting the Lotus Notes environment. However the middleware/applications team does not have the depth or breadth of skills and specifically capacity to support the eCensus 2016.

TSD capacity

TSD staffing levels are likely to come under growing demands and increased pressure as Census 2016 progresses and additional resources will need to be recruited to ensure dependencies upon key individuals does not become a major risk. This pressure will only be increased further if and when the ABS 2017 Program is progressed with additional external funding.

Oracle skills

TA/TI has good Oracle skills and capacity. ABS have been operating and using Oracle DB for many years and as a result have a good working knowledge. However the skills and experience needed to configure Oracle for high availability across multiple sites are limited.

Duplicating the internet gateway

During interviews the desire to architect a single logical data centre across two sites was discussed for Census 2016. However on questioning there is little experience in the team with respect to building and configuring a global load balanced internet gateway environment

across two sites. The members of the team are individually very talented and no doubt with sufficient time and testing could implement it however it does introduce additional risk into the Census 2016 Program.

TSD TI PHP/MYSQL skills
TI in particular has never supported MySQL in a highly scalable production environment. Nor does TA group have depth of capability with respect to the PHP applications chosen, being Drupal and Moodle. These skills will need to be gained over time if Drupal/LAMP is rolled out as an enterprise capability.

Mobile development skills
There are few skills in developing applications for mobile devices within TSD TA, although skills are increasing as the teams use the frameworks and learn through developing solutions. This does introduce risk into Census 2016 with respect to implementing better practice the first time, potentially increasing rework and potentially resulting in applications that are not performant.

Accessibility development and testing
TSD is not currently resourced for accessibility development and testing. Interviews identified that the current rounds of application development have deferred development and testing of accessible non-functional requirements for WCAG 2.0 AA compliance. TSD don't have an accessibility test lab with access to all the different types of browsers and browser versions, nor the correct skill levels across all teams to ensure accessibility is built in from the beginning. Not addressing accessibility early in the development cycle will lead to rework as it can constrain the nature of the user interface developed.

TSD experience of running eCensus
TSD is optimised for a lower tempo BAU operations and projects. The TSD team is untested when it comes to sole responsible for running the eCensus at scale. Especially in a year where there are many changes to the operational model and the underlying applications, number of applications and integrated nature of the applications.

Project management
Although TSD has project management expertise, rigorous project management is not strongly embedded within the culture and behaviors of ABS. ABS is collegiate, research based and highly collaborative, not necessarily aligned with more structured and disciplined project management. Interviews, post project reviews and lessons learnt reports all evidenced that staff valued and projects benefited from the rigour and disciplines that external project and program management has brought.

High performance, scalable JAVA applications
TSD TA has some skills but not deep enough or experienced enough to deal with eCensus and related system integration requirements for Census 2016.

Performance and load testing skills

ABS lacks required capability to undertake performance and load testing on its own, given the high volume expected and technical complexity of Census 2016.

Capacity planning

ABS does not have sufficient internal capacity and expertise to undertake Capacity planning for eCensus 2016. Although there is no specific capacity planner role, TI have a good understanding of the capacity requirements for the remaining Census 2016 systems as a result of the testing cycles that are run.

Solution Architect for Census 2016

Although there are solution architects and infrastructure architects within TSD and the Census group of projects, they are mostly focused on their own application based silos. Interviews suggested that there was no single dedicated role for coordinating the overall Census 2016 systems solution. The architecture documentation is less well developed that the Review team would expect at this stage of the Program and this would appear to support the case that this overall solution design has had inadequate attention and resource dedicated to it.

Lead Analyst for Census 2016

It was not possible to identify a single person that has a deep understanding of the requirements for Census 2016 across all aspects of Census 2016. There was no single senior business analyst that is responsible for the collective requirements and driving forward agreement and tradeoffs with the business areas. There is no single person responsible for aligning the requirements between functional silos and integrating those requirements with the ABS 2017 Program.

Test Manager for Census 2016

The Review Team were not able to identify a single person responsible for the test planning and management for Census 2016. The test effort required to ensure a successful delivery of Census 2016 is much larger than any previous cycle. In addition to a change in the operating model, nearly every application supporting the Census has been modified or completely redeveloped. New technologies have been introduced such as mobile application frameworks and open source COTS products. The level of integration between applications is also greater than any previous cycle. All of these factors point to the requirement for a focused, highly skilled test program lead by an experienced and capable test manager.

Recommendation 1 – Resource supplementation (Census 2016 Program)
The Review Team recommends that the capability and capacity of TSD be increased through resource supplementation from one or more technical consulting organisations, in particular the following roles should be filled: **Census 2016 Systems Solution Architect -** The Review Team strongly recommend that a single Solution Architect be appointed who has the time and skills necessary to focus upon bringing together all the pieces of the puzzle and addressing the systems integration risks. This role would co-ordinate with application and infrastructure architecture staff to pull together a single view of the Census 2016 architecture. Identify risks, treat those risks. Identify key decisions and tradeoffs and facilitate the agreement of those decisions with peers. This absence of this role is a major issue and the Review Team recommends that this should be addressed quickly. **Census 2016 Test Manager** – this role is essential to the success of the Census 2016 program. They will create and drive forward the remainder of the test program to ensure that all levels and scope of testing is completed on-time and issues are dealt with by the prime and ABS application and infrastructure teams. Particular focus must be given to systems integration testing as well as non-functional testing within each of the application siloes. **Deep technology expertise** – selective deep technology expertise in particular technologies will be required for short term review, assurance and provision of advice to the TA/TI teams. This would include skills in JBOSS, JBOSS SOA, Oracle, Mobile Application Development, performance tuning, capacity planning and Security for web applications. This type of advice suites the engagement of a consulting organisation as the advice is not required on a full-time basis, but must be timely, relevant and provided by senior experts in the required fields. **Census 2016 Lead Analyst** – a lead Analyst role should be created and possibly filled by an existing senior business analyst. The focus of the role would be on the integrated set of requirements across Census 2016 systems, ensuring that requirements are aligned and prioritised across the systems rather than being focused on individual application siloes. Taking responsibility for the end-to-end operating model, business process and consistency of business rules. The Review Team considers that identifying and appointing an individual with the appropriate skills as the responsible person for this activity would help reduce risk and improve requirements coherence and consistency.

Focus on processes

Governance

Census has a Design Advisory Group and advice is provided through Infrastructure @ ABS. It was unclear to the Review Team where and in whom the responsibility and authority is vested for making key architectural decisions. There were also clear indicators that communication and engagement between TA and TI could be improved with suggestions that occasionally decisions are made by TA with little consultation with TI, e.g. the Drupal adoption. Key decisions are not always clearly communicated (or at least not received clearly) or documented. Whilst a key decision register was found it did not appear to cover the full scope of Census 2016

Recommendation 2 – Clarity of roles (Census 2016 Program)
The Review Team found that the Census 2016 Program would benefit from improved clarity in the roles, responsibilities, accountabilities and reporting lines for both TSD staff, committees and the wider Census team. These should be clearly and consistently communicated to staff and stakeholders when agreed.
Recommendation 3 – Key decision register (Census 2016 Program)
The Review Team recommends that key decisions (both business and technical) should be more formally captured and communicated to enhance the level of consistency of understanding both within the Census 2016 program and the wider ABS/stakeholder audience. A key decision register also improves auditability and traceability of program outcomes.

Performance monitoring

There was no evidence of any application or data centre performance monitoring in place. Better monitoring would enhance the value and benefit derived from the test cycles which are important but also expensive exercises.

The interviews conducted indicated that very little testing of internet gateway has been undertaken for the August 2014 test.

Architecture modelling

TSD use Sparx EA to capture some models, but its use is inconsistent. Despite this the model is evolving and starting to have some good content within it, but there is no agreed meta-model yet, although TSD are monitoring how it evolves. There is no model manager/librarian to

curate and normalise the model and no agreed standards on what diagrams should be produced by the application teams. As a result of this it is difficult to understand from the current model what is 'AS IS' vs 'TO BE' states are for Census 2016.

Recommendation 4 – Improved architecture modelling (Census 2016 Program)
a) Improved governance of architecture artifacts should be implemented by mandating the use of Sparx EA for all architecture diagrams and documents. b) The appointment of a full-time model librarian to manage and curate the Sparx EA library, define its meta-model, and manage its publication. The model librarian would also assist and coach staff on the use of Sparx EA and how to get the most out of it c) Extend the use of Sparx EA to model the enterprise architecture and use it as a key communication tool for the Vision of ABS 2017 Program.

Co-ordination of capacity planning and performance testing activities

Population Census is a once in five year activity that has a very specific high volume and performance requirements that is not usually applicable to most of the other, more frequent or less voluminous operations undertaken by ABS.

Unlike in 2011 eCensus 2016 has a number of newly developed on-line interfacing components, such as Field Staff Management System, Knowledge Management, Contact Management etc. End to end performance testing with all the interfacing components is critical to meet the performance objective.

Co-ordination of these varied testing components, some hosted externally and some internally, is expected to be challenging. A dedicated performance and load testing manager for co-ordination and managing of all planned test activities is we feel critical for overall success.

Building capacity management internally for this one off activity is not likely to be effective. It will be more cost effective to engage an external capacity planning service provider for this complex, voluminous once off activity.

Recommendation 5 – Test and capacity management experience supplementation (Census 2016 Program)
Appoint suitably skilled and experienced personnel, therefore likely to be externally sourced, to fill following roles before the Major Test in August 2014: a) a Census 2016 Program Test Manager, to manage and coordinate all proposed performance and load tests.

b) a Capacity Planner to take on the overall responsibility of Capacity Management of Census 2016 in general and more specifically for capacity planning of internally hosted systems, including co-ordination with prime partner(s) on capacity management.

Software Development

TSD use an AGILE software development method which is focused on functionality and working closely with the business to ensure that the application meets functional requirements.

However, non-functional requirements are not “baked in” to the development lifecycle so that dealing with security, high performance and accessibility are considered later in the cycle leading to rework. This is not as important with the low scale data collections but is essential for eCensus and some of the service oriented components within Census 2016.

Due to the Agile nature of software development it is difficult for the Security Team to know when to review a stable version of an application for threats and risks.

Recommendation 6 – Incorporate non-functional requirements into every sprint (Census 2016 Program)
Design non-functional requirements into the technical application architecture at the beginning and deliver the framework for these non-functional requirements in early sprints. Functional sprints should then be constrained by the non-functional requirements of Accessibility, Security and Performance. Supplement the identified skills gaps in the existing TSD TA team with specialist technology consultants

Security assessment

The review of the SRMP's for the components of Census 2016 identified that threats and risks are only being considered at the application level with no consideration given to the dependant/integrated systems or the Census 2016 system environment as a whole. There is no aggregated risk assessment flowing from the risk assessments.

The application of consequence was not consistent and aligned across application owners. The assessment of the threats and risks did not have the proper or full context applied to them. For example, The SRMP for Provider Management Services rates the consequence of the system being unavailable as Minor, Major or Low. Given the central nature of PMS to the business case system unavailability would be classed as Major-Severe.

The risks being identified don't include system integration risk and flow on effects. This is a symptom of the siloed nature of some of the work being undertaken and the absence of adequate program view from the projects or program overview, something that the appointment of an experienced and strategic Solution Architect would help address.

Some of the existing controls require improvement, and it was not possible to identify who was responsible for incorporating the identified treatments into project scope, schedule and budgets. It was not clear who the owners of the treatments were.

Interview with members of the Security Team identified some additional areas for improvement including:

- The security management team has eleven staff related to Census and their utilisation could be greater with improved program planning;
- The work is not steady with peaks and troughs related to the census test cycle;
- Two of the team members are junior with limited experience;
- There are 12 systems in total for Census 2016 with staff assigned two applications each;
- There are limited skills in the TA teams for secure coding practices;
- There are limited skills in general across ABS TSD with respect to secure coding practices for web applications;
- Challenges associated with incorporating security into an AGILE software development lifecycle, with requests for advice coming late in the schedule.

Recommendation 7 – Single SRMP for Census 2016 (Census 2016 Program)
It is recommended that the nominated Solution Architect and the Head of Security work together on a single SRMP for the Census 2016 system of applications and infrastructure. To consolidate the security threats and risks and ensure that the treatments to those risks are incorporated into the solution designs, schedules and funding for each of the components of the Census 2016 system. This activity needs to address the Integration Risks that exist in the Census 2016 system.
Recommendation 8 – Review security capability (Census 2016 Program)
The Review Team recommend a more detailed review of the operation and staffing of the security team to ensure that its staffing levels and skill levels are correctly aligned with the needs of the Census 2016 program.

Documentation

All documentation seems to be largely managed in Notes DB which appears well structured but siloed.

Documented NFRs need to be further validated and missing data and details obtained (or derived). Accuracy of the NFR data is critical for Capacity Planning and for effective performance and Load testing.

The Review Team holds a general concern that documentation was not well maintained or developed in all cases with a tendency for staff to rely upon 'what is in their head' rather than agreed, base-lined documents that were used as the basis for communication and common understanding.

Recommendation 9 – Improved documentation (Census 2016 Program)
Greater attention should be provided to building and maintaining documentation that acts as the baseline for communicating and achieving common understanding of key Program information such as structures, models, decisions and plans.

Performance and load test

According to the current plan, no further performance and load test, beyond August 2014, are planned. During interviews with ABS staff however, all agreed on the need to have at least one end-to-end performance and load test before the main event in 2016, as was done during the previous eCensus in 2011. RevIT were involved in undertaking a number of performance testing related tasks in early stages of the 2016 Census as well earlier Census cycles and we understand that there is a contract which will enable their ongoing use.

eCensus 2016 is expected to be more than double the on-line transaction volume and complexity compared to 2011. With the addition of the new in-house developed systems being used for the first time, it is critical that a minimum one, preferably two, end-to-end performance and load tests are planned well before the final event in August 2016. Timing of the test should be such that it allows for sufficient time to adequately address any issues that may be encountered during the test.

Some key software technology decisions are expected to be finalised after the Major test in August 2014. There is a significant risk that any further delays in the decision will have significant negative impact on the effectiveness of key testing activities leading up to Census operation in 2016.

Recommendation 10 – Technology decisions (Census 2016 Program)
Prompt finalisation of pending technology decisions, including areas and extent of prime partner involvement and end-to-end performance and load testing plans is critical. It will give clarity on areas that will be managed internally, allowing ABS to focus their time and effort on effectively managing the key life cycle tasks - development, testing, and capacity management, of those systems.
Recommendation 11 – Test planning (Census 2016 Program)
Develop a high level test plan (part of the recommended Lead Test Manager role responsibility) for the Census 2016 test program, starting with Major test planned in August 2014 and incorporate plans for initial load testing of internally managed systems, preferably during the latter part of this year. Plan for an initial load testing of internally managed systems during later part of this year. Plan for a final end-to-end performance and load test, including the prime partner hosted systems, well in advance, preferably during later part of 2015. This is to give sufficient time to address any technical issues that may be encountered during the test.

Capacity planning

ABS does not yet have a formal capacity planning process for managing Census 2016 capacity requirement. Adequate tools however exist to implement an effective capacity planning process. Assistance of an external capacity planning service provider would be very beneficial.

ABS needs to immediately develop capacity plans for internally managed systems that are not outsourced.

Majority of these ‘internal’ systems are being developed and used for the first time and hence lacks necessary historical data required for capacity modelling and planning. One way to get the required data is through performance and load testing. Hence planning for a load and performance test of systems that will be ‘managed’ internally within ABS will be very useful. It can serve dual purpose for use in capacity planning and performance and load testing.

Recommendation 12 – Capacity management (Census 2016 Program)
Develop a capacity management strategy now for Census 2016 to leverage data collected

during the major test in August 2014 and load testing of internally managed systems (recommended for implementation during the latter part of 2015).

Technology

Datacentre and Communications

TI is selecting a new hardware provider for the ABS data centre. The interviews suggest that TI believe that the current environment can support the August 2014 test but not eCensus 2016.

From our interviews and the experience of the 2011 eCensus we understand that bandwidth issues into Canberra suggest Sydney as a better location for the eCensus 2016.

Interviews identified that the Sydney ABS site will require, although selected for its data centre capabilities, a large amount of work to fit it out as an appropriate data centre. In addition there is no TI staffing in Sydney and relocating any existing TI staff to Sydney will require funding of staff relocation.

Recommendation 13 – Prime partner to provide the data centre (eCensus)
Outsource the data centre for eCensus 2016 to the prime partner as part of their vertically integrated service offering. This ensures that the prime takes full responsibility and accountability for the performance levels of the eCensus 2016 solution. A single prime managing a complete vertically integrated offering removes any sub-contractor performance risk.
Recommendation 14 – Use of ABS logical data centre (Census 2016 Program)
Given the recommendation (13) to place the eCensus data centre with a prime partner, ABS should consider whether it is necessary for the remainder of Census to be supported, by the second ABS Sydney in addition to the ABS Canberra data centre. Concentrating Census efforts on the single site would help ameliorate any likely future resourcing contention and enable TI resources to be redirected to other areas, including the environment that needs to house the deployment of provider management and workload management services and ensuring the ABS Canberra data centre can handle the traffic that will be serviced by it for Census 2016.

Internet Gateway

The current gateway environment handles low volumes of traffic compared to the requirements for Census 2016. The current gateway environment has higher network capacity than the IBM data centre in Census 2011. The gateway operations team has on-call arrangements in place however dedicated support for Census night will need to be reviewed.

No decision on provider authentication has been made yet and this needs to be addressed.

Recommendation 15 – Assess capacity of ABS gateway environment (Census 2016 Program)
Ensure that the gateway environment in Canberra is capable of handling the incoming traffic for the applications that will be hosted in ABS House, i.e. all applications other than eCensus. Ensure the existing environment has sufficient capacity and operational arrangements to support Census 2016 applications hosted in ABS House.

eCensus

Whilst Blaise is the strategic choice for e-collection it has taken a significant period of time to demonstrate that this is not a suitable solution for Census. This has diverted resources and wasted time in the Census Program, an impact that is still seen in the delayed schedule today.

eCensus requires a solution purpose built for high volume, highly redundant, once every five years. The eCensus 2016 application is changing from 2011 for both functionality and technical architecture. The review team has yet to identify the specific functional changes to eCensus and their impact on capacity and performance.

TI is uncertain about how the eCensus will scale across locations and there is evident concern that the changes being made to eCensus will not scale well.

The Review Team has a concern that there is custom code in eCensus that was built to make Websphere perform that would need to be rewritten for JBOSS. The Review Team considers that it is too late to move to JBOSS from Websphere, the risk being too great when added to the existing risk profile of the Program particularly given the few skills with JBOSS at high volume that exist.

Replicating Oracle database between Canberra and Sydney may not be possible and there is no evidence of structured decision paper around this issue.

Encryption of data is an outstanding issue. Not only will it impact upon the cost of any solution

but is also a broader strategic question for the ABS to consider in regards to the future ICT Strategy of both ABS and the Federal Government. There was a strategic decision taken in the 2011 Census which was the opposite of that taken in 2006. This needs to be clarified before contracting with any prime partner for Census 2016.

The Review Team recommends the outsourcing of the development and ongoing maintenance of eCensus to a prime partner, recognising the following assumptions that we believe apply:

- ABS will never have the resources, nor would it be likely to prove cost effective, to develop and sustain the skills/capability and capacity to run eCensus 'in-house' every five years, as it is counter to the BAU nature of ABS;
- eCensus will become the primary form of collecting population census data and that the electronic environment will continue to become more complex as the range of browsers and devices increases as well as the volume of submissions;
- ABS should be 'agnostic' to the technology used by the prime to build eCensus, only that it meets the desired requirements (functional and non-functional) and agreed service levels and presents the optimal performance versus value choice;
- Blaise is the strategic choice for collecting other survey data collections and that Blaise is likely to never be capable of scaling as it is built for flexibility not scale.

Recommendation 16 – Clear guidance on access to unit level data (Census 2016 Program)
Consider the merits of and make a clear decision, prior to contracting, regarding the 'access to data' requirements upon the prime partner in the light of both Census 2016 and the wider strategic interests of ABS in the context of both ABS and Federal Government ICT strategies.
Recommendation 17 – Outsource eCensus to a prime partner (eCensus)
Outsource the development and ongoing maintenance of eCensus to a prime partner. Consideration should be given to outsourcing for more than one cycle.

Call Centre Application

The application is currently being built and tested by TA. It appears to be a simple application that does have a high concurrent user load and makes extensive use of provider management services and tight integration with Drupal.

Application architecture does require some expertise in high concurrent users and therefore transaction design and performance, the existing team has the capacity and has most of the capability it needs. Despite this, this is a key area of risk, if the call center application fails before the call centre does than the ability to redirect field collection staff becomes limited. Therefore, although the TSD TA team has good level of capability and the capacity to deliver the call centre application, there is an opportunity to make use of deep technical expertise to ensure it is architected for high performance and the delivered code works. Due to the tightly integrated nature of the Call Centre Application with back-end services it is not practical to outsource this component to the prime. It is less practical in the context of that prime being IBM as IBM has limited capability across the technologies that are being used in the call centre application.

Recommendation 18 – Skills supplementation for call centre application (Census 2016 Program)
Give consideration to supplementing the skills in the call centre application team to ensure that the delivered solution will not fail prior to the Call Centre failing. Be clear about the fall back strategy for the call centre application and ensure it is well communicated to both the selected call centre operator and Census 2016 program staff.

Provider Management Website

Current selected technology is Drupal/LAMP for the August 2014 test. TA has limited capability in Drupal and very limited capability in LAMP infrastructure. In addition TSD has very limited experience in running Drupal infrastructure at scale.

Given the above and recognising that that the provider management website is a component of eCensus and will only ever be required during a Pop Census, the Review Team recommend that the requirements for external facing provider content be included within the scope of the prime partner. It is suggested furthermore that ABS should not constrain the technology choice for provider content to Drupal, let the prime decide the technology based on them taking the responsibility for its performance. Recognise that the Drupal platform can still be used for the broader organisation requirements with respect to knowledge management websites for the abs.gov.au or field collection staff website or other collection activities. Focus website resources to the Field Collection website which has a much smaller footprint and different capacity requirements.

Recommendation 19 – Include provider content in the scope of the prime (eCensus)
Include the requirements for provision of provider content via the web within the scope of the prime partner. This would include the Census landing page and other static content required by providers.

Mobile field force and bring your own device (BYOD)

Mobile BYOD is a new area for TA/TI and that the industry is likely to change a lot in two years leading up to the Census 2016.

With the ABS going to tender for a new enterprise mobility management solution, ABS need to make sure the contract span does not impact on Census 2016.

Recommendation 20 – Mobile expertise supplementation (Census 2016 Program)
Seek additional expertise from the prime partner to assist with QA and advice on an as required basis to solve issues that come out of testing.

Systems integration

The operating model for Census 2016 relies on the information systems being more connected than ever. This results in the systems integration risk being higher and the potential for catastrophic failure has consequently increased. As systems complexity increases so does the amount of testing that needs to be performed.

There is no evidence of any analysis of the anticipated traffic loads between interconnected systems and the resulting capacity required of those interconnected systems.

Recommendation 21 – Other expertise supplementation (Census 2016 Program)
Seek additional expertise to review and provide technical advice and skills with respect to service oriented architecture and service design, deployment, monitoring and tuning. Stochastic modelling of the Census 2016 ecosystem should be undertaken to better understand how the system might perform under load based on understanding of the traffic generated between connected applications. This is a capacity planning task and feeds into the TRA of the SRMP's and resulting treatments. This work could be extended to what-if analysis that would show how vulnerable the ecosystem is to outages in one or more of the

systems components.

Provider management services (PMS)

The Provider Management Services (SOA) in the architecture have not been loaded tested and they showed issues in the 2013 test. This combined with the fact that TSD do not have the skills to scale a SOA into a high availability environment at a single site presents significant risk.

PMS is central to the success or failure of Census 2016. A large number of systems rely on it and it is central to the new operating model. Specifically it is central to tasking field staff via their mobile application.

Recommendation 22 – Focus skills and effort on back-end services (Census 2016 Program)
Seek additional expertise to supplement the existing back-end services team with additional resources skilled in the development of highly robust, resilient and scalable web service architectures. Have an external party take responsibility for the performance of this component within the constraints of this component running on ABS infrastructure and use of ABS resources for build and test.

Application performance monitoring (APM)

ABS has over the years successfully utilised public domain software in developing key systems, including those proposed for eCensus 2016. A good level of internal expertise also exists in those. However there is a lack of appropriate Application Performance Management (APM) tools to assist with managing performance of systems developed using this software.

Recommendation 23 – Implement application performance monitoring (Census 2016 Program)
The Review Team recommends that ABS identify suitable APM (Application Performance Monitoring) tools for implementing in key software platform such as jBoss; Drupal; BLAISE. Something like Compuware Dynatrace could be useful here. However it is a lower priority in the context of outsourcing the high volume elements of the architecture to a prime partner.

Budget

The overall Census 2016 budget has been rescheduled from previous Census cycles to bring forward expenditure to assist with the systems and process development projects and in recognition of the fact that the field staff numbers will be approximately halved in number in 2016 from that of 2011. This is a sensible step. The Review Team was informed that the overall funding for Census 2016 is approximately $50m lower than for 2011. This recognises the requirement for efficiency savings to be made (largely though the increase in eCensus submissions and resulting reduced demand for field staff).

Reviewing the TSD Census budgets specifically, the Review Team have concerns that the overall TSD budget and resource estimation processes are not well developed enough and that the underlying assumptions need to be subjected to rigorous challenge. There was significant evidence in the interviews that a number of people had little faith in these estimates. The Review Team regard the budgeting assumptions related to supplier costs, e.g. third party testing costs remaining unchanged, are likely to be proven wrong given the increased scale and complexity of the IT components, their increased integration and therefore increased testing requirements.

Recommendation 24 – Re-budgeting (Census 2016 Program)
Once the scope of the procurement for a prime partner is finalised, a full re-estimation of the associated budgets for the prime partner and all other significant suppliers, e.g. testing, security and call centre should be undertaken and all the underpinning budget assumptions reviewed.

Overall Census 2016 Program

Whilst not directly in scope of this review it proved impossible to put TSD's contribution to the overall Census 2016 Program into context and without some element of consideration of the wider Program. Therefore a 'side report' report has been produced for the Assistant Statistician, Census Branch which highlights findings related to the wider Census 2016 Program that have been identified in the course of this review which, if addressed, should further enhance the potential for success of both the overall Program and TSD's contribution to it.

It is not the purpose of this report to address these in detail however, for the purposes of context the key findings result in recommendations to enhance the following areas as a priority:

- Roles, responsibilities and accountabilities
- Program management
- Program planning

4. Options Analysis

Scope Elements

The following table illustrates the pros and cons for elements of scope for a prime partner. Each element of scope is considered and assessed for value and risk for both in-scope and out-of-scope options. This table then allows for the discussion of many combinations of scope elements.

Additive options	In scope for prime	Out of scope for prime
Skills supplementation for other Census Systems		
Pros/cons	✓ Addresses the skills shortages in the Census team in a co-ordinated way. ✓ Provides access to depth of expertise potentially worldwide ✓ Co-ordinated effort across integrated census systems.	× ABS will have skills gaps that it could try and fill with individual contractors or non-ongoing staff. × ABS will have to focus on creating roles that have responsibility to integrate the Census 2016 systems. × Limited access to a pool of Australian resources which don't necessarily have the depth of experience and equally may not be available or unaffordable.
Risks	• Cultural clash between informal, collaborative, consensus building ABS vs formal, controlling, directive prime partner. • Staff feel they have not been given a chance to solve the problems and withdraw. • The prime does not have all the necessary technical skills.	• A lot of change across the Census systems this year that need to be co-ordinated and brought together. • The increased connectivity between systems results in catastrophic failure of systems during Census resulting in objectives not being met. • Lack of capability to deliver high volume, high performance integrated applications that are robust. • Insufficient skills in TA/TI to implement a SOA architecture that is robust enough to handle projected volumes • A single application fails in the Census 2016 eco-system resulting in failure for all of Census 2016. • BAU work and other program work continues to distract high value resources from the Census 2016 project. • Census2016 project continues to fall behind as

Additive options	In scope for prime	Out of scope for prime
		it is under-resourced. • The new collection method requires Census systems to be up to date in real-time rather than batch to inform the operational management of Census
Call Centre Application Development		
Pros/Cons	✓ Partner brings expertise ✓ Partner takes on responsibility for performance of the business service. ✓ ABS staff can be redeployed to other Census2016 applications. ✓ Partner can deliver in the chosen technology constraints. ✓ The call centre application is only used during the Census period.	× The call center application is tightly bound to back-end services making it very difficult to outsource complete responsibility to a partner. × TA/TI has limited experience in the development of call centre applications. × TA/TI resources required to ensure this is tested and deployed so it will not fail.
Risks	• We don't select the correct prime and they fail to deliver these services. • The authentication services delivered by ABS fail to scale on the day causing the call centre application to fail.	• Capacity of TA/TI to deliver the call centre application, 600 to 1200 concurrent connections into the ABS House data centre.
Development, Operation and hosting of provider website		
Pros/cons	✓ Partner brings expertise ✓ Partner takes on responsibility for performance of the business service. ✓ ABS staff can be redeployed to other Census2016 applications. ✓ Partner may choose another web technology to deliver the business service that is more robust. ✓ ABS builds something that can be reused across the enterprise.	× TA/TI has limited to no experience with high volume Drupal implementations. × TA/TI has no capacity within the Drupal team. × Increased complexity of interaction between the eCensus prime and the ABS provider websites.
Risks	• We don't select the correct prime and they fail to deliver these services. • The authentication services delivered by ABS fail to scale on the day causing the Provider Websites to fail.	• Provider websites will not handle the performance requirements of Census. • Requirements for broader ABS use conflict with requirements for Census resulting in little capability being delivered for the wider ABS use. • Run out of time and the website capability focuses on delivering for Census only.

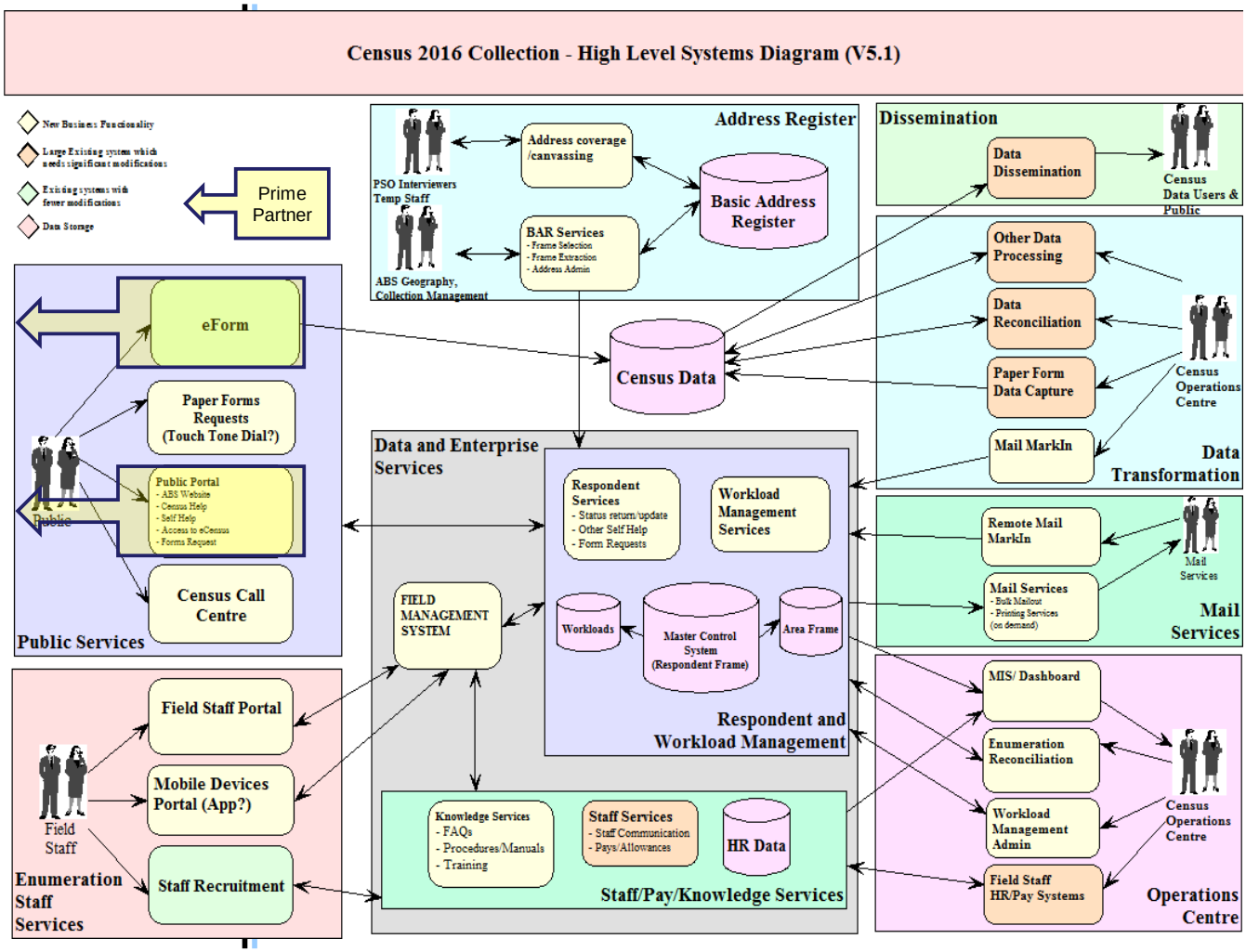
Additive options	In scope for prime	Out of scope for prime
eCensus Software Development		
Pros/Cons	✓ Prime takes responsibility for the service level from application through to infrastructure. No ability for contractual finger pointing. ✓ The prime brings its experience to deliver a fit for purpose eCensus application that is highly performant and built for the purposes of Census collection activities. ✓ Development resources in the eCensus project can be redeployed to other parts of the Census 2016 application environment.	✗ TA/TI has limited capability and capacity with respect to high performance/high volume/high redundant applications and infrastructure across JAVA, SOA, Websphere and Oracle. ✗ TA/TI will need to supplement their skills and experience from individual contractors or non-ongoing employees which will be very difficult to identify and may not be available.
Risks	• Prime will build an application/infrastructure that is fit for purpose, not fit for broader program (therefore need to test the "broader program" assumption) • We don't select the correct prime based on experience and capability and the prime fails.	• TA introduce changes to the eCensus code that results in the application not performing correctly. • The prime hosting partner will not accept responsibility for service levels if the application has been built by ABS. Increases the chance of finger pointing during any contract dispute. • Commission of audit results in additional FTE cuts decreasing the ability to hire staff. • Individual contractors not necessarily aligned with ABS mission and values. They are here for the paycheck only.
eCensus Operations		
Pros/Cons	✓ Prime takes responsibility for operating eCensus during Census period.	✗ Ensuring privacy of data may impose additional costs. ✗ ABS staff will need to agree to operational tempo that is not consistent with existing workplace agreements. ✗ Operational TA/TI staff may need to be supplemented to reduce risk of absence resulting in higher costs over an extended period.
Risk	• Information Privacy risks need to be addressed.	• ABS is thin on capacity wrt TA/TI operational capacity, it is highly exposed to staff absence. • ABS doesn't have the employment agreements in place to operate 24x7 for the period of the Census.

Additive options	In scope for prime	Out of scope for prime
Virtualisation Layer		
Pros/Cons	✓ Prime provides an IaaS environment that is at the control and configuration of ABS TI staff. ✓ ABS doesn't have to install and configure the virtualised layer of the infrastructure. ✓ The necessary compute and storage resources can be scaled up and down as required. ✓ Flexibility - Could use different virtual infrastructure environments based on information classification and need. I.e. Public vs Community vs Private. ✓ No ABS TI staff required at the physical location as access to the environments is remote. ✓ ABS has control over how the virtualisation layer is configured.	✗ ABS need to provision the virtualised environment on the hardware platform. ✗ TI capacity is limited
Risks	• Information Privacy risk needs to be addressed. • Virtualised infrastructure might not be the most optimum way to deliver eCensus compute. Midrange or Mainframe might be more performant and cost effective. • The performance of the virtualisation layer would need to be confirmed that it can meet the I/O requirements.	• Capacity of TI to deliver the required virtualised infrastructure environment in the timeframes.
Physical Infrastructure and Support		
Pros/Cons	✓ ABS doesn't have to procure additional hardware. ✓ Flexibility on how the infrastructure is provided in the contract. Leased, Owned, rented for duration. CAPEX vs OPEX. ✓ Making use of existing vendor spare capacity. ✓ Mix of infrastructure dependent on application requirements. ✓ No requirement for ABS operational personnel to be located where the infrastructure is housed.	✗ Slightly higher cost than if we bought ourselves (CAPEX) ✗ ABS will need to do all procurement and installation of hardware in the procured data-centre. ✗ ABS will need to procure and configure communications. ✗ ABS will need to staff the second data centre location with personnel to maintain the hardware. ✗ TI has limited capacity to deliver this work.

Additive options	In scope for prime	Out of scope for prime
Risks	• Pick the wrong prime and the physical infrastructure is not installed correctly. • ABS TI staff don't have capacity to specify the requirement and accept the built infrastructure into service.	• Capacity of TI to deliver the infrastructure in the timeframes.
Datacentre and Communications		
Pros/Cons	✓ ABS doesn't have to worry about provisioning and testing all the elements of a physical data centre. ✓ A professional data centre and associated operational capability is acquired. ✓ ABS still has flexibility on the design and delivery of the hardware, network and storage. ✓ ABS presence in the 2nd data centre could be limited to only those resources required to look after the hard, network and storage. ✓ Long term relationship with the data centre provider. ✓ There are many choices. ✓ Single contract vehicle.	✗ Sydney office does not get fitted as a second tier 2 data centre. ✗ ABS has to build the second data centre. Sydney is the chosen site for this. ✗ ABS TSD doesn't have the operational agreements in place to run the data centre environment in Sydney. ✗ ABS doesn't have any data centre staff in Sydney, they would need to be hired and located there. ✗ TSD TI have to manage a number of sub-contractors for the provision of data centre elements such as Comms, power, generators, fire suppression, physical security. ✗ ABS has to co-ordinate physical security accreditation with ASD. ✗ ABS House does not have the communication link capacity to host eCensus and potential other provider facing systems.
Risks	• Budget	• Sydney data centre is not correctly rated to house eCensus. • Sydney data centre high risk with respect to physical and fire risks. • TSD TI doesn't have the capacity to configure and test the second data centre.

Recommendation

Include all the elements identified above within the scope of the prime partner. The following diagram helps illustrate what would be within the scope of the prime partner.



Rationale

Once in 5 Years

Census is a once in 5 year activity that has performance characteristics for applications and infrastructure that are at odds with the business as usual operation of the ABS. Most collections in the ABS are small or collected over longer periods of time resulting in systems

that are highly functional rather than highly scalable, available and redundant. Census is a data collection that is collected in a very small window of time. The nature of the Census requires systems that are fit for purpose, that is they are scalable, available, highly redundant and can deal with the volumes required during this small period of time. With the change in collection method to be eCensus by default it is more important than ever, and will continue to be more important in out year Census cycles that technology is capable of meeting the demands of the Census night.

Given that Census requires operating conditions and technology that are different to the BAU funding and operational tempo of the ABS, it would be the Review Team's recommendation to outsource the high volume elements of Census applications to a prime partner. We would see this as a long term position with the high volume Census collection being with a prime partner for 2 or more Census cycles. This positioning will provide greater strategic focus for ABS application and infrastructure architectures providing clarity of decision making and removing the need to build core strategic capability that is both highly flexible and highly performant. The ABS can focus on an ICT architecture that is highly flexible and efficient for delivering statistical outputs from the many data collections under management that don't rely on this abnormal response window.

It takes time to build capability, it is difficult for an organisation like ABS to "ramp up/ramp down" for Census related TA/TI activities. Large primes are more geared towards project based work that ramps up/down. They generally have an amount of spare capacity in their personal and infrastructure that allows them to be more responsive. In addition, TSD has suffered losses to headcount as a result of efficiency dividends, more so in TI, resulting in a lack of depth where the absence of an individual is sorely felt across BAU operations and projects.

Expertise in depth

Although TSD has some very talented individuals, their number is relatively small in comparison to the demands and they are already thinly spread. Based on interviews it is the view of the Review Team that TSD do not have the necessary skills in specific areas to guarantee in such a high risk high profile program the delivery of high performing, highly scalable applications required by eCensus. These skills are:

- Database tuning
- Service Oriented Architecture
- Detailed application design and development for high performance

Prime Partner Procurement

Findings

In order to secure the most appropriate prime partner, the primary decision would normally be the scope and the nature of the support that ABS required. This in turn would inform the decision as to the most appropriate procurement option(s) and thus the decision on the optimum timing.

In early 2012 it was a stated aim to have “fully working systems by August 2014”. The Review team considers this to be unachievable and demonstrates slippage from the original ambitions and timescales. Furthermore, given the capability and capacity constraints within TSD identified in this review, the Review Team believes that without the aid of an appropriate prime partner providing significant support in the form and scope suggested above, achieving this aim, even by August 2015, would be at significant risk.

The Review Team considers that the original prime partner procurement plans (early Census 2016 plans from 2012 indicated an August 2013) have been delayed as a result of a time taken in relation to key decisions relating to the potential use of Blaise and the scope of any prime partner procurement. Interviewees generally recognised that it would have been desirable to have had a prime partner ‘on board’ sooner than is now achievable. By comparison in the 2011 Census IBM were on site in February 2009, the equivalent to 3 months ago in the 2016 Census cycle.

The Review Team have found consistently, in the interviews undertaken as part of this review, that there is an inadequate degree of clarity and consistent agreement over what ABS will do and what should be in scope of the prime. This is, to some extent, understandable given this is within scope of the review but the Review Team is of the opinion that these considerations should have been concluded by 2013 in order to progress an early and fully competitive procurement. The initial ambition for ABS to ‘go it largely alone’ with Census 2016 has gradually given way to a general recognition that ABS requires the access to in depth skills and experience in the areas described above that ABS lacks and cannot readily acquire or ‘ramp up to’ itself. Added to this the discipline in program and project management and associated behaviours around planning and documenting decisions and designs which IBM brought to the 2011 Census were clearly advantageous.

Whilst issues such as the lengthy and protracted debate as to whether to use Blaise to deliver eCensus 2016 have clearly been a factor in the delays in scoping and seeking to procure a prime partner but also the absence of a clear critical path for decisions and actions has contributed to a movement of the schedule to the right (delays) and a consequent increase in the risk profile of the Program.

Timing of the procurement is therefore now a far greater driver of the procurement approach than ideal.

There is no clear set date in the Census plans for the prime partner to commence, but broadly there is agreement that solutions need to be in place by April 2015 for lock down for the Dress Rehearsal in August 2015. If this assumption is valid then, realistically this means that the latest a prime should start would be October 2014 to allow for six months for development, even this in a program of this high risk and profile only adds further to the existing risk profile and is less than ideal.

Whilst a key factor is the scope of the work, the responsibilities and therefore the risk to be transferred to the prime partner the later the procurement is undertaken the greater the risk that is posed, for both parties, particularly in ‘on boarding’ a new prime partner who is unfamiliar with ABS and/or the Census requirements. Therefore any further delay in procuring a prime partner is best avoided.

Options

The procurement options can be summarised as follows from the most time consuming to the quickest:

Open tender

This would normally be the option of choice given the opportunity to generate competition, value for money and, where required, innovation from the supply market.

Whilst the market scan revealed there are some potentially capable suppliers interested in bidding for this work and thereby generating competition, there were also substantial reservations expressed as to whether ABS would genuinely consider alternatives to IBM. In addition some expressed reservations as to the overall likely revenue value of any contract

balanced against the risk (largely reputational) and showed greater interest in the wider transformation program (ABS 2017).

The timescales will be critical with an open tender. Were the market given the minimum four weeks to respond there is a risk that this procurement may be interpreted as purely a device to drive down the perceived incumbent's price and may therefore attract little or no genuinely capable responses. A longer response time of six to eight weeks would be likely to prove beneficial in securing a higher quality and volume of responses however this would have a negative impact upon the overall schedule of 'on boarding' a prime partner.

An open tender procurement should therefore be considered. The benefits of this procurement route must however, be weighed against the cumulative risks of the Census 2016 program and in particular the risks of further delays to the schedule and of 'on boarding' a new prime partner in such a constrained timeframe prior to the 2015 dress rehearsal.

Prequalified tender (formerly select tender)

The market scan has assisted in identifying the most likely potential prime partners in terms of capability and interest. Consideration was given to the potential to select two or three of the most suitable suppliers to tender for prime partner role in order to generate competition without the extended timeframes that publishing 'an approach to market' would require. The nature of this market scan does not appear adequate to justify, under Commonwealth Procurement Rules, the selected approach to a short list of potential tenderers.

This option has therefore been discounted and is not recommended as a potential procurement route.

Limited tender (formerly direct source)

This procurement route has the potential to ensure the quickest engagement of a prime partner and thereby avoid increasing risk to the program as described in the open tender section. There is a positive benefit, given the constrained timeframes, in a supplier who has existing experience of delivering the requirements of eCensus, of working closely with ABS and delivered a working solution. The negative is of course the lack of competition that this procurement approach would bring.

The Review Team considers that, subject to meeting the conditions for a limited tender under the Commonwealth Procurement Rules, this route should be given serious consideration as a risk mitigation strategy in comparison to an open tender.

Recommendation

If the scope and requirements can be finalised in May and an open tender issued in June with a relatively short response timeframe of six to eight weeks, there are likely to be some competitive responses. Even an optimistic open tender procurement schedule however is likely to result in a new prime starting late in 2014. Should any significant delays occur in the procurement process at any stage, this would almost inevitably push the prime's engagement back into early 2015 and present increasingly significant delivery risks, particularly with a new prime partner.

The timeframe constraints combined with increased schedule risk of this procurement approach and the risks inherent in any new and untested/inexperienced (in the Census and/or ABS) prime partner suggest the open tender approach would have been lower risk if commenced no later than early 2014. The potential for an open tender procurement to increase risk to and create issues for the eCensus element of the program is therefore significant.

The Review Team recommend therefore that ABS should give serious consideration to whether a limited tender to IBM should the primary option for reducing risk of an already high risk program. Clearly ABS will need to consider carefully whether this can be justified under the limited tender conditions of the Commonwealth Procurement Rules (CPR).

Market Scan

A detailed scan of the market for vendors that could satisfy the requirements was undertaken. The scan was limited to organisations that have an Australian presence and could fulfil the requirements of the recommended scope. The scan identified the vendors listed in table. Detailed interview notes where taken and available separately to this report.

Vendor	Parent	Global Workforce	Australian Workforce	Interviewed	Comments
IBM	American	430,000		Yes	Ran 2006, 2011 no incidents very positive experience for both parties. Proven. Vertical integration so less sub-contract risk.
Microsoft	American		100	Yes	Demonstrated a capability and capacity to deliver on the requirement. In addition where interested in "skin in the game" and saw eCensus as a trophy project they would be willing to co-invest in.
Fujitsu Consulting	Japanese	170,000	5,000	Yes	Focused on large managed service engagements and critical infrastructure hosting in their Sydney data centres. Very broad offering. No strong preferences other than satisfying what the customer asks for.
Lockheed Martin	American	140,000	1,000	Yes	Have run USA Census 2010, UK Census 2006, 2011 and Canadian Census. Have built up a statistical framework and intellectual property that has supported all Census clients. Platform has continued to improve and deliver over time. Development is completed from the Census team in the USA.
HP	American			Attempted	Services, testing, hardware. Interesting vertically integrated vendor that is comparable to IBM.
Oracle	American			Yes	Services, JAVA, middleware, hardware. Only interested in selling the "RedStack" at this stage and would need a SI partner to be involved.
Infosys	Indian	145,000	2,600	Yes	More capable overseas than in Australia. Engagements mostly managed services with 30/70 split between onshore and offshore resources.

Accenture	Irish	280,000	3,600	Yes	Business focus is driving transformational change rather than once off applications like Census. Moving towards Managed Services.
Avenarde	American	21,000		No	Pure play Microsoft systems integrator. Recommended by Accenture as a better option.
Unisys	American	40,000	5000	Yes	Have unique public sector experience globally. Have vertical integration capability with own data centre, Clearpath mainframe technology.
Oakton	Australian	1,200	1,200	Yes	Consulting, projects and managed services consultancy. Traditional system integrator that works with technology partners.
UXC	Australian	2,500	2,500	Attempted	Structure of business is divided into service lines that split responsibility for infrastructure and applications. Strongest in COTS Microsoft, Oracle.
Fuji Xerox	Japanese			No	Purchased Salmat. Likely candidate for the call centre partner. Have started moving into large scale managed services such as Passports. Could be a candidate for an end-to-end prime in future years as their intelligent forms processing technology is also strong.
Tata Consulting Services	Indian			No	No presence in Australian Federal Government. Focus is on larger managed service engagements. Very broad capability and capacity but would require leverage of overseas resources.
WiPro	Indian			No	Heavily focused on managed services using SAP.
SMS M&T	Australian			No	Traditionally a management and technology consulting practice that has started to develop some technical capability. Would not have depth of experience.
Telstra	Australian			No	Interesting as they would have the data centres, but their ability to deliver would be questionable. Not core business.
Raytheon	American			No	Mostly military focused.
Boeing	American			No	Mostly military focused.
Optus				No	Mostly data centre, communications and

					infrastructure.
Dimension Data	South African			No	Mostly data centre, communications and infrastructure.
Emantra	Australian			No	ASD approved secure internet gateway provider and pure play hosting provider. Would partner with an SI.
Macquarie Telecom	Australian			No	Hosting, communications, infrastructure. Would partner with an SI.
UberGlobal	Australian			No	Hosting and infrastructure. Would partner with an SI.
Verizon	American			No	Hosting and infrastructure. Would partner with an SI.

This table is more detail about the vendors that where interviewed about the capability and capacity.

Vendor	Data Centre	Infrastructure	Applications	Resource Supp.	Relevant Experience	Capable	Interested
IBM	Own	Own	Own	Yes	Yes	Yes	Yes
Accenture	Partner -	Partner -	Java, Websphere, Oracle	Yes	Not confirmed	Yes	Only if broader program role
InfoSys	Partner	Partner	Java, Websphere, Oracle.	Yes	Not confirmed	Yes	Yes
Oakton	Partner – Dimension Data	Partner – Dimension Data	Microsoft preference	Yes	No	No	Yes
Unisys	Yes – Rhodes Sydney	Have own technology – Clearpath Mainframe.	Java preference	Yes	Yes – Airline ticketing	Yes	Yes
Lockheed Martin	Partner	Partner	Census application .NET, C#.	No	Yes – USA Census, UK Census and Canadian Census	Yes	Yes
Fujitsu Consulting	3 in Sydney long operating leases. Canberra – Fern Hill	Resell most hardware vendors.	No preference, whatever the clients asks for.	Yes	Not really. AEC is a good example but outbound not inbound. Lots of critical infrastructure hosting.	Yes	Challenge to get internal attention.
Microsoft	Yes	Partner - HP	.NET	No	Yes	Yes with a partner	Yes
Oracle	Yes	Yes – ExaPltaform	Java, Middleware, DB	No	No, only through partners	Yes with a partner	Yes

Information that would assist an RFT response

- Details about security requirements and what it practically means in operational terms, not references to legislation;
- Lots of detail about the requirement and or existing solution;
- Data-room to explore 2011 documentation and then question/answer sessions.

Observations from interviews

- One vendor indicated that they could not offer much more than IBM and that they could not offer anything of better value and therefore would be unlikely to participate in any tender process that was only seeking to create competitive price tension. Although we summarised based on our experience this might be the case, to have it validated in interview was interesting.
- It became apparent that some vendors would require a broader role to be interested in the tender process. The eCensus is seen as high risk and potentially of medium contract value therefore the commercial trade-off would need to have other incentives to participate, such as a broader role in the Census2017 program or a longer period of engagement for eCensus.
- Vertical integration might deliver ABS some benefits that are not normally as significant in other tender processes. Given the high volume and high performance nature of the engagement having a vendor with the ability to resolve issues directly from the datacenter to the application is attractive from a risk management point of view. In engagements with lower levels of non-functional requirements, the management of sub-contract risk is limited to delivery risk. With eCensus there is product risk at the Hardware, operating system, middleware, software and network layers. Having a single vendor who is using all their own systems can be seen to remove risk from the delivery of eCensus.
- A vendor indicated that due them not having their own hardware and data centres their ability to make use of spare capacity in a value of money way would be limited and see them at a disadvantage to the incumbent.

Summary table of recommendations

Order of urgency and importance

No.	Recommendation
	Highest Priority
13	Prime partner to provide the data centre
17	Outsource eCensus to a prime partner
16	Clear guidance on access to unit level data
19	Include provider content in the scope of the prime
2	Clarity of roles
1	Resource supplementation
24	Re-budgeting
	Medium Priority
5	Test and capacity management experience supplementation
6	Incorporate non-functional requirements into every sprint
10	Technology decisions
7	Single SMRP for Census 2016
9	Improved documentation
2	Key decisions register
11	Test planning
12	Capacity management
21	Other expertise supplementation
	Lower Priority
15	Assess capacity of ABS gateway environment
8	Review security capability
18	Skills supplementation for call centre application
14	Use of ABS logical data centre
20	Mobile expertise supplementation
4	Improved architecture modelling
22	Focus skills and effort on back-end services
23	Implement application performance monitoring

Interviewee list

Name	Role
Jenine Borowik	FAS Program Delivery Division
Duncan Young	AS 2016 Census Branch
Greg Amie-Fong	AS Program Management Office
Adrian Bugg	AS Data Acquisition & Collection
[redacted]	
[redacted]	
[redacted]	
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Jonathan Palmer	Acting Australian Statistician
[redacted]	
[redacted]	
[redacted]	
[redacted]	

Key assumptions

1. Core eCensus component, on-line digital data capture, is most likely to be outsourced to a prime partner, as was done in earlier Census. In addition other public facing components such as Provider Portal; Field staff Website also has potential for outsourcing.
2. Prime partner will provide the necessary software and hardware platform for undertaking Performance and Load testing as also capacity required for the final Census 2016 event.
3. No formal test plan document for Census 2014 exists. There are no Performance and Load tests planned beyond august 2014.
4. Tools currently available in ABS for capture of infrastructure usage data are adequate for Capacity Planning.
5. Enough capacity is available in storage and virtual server layer to provision for the August 2014 test, including the capacity required for Performance and Load testing.

ICT market scan interview notes

Organisation Name	Accenture
ABN	
Federal Government Sales Contact	[redacted]
Meeting Date/Time	Tuesday 8th April – 12pm
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Meeting Notes	
Number of people in Australia	4000 in Australia 270,000 globally Sydney, Melb, Brisbane. Accenture Australia Holdings Pty Ltd -> Irish Parent
Talk to your hosting capability	No hosting capability, would partner with Telstra.
Who do you use for Secure Internet Gateway services to PROTECTED.	No SIG would use Verizon or Telstra.

JAVA/JBOSS development expertise	IBM's biggest systems integrator 30,000 professionals worldwide. ATO used mostly WebSphere
Websphere Development expertise	Lots, ATO used mostly WebSphere.
Oracle Expertise	Lots of Oracle database experience. Don't really care as it is delivered as part of a broader solution.
Project Management expertise	Lots. Prefer to take accountability for the outcome and have a partnership model. Drive towards aligned behaviour.
JAVA, SOA and Infrastructure architecture expertise	Lots. Most large scale projects use JAVA, Websphere technologies.
Application tuning expertise for high performance java applications.	Dedicated performance engineers based on the platform (SAP, Siebel, JAVA). Had performance issues at ATO for Siebel on SQL and brought together the vendors to solve the performance problems. Have worked with vendors in the past to get patches applied to software to resolve performance issues.
Load and performance testing expertise	As above.
Case studies for high volume mission critical hosting with 99.99999% uptime.	Have done some work with 2010 USA Census around field force data collection. Partnered with HARRIS. Said probably not that relevant. Will look to provide some more examples of Ticketing and Toll systems they have done.
Talk to your Drupal Development Expertise	IRS website in the USA is built and managed by Accenture. Recently acquired FIORD user centre design consultancy to supplement their digital capability. Would not use Drupal and would implement using Sitecore or Adobe CQ5.
- Who would you partner with	NA
Talk to your Drupal Hosting Expertise	NA
- Who would you partner with	NA
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	NA
Talk to your workplace agreements that provide for 24x7 dedicated support	Not geared up on the consulting side to run 24x7 operations. Would look to the infrastructure partner to run these operations.
Explain your recent experience of working with	• SI at the ATO doing ongoing work on Mainframes

Australian Federal Agencies (provide a list).	• DHS – child support system refresh • Defence 2080 – PMKeyS upgrades • Defence – Data centre consolidation – application migration to reduce data centres. • NBN –oracle e-business suite, across the business.
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	Can't see Accenture bringing anything else to the table that IBM can't Would be interested if could contribute to the broader ABS environment/change program, particularly around EDW. Accenture don't have the latent infrastructure capacity like IBM to provide a value for money option.
What information would assist you in responding accurately to an RFT.	• Would not bid if the RFT looks to be just to create price tension against IBM • If there was a broader involvement in the program would be interested in bidding • Their focus is on managed services, such as analytics platform as a Service.
How to work well with Accenture	• Executive sponsorship for change. • Outcomes focused • Mutual respect and focus within the core leadership group (Accenture/Client) Accenture's culture is one that is focused on delivery. The date is all important and interested in transforming a client. Go to market is by industry with technical resources pools by geography aligned to specific technologies and disciplines…i.e. user centre design. Therefore can be problematic to get resources form overseas, or different industry verticals that might have exactly the right experience for the job.
Organisation Name	**Fujitsu**
Parent/Legal	Japanese Parent, legal team is based in Canberra for the Canberra Region Contracts.
Federal Government Sales Contact	• [redacted]

Meeting Date/Time	Monday – 14/4/2014 – 12pm
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	5000, Auz/NZ. 1,000 in Canberra. Second largest employer in Canberra. Infrastructure solutions, business application solution (MS/SAP) and managed services. Most work done on-shore. Some capability off-shore.
Talk to your hosting capability	• 3 x Data centres (long operating leases) in Sydney accredited to T3 • Canberra data centre at Fern Hill. Secure Internet Gateway is at Fern Hill. • Use CDC for DR.
Who do you use for Secure Internet Gateway services to PROTECTED.	Fujitsu is one of the SIGs.
JAVA/JBOSS development expertise	No preference, claim to have capability across Java, Websphere, Oracle. But would prefer the client to specific and they will just find the best people to do the work.
Websphere Development expertise	As above.
Oracle Expertise	As above
Project Management expertise	Have no problem running a turnkey type engagement down to just resource supplementation at the direction of ABS. Culturally they describe themselves as: • In for the longer terms • Take a few hits along the way • Responsive and flexible • Delegated authority to make decisions at the local level. • Did acknowledge that culturally they need to move to “leading” the client more rather than just “responding”
JAVA, SOA and Infrastructure architecture	Bought DMR consulting, they will provide more information on this section. Again, the general flavour is we will find the

expertise	right bodies and provide them into the managed service engagements. Seems to be less focus on technical excellence.
Application tuning expertise for high performance java applications.	Again, they find the right bodies for the jobs, but very thin on deep centres of excellence with respect to disciplines. Have 40 testers at DHS for example…how good they do the job is a different question.
Load and performance testing expertise	As above.

Case studies for high volume mission critical hosting with 99.99999% uptime.	• AEC Website, Infrastructure and outbound communications for the Federal Election.
	  ○ Dress Rehearsals
	  ○ Planning coming into a main event
	  ○ Do the physical infrastructure

Talk to your Drupal Development Expertise	They would build it in whatever the client asked for and just find the right people to do it. Where not firm on any particular technology choice. • City Rail/Transport for NSW – Data Centre and Infrastructure but no the actual website. I suspect their expertise is more on the infrastructure side than on building the web application. • Motor registry – apps and infrastructure
- Who would you partner with	
Talk to your Drupal Hosting Expertise	
- Who would you partner with	
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	
Talk to your workplace agreements that provide for 24x7 dedicated support	Correct operational agreements in place
Explain your recent experience of working with Australian Federal Agencies (provide a list).	• ICON system at DAFF - .NET • PPSR – AFSA (old ITSA) - .NET • Defence managed services – 560 people doing helpdesk, level 2 and some infrastructure • Managed service for CER – 15 year contract, 2 peaks a year during reporting they ramp up for • QANTAS desktop support – 20,000 desktops • Defence FISSO support out of Garden Island
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	
What would be the primary strengths that your	• Some experience in must not fail

organisation would bring to any potential Prime Partnering arrangement with ABS?	• Ability to make decisions locally • Very responsive and flexible • Breadth of skills and capability • Stand behind the SLA's
What information would assist you in responding accurately to an RFT.	• What are the preferences for the technology. Will help them get the right people • Spend more time to ask questions and review material to identify if they should actually bid for the work • Clarity around the security requirements.
Organisation Name	**IBM**
ABN	
Federal Government Sales Contact	[redacted]
Meeting Date/Time	Monday – 7/4/2014, 10:45am to 12pm.
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	

Meeting Notes	• [redacted] bough with him the IBM closure report for 2011. SDDT240 – Project Completion Report v2.0 – 1/11/2011. A copy of which has been requested from ABS for review.
	• Viewed by IBM as one of the most successful projects and best example of public/private partnerships
	  ○ Good relationships
	  ○ Changes to scope/issues were worked through together with a common goal
	  ○ Clear scope
	  ○ ABS let IBM come up with the solution architecture and design, did not provide any technology constraints
	  ○ IBM provided vertical integration from software, through to hardware, through to data centre meaning there

	were no other parties to negotiate with. Reduced risk. Addressed the 2006 lessons learned around separating the hosting vendor and the software vendor.
	• Delivered the project out of the Burwood data centre – which they still have, and was configured to be highly redundant so that it could meet the SLA's barring force majeure.
	• Software was built in Ballarat solution centre – which they still have
	• eCensus was architected specifically with bringing information in, rather than pushing information out
	• There was not enough internet bandwidth to host the solution in the ACT. This could have changed but they doubt it.
	• 2011 interpretation of the record security onerous. Outside parties could not even access encrypted data. This was probably a bad decision and a move back to the 2006 position would be better.
	• Changes for 2016 that need specific focus
	  o Mobile device support
	  o Multiple browser and browser version support
	  o Volumes are higher
	• Changes to IBM stack
	  o P-series have moved on, and would consider IBM Blades as an option
	  o Would consider using a different encryption solution as the HSN devices have moved on.
	  o Would move back to java, WebSphere and DB2.
	• Specifics about this solution are what drive the complexity
	  o Security of the data in motion and rest
	  o Account for anywhere in the solution where the data was "in the clear"
	  o DDOS attacks protection
	  o IBM could underwrite performance guarantees as they had control over the entire stack. No external risks, could not do this if where forced to us another technology such as JBOSS or Oracle.
	  o IBM admitted they have little experience in JBOSS at these sorts of scales and indicated that there are probably not many vendors that do. Worried that if they had to use JBOSS they would use up all their time learning about how it performs at scale and fixing those issues during testing resulting in not being ready…not enough time.
	• IBM have responded to a number of bids more recently being"
	  o Acquire
	  o Data warehouse RFT
	  o Hardware RFT
	  o Mobile response RFT

Number of people in Australia	
Talk to your hosting capability	Still have Burwood and would use this again.
Who do you use for Secure Internet Gateway services to PROTECTED.	Don't have one, but is not required for the ABS work as it is about addressing specific risks.
JAVA/JBOSS development expertise	No JBOSS expertise at scale…would be learning on the job
Websphere Development expertise	Lots
Oracle Expertise	Some but preference is IBM DB2
Project Management expertise	Lots
JAVA, SOA and Infrastructure architecture expertise	Lots
Application tuning expertise for high performance java applications.	Lots
Load and performance testing expertise	Lots
Case studies for high volume mission critical hosting with 99.99999% uptime.	eCensus 2011
Talk to your Drupal Development Expertise	Would pick their own web technology to suite the requirements.
- Who would you partner with	NA
Talk to your Drupal Hosting Expertise	NA
- Who would you partner with	NA
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	NA
Talk to your workplace agreements that provide for 24x7 dedicated support	Correct operational agreements in place

Explain your recent experience of working with Australian Federal Agencies (provide a list).	ABS experience is most relevant.
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	Done it twice before. Long relationship with ABS that is successful. Confidence in each other.
What information would assist you in responding accurately to an RFT.	• What tradeoffs are ABS prepared to make given engagement is later than 2011. • Early position on security requirements
Organisation Name	**Infosys**
ABN	Australian operating entity. Indian Parent. No exposure to Patriot Act.
Federal Government Sales Contact	• [redacted]
Meeting Date/Time	Tuesday 8th April, 9am to 11am
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	• 20 in Canberra • 2600 in Australia, mostly Sydney and Melbourne with some in Brisbane • Services include resource supplementation, projects and outsourcing • 150,000 globally

Talk to your hosting capability	Typically partner for hosting services as we have no hosting facilities of our own. Would partner with Telstra, Macquarie Telecom or Next DC. No preference on hardware.
Who do you use for Secure Internet Gateway services to PROTECTED.	Not sure but would partner.
JAVA/JBOSS development expertise	20,000 application developers worldwide. Usual model is to do 30% onsite/70% offsite in India. Space for 50 in Sydney and 50 in Melbourne. Most staff are on-site at the client or offshore. No very specific about actual expertise.
Websphere Development expertise	Not sure will get back to you.
Oracle Expertise	Mostly Oracle – Siebel, Oracle e-business. Not sure of Oracle database experience.
Project Management expertise	Yes as part of our software development lifecycle.
JAVA, SOA and Infrastructure architecture expertise	Not sure will get back to you.
Application tuning expertise for high performance java applications.	Not sure will get back to you.
Load and performance testing expertise	Not sure will get back to you.
Case studies for high volume mission critical hosting with 99.99999% uptime.	Probably the Indian Tax Office online portal that takes 20 Million etax returns. Needs to check how similar in operational tempo it is. Other examples of work include: • Transport for NSW Trip Planner website – high volume website, not inbound • ANZ mobile banking application iOS
Talk to your Drupal Development Expertise	Not sure will get back to you.
- Who would you partner with	Not sure will get back to you.
Talk to your Drupal Hosting Expertise	Not sure will get back to you.

- Who would you partner with	Not sure will get back to you.
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	Not sure will get back to you.
Talk to your workplace agreements that provide for 24x7 dedicated support	Yes have necessary employment conditions for operations.
Explain your recent experience of working with Australian Federal Agencies (provide a list).	Only recently started building a presence in Federal Government in Australia. Unisys focus has been commercial sector in Australia.
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	Will sub-contract where required to deploy the capability to the customer. Telstra we have integrated project teams doing AGILE development.
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	• Delivery focused • Not that cheap but value for money • Can actually deliver capability from a global base as we don't have any internal business rules that stop the transition of resources • Well-funded, no debt with cash in the bank such that we can do innovative proposals.
What information would assist you in responding accurately to an RFT.	• Plenty of detail • Opportunity to engage with the business stakeholders to assess culture and fit • Contractual flexibility to solve the problem • 8 weeks to respond • Our legal is reasonably responsive now that we have employed Australian legal specialists with government knowledge. • No issues with the Patriot Act • Would want to know if we can do development offshore, mixed team.
Organisation Name	**Lockheed Martin**
ABN	American Parent
Federal Government Sales Contact	[redacted]

	[redacted]
Meeting Date/Time	Friday 2 May 2014, 8:30am
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	- About 700 to 1000 in Australia - Engineering hub in Melbourne – couple of 100 servicing TS customers - Mainly servicing ATO, Automated train systems, it security consulting 120,000 worldwide 47 Billion turnover - No1 provider to USA government High end engineering is the core of their business Very knowledgeable of the Census domain, especially the broader model. Own IT security monitoring/NOC. Systems integrator on the IT side of things. Staff augmentation is not the preferred model, they want to achieve an outcome.
Talk to your hosting capability	CDC for hosting capability. Partner for data centre. Datacom. Those on the AGIMO panel.
Who do you use for Secure Internet Gateway services to PROTECTED.	Have not had the need yet.
JAVA/JBOSS development expertise	Melbourne engineering centre is doing intel work. Some on JAVA. Census solution is C#. 90%. JAVA 10% internet bit. × Common code base that has been built on over time × Paper capture × Costing model × Printing × Coding × Turnkey

	× Internet response channel (is JAVA on Websphere on Oracle) × Telephone – IVR, plus call centre dealing with questions from the public × Edits × Security architecture
Websphere Development expertise	Will come back with some detail. Broader capability in the USA. – e.g. program for customs modernisation
Oracle Expertise	Will come back with some detail Oracle backend for the census applications. Data Architect has been on program since 1998, nearly 16 years' experience on Census applications using Oracle.
Project Management expertise	Clearcase, clearquest. Team with in country partners In country PMO and integrated project teams. Subject matter experts embedded where required. Systems Engineering Approach for Census × Build, unit test done in the USA × Integration and Acceptance test done in country × Have moved from Waterfall to AGILE over time within the Census team Project Management Method × Centre of excellence for program management × Follow PMI certifications for staff × Artemis ITIL for Service Management
JAVA, SOA and Infrastructure architecture expertise	Strong around security and hardening of servers. Desktop support knowledge at ATO not relevant CP for Defence. IBM hardware platform (USA 2000, USA 2010, UK) - built out the data centre with IBM kit, storage, network etc. built from the ground up.

Application tuning expertise for high performance java applications.	LMA did all the testing and tuning for the Census systems. Don't have a speciality tuning practice.
Load and performance testing expertise	As above. Canada was 200K concurrent users.
Case studies for high volume mission critical hosting with 99.99999% uptime.	Air Traffic Control for the USA. CMMI Level 5. Do Critical Loss of Life type systems – NASA Joint strike fighter
Talk to your Drupal Development Expertise	Not relevant. Use own technology for the delivery of the web components. Would not resource supplement as that is not their approach. Web pages where part of the "Internet eform solution". General Census information agency. Use sharepoint for some knowledge sharing.
- Who would you partner with	
Talk to your Drupal Hosting Expertise	
- Who would you partner with	
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	Same as infrastructure question.
Talk to your workplace agreements that provide for 24x7 dedicated support	Running 24x7 so have work-place agreement in place. Have experience running the 3 shifts overnight.
Explain your recent experience of working with Australian Federal Agencies (provide a list).	
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	UK Census – coding subsystem, data quality and clean it a bit. 32 page form. Single paper facility. Redundant sites for data centre. Managed the field staff end devices (laptops). Canada Census – coding subsystem, data quality and clean it a bit. 30 million forms processing. 52% response rate for online. USA Census – 10 questions, 10 minutes, 1995 first won. Collection bit. 200 Million forms. Not mandatory in the USA, return

	over a period of time about six weeks. 11 call centres, 3 paper forms, primary data centre and backup data centre.
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	Culture × Outcome focused - their mission is our mission. × High engineering skills × Rigorous × Partnering and proactive. Strengths ×
What information would assist you in responding accurately to an RFT.	• What are the interfaces to back-end systems it need to talk to? • Environment expectations (infrastructure and software) •
Organisation Name	**Microsoft**
ABN	Australian Trading Entity. USA Parent.
Federal Government Sales Contact	[redacted]
Meeting Date/Time	Tuesday – 15/4/2014
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	Consulting Services group – 100 Australian, high expertise in Microsoft. Focus is on Microsoft software. Pull partners in to do the actual delivery, don't usually run point/prime themselves. Field Engineers – 50-60 staff in Australia Did not have numbers on world-wide capabilities. Service Delivery Centres in Canberra and Brisbane (small and focused)

Talk to your hosting capability	MS Azure will be deployed in Sydney and Melbourne – still Australian public cloud. Would do a private cloud offering with a partner.
Who do you use for Secure Internet Gateway services to PROTECTED.	Don't have one but would partner for this. Have very clear guidance around the Patriot Act and how MS Australia deals with this. Have in-house security capability.
JAVA/JBOSS development expertise	NA
Websphere Development expertise	NA
Oracle Expertise	NA
Project Management expertise	NA
JAVA, SOA and Infrastructure architecture expertise	NA
Application tuning expertise for high performance java applications.	On Microsoft platforms have significant experience in this space and the core offering of service engineers. Mostly done by partners.
Load and performance testing expertise	Only with respect to Microsoft technology deployments. Not a specialist in this area.
Case studies for high volume mission critical hosting with 99.99999% uptime.	Naplan testing was highlighted as an example. Doing a partnership with HP for vertically integrated software and hardware solutions.
Talk to your Drupal Development Expertise	NA would recommend a MS solution, not confident Drupal can scale.
- Who would you partner with	NA
Talk to your Drupal Hosting Expertise	NA
- Who would you partner with	NA
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	NA

Talk to your workplace agreements that provide for 24x7 dedicated support	Would partner for the 24x7 operations. Ramp Up and Ramp Down suites them. Resource supplementation is not something they do.
Explain your recent experience of working with Australian Federal Agencies (provide a list).	VSA. Most other experience is through partners.
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	Naplan in Australia. Most other experience is through partners. Hala was going to come back with some others.
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	Culture × Technical focus – technical excellence × Collaborative × Short term engagements, long term people in-situ is not good. Strengths × Technical expertise × Ramp up with little cost – compute model is well established × Depth of international experience × Committed
What information would assist you in responding accurately to an RFT.	• Potentially RFI in the first instance • A collaborative step
Organisation Name	**Oakton**
ABN	Australian Public Listed company, majority Australian owned.
Federal Government Sales Contact	[redacted]
Meeting Date/Time	• Tuesday 8th 3pm to 5pm.
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently

	undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	100 overall, CBR, Sydney, Melbourne, Perth, Hyderabad. Consulting, Delivery, Managed Services 25years in Australia.
Talk to your hosting capability	Partner with Dimension Data for their hosting and sometimes with Emantra. They usually do the managed service from the operating system upwards. Managed services out of India, although some capability here.
Who do you use for Secure Internet Gateway services to PROTECTED.	Have a security practice with IRAP assessors. Can provide all the necessary security advice required.
JAVA/JBOSS development expertise	Do have capability in the IBM and Oracle stack as they are a partner. But their preference would be a Microsoft based solution built on Microsoft and Intelledox.
Websphere Development expertise	Some, but not their preference
Oracle Expertise	Some, but not their preference.
Project Management expertise	Lots of experience in project management and running engagements at Federal government.
JAVA, SOA and Infrastructure architecture expertise	Some experience • Country energy architecture • Defence –ehealth oracle stack
Application tuning expertise for high performance java applications.	Not a specific service line, but have performance tuning capability. But depends on the stack.
Load and performance testing expertise	Have a strong testing practice in Australia with leadership out of Canberra.
Case studies for high volume mission critical hosting with 99.99999% uptime.	DVS for AGD's which is HA and Secure, but not high volume yet.

Talk to your Drupal Development Expertise	Not confident in Drupal as resources are hard to find. Would recommend using Sitecore (.NET CMS)
- Who would you partner with	
Talk to your Drupal Hosting Expertise	
- Who would you partner with	
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	NA
Talk to your workplace agreements that provide for 24x7 dedicated support	Correct operational agreements in place
Explain your recent experience of working with Australian Federal Agencies (provide a list).	Experience across federal government in consulting, delivery and managed services. Doing work at DFAT, Austrade Dynamics CRM, FOI for AFP on Dynamics CRM.
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	Have resolved issues in the Microsoft Stack where bugs where found in the underlying Sharepoint 2013 product. DVS currently has issues with the IBM MQ software and they are working with IBM on solving those issues.
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	Breadth of capability Bring Dimension Data for infrastructure More senior staff as they have a flatter organisation Security cleared staff
What information would assist you in responding accurately to an RFT.	• Want to understand the broader business process • What is the design of the eCensus form • Lessons learned from previous census.
Resource Sharing	• They can onshore their Indian team using 457 visas. • Can resource share between locations….but did not sound like an easy thing to do.
Cultural	Oakton described their culture as collaborative, working in partnership and flexible to work within the methods and processes of the client.

Organisation Name	Oracle
Parent/Legal	American Parent. Legally very risk adverse and difficult to deal with.
Federal Government Sales Contact	• [redacted]
Meeting Date/Time	Tuesday 15th April 2014 - 9:30am
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	Could not speak to number of staff in Australia or Overseas. Most of their numbers are focused on product development and product sales. He talked to a number of different divisions those most relevant included: • Oracle managed cloud services team in Sydney • Oracle Consulting Services • Client Advisory Services

Talk to your hosting capability	• Lease rack space from 2 data centre providers in Sydney for their Oracle Mgt Cloud Services.
	  ○ Cloud services currently public and private, but not government community cloud
	  ○ Can do dedicated private hosting by the Cloud Services team for kit owned by the customer
	• Could not talk to security, would need to provide more information about how security accreditation would be done for an ABS deployment. But did comment that a number of their software and hardware is EAL4 certified.
	• PaaS environment is built on Engineered Software/Hardware combination now called ExaData platforms.

Who do you use for Secure Internet Gateway services to PROTECTED.	They would leave this up to the prime partner to organise any security services.
JAVA/JBOSS development expertise	Work with an Oracle partner for any development work, but provide deep java expertise from the OCS division.
Websphere Development expertise	Work with an Oracle partner for any development work. Would suggest a migration from Websphere onto weblogic.
Oracle Expertise	Work with an Oracle partner for any development work, but provide deep Oracle expertise from the OCS division. Noted that if PaaS was purchased then the OCS team deal with most if not all the technical related performance and tuning

	requirements of the environment.
Project Management expertise	Let the partner do this, they will provide some recommended names.
JAVA, SOA and Infrastructure architecture expertise	Let the partner do this, they will provide some recommended names. Did say they would get some references to us where they have converted JBOSS/Websphere implementations to weblogic.
Application tuning expertise for high performance java applications.	Oracle consulting services in conjunction with a partner or could do direct depending on how the engagement was structured.
Load and performance testing expertise	Would rely on Partner. Oracle has software that can help…enterprise manager and real user insight monitoring (similar to Compuware GOMEZ)…any opportunity to sell some more software ☺
Case studies for high volume mission critical hosting with 99.99999% uptime.	• EXAdata platform has been engineered for "cannot fail", would be happy to underwrite the performance guarantees.
Talk to your Drupal Development Expertise	• They would rely on the partner to build the website, but they could host it on the PaaS platform by cloud services team. Have some interesting technologies that be used to ensure it scales such as Oracle Coherence and they have some web content management software that could be used to build the site.
- Who would you partner with	
Talk to your Drupal Hosting Expertise	
- Who would you partner with	
Talk to your Drupal Hosting Expertise in a high volume mission critical "five nines" environment.	
Talk to your workplace agreements that provide for 24x7 dedicated support	Only for the cloud services team. The partner would need to pick up the application operational components of actual Census night.
Explain your recent experience of working with Australian Federal Agencies (provide a list).	• Will get a list of federal agencies but Oracle is in most agencies in once shape or other. • Exadata is only just getting some penetration with Defence and DSS has bought and implementing now, but other than that take-up has been slow. • Oracle struggling to move to a utility compute model like Azure and AWS, but have it in their strategy to get there.
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	Come back with some product case studies around high volume, must not fail systems such as ticketing, toll etc.

What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	• Product expertise from TIN to platform • Deep knowledge of technology with OCS in conjunction with a partner. Culturally • Transactional -> trying to move more towards a strategic. • Risk adverse – hard to deal with contractually
What information would assist you in responding accurately to an RFT.	• Will come back to us.
Organisation Name	**Unisys**
ABN	American Parent
Federal Government Sales Contact	[redacted]
Meeting Date/Time	Friday 11th April, 9:30am to 11:00am.
Give Background	We are acting on behalf of ABS to assist them with procurement of a prime partner for Census2016. We are currently undertaking initial market research to determine the capability and capacity in the market to determine the scope of the prime partner and those likely to be able to assist the ABS with Census 2016 activities.
Questions	
Number of people in Australia	40,000 worldwide 5000 Australia $4 Billion turnover worldwide. 70% managed services, 30% systems integration Happy to provide resource supplementation as deep expertise for short periods of time, not good at providing bodies for long periods as that just competes with Contractors. - have good PM and program management - have good BA's that are highly trained - deep expertise in some pockets of technologies

Talk to your hosting capability	Have a datacentre in Rhodes, they need to check to what level it is classified. Have own mainframe hardware called Clearpath that is used in "Must not fail" environments Have a new technology called "Forward" that is built on Intel but uses Clearpath technologies, again for "Must no fail" environments.
Who do you use for Secure Internet Gateway services to PROTECTED.	Have their own security capability. But don't have an ASD approved gateway. Have an internet gateway at their data centre but not sure who they partner with for ASD SIC.
JAVA/JBOSS development expertise	Their expertise is more JAVA than .NET. They have a solution centre in Wellington, about 50 people. No solution centre in Australia.
Websphere Development expertise	Lots, Immigration systeJava, Websphere and Oracle
Oracle Expertise	Have broad database expertise across Oracle and SQL.
Project Management expertise	Use PRINCE2 in Australia. They align with the customer where possible. They are open, collaborative and try to solve problems together. They have their own software development methodology.
JAVA, SOA and Infrastructure architecture expertise	Biometrics QLD and Biometrics Immigration are built on SOA architecture.
Application tuning expertise for high performance java applications.	Some capability but normally partner for this deep expertise.
Load and performance testing expertise	Some capability but normally partner for this deep expertise.
Case studies for high volume mission critical hosting with 99.99999% uptime.	70% of the world's airline ticketing systems run on Unisys hardware and software, these are HA "must not fail" type of systems. QLD Drivers licence application is also high volume, must not fail.
Talk to your Drupal Development Expertise	Not a web development company so would likely partner for this.
- Who would you partner with	Would partner
Talk to your Drupal Hosting Expertise	Would partner
- Who would you partner with	Would partner
Talk to your Drupal Hosting Expertise in a high	NA

volume mission critical "five nines" environment.	
Talk to your workplace agreements that provide for 24x7 dedicated support	Correct operational agreements in place as the majority of their work is managed services.
Explain your recent experience of working with Australian Federal Agencies (provide a list).	AEC Gateway environment Immigration Biometrics QLD Drivers licence Biometrics
Are there any comparable projects that you have either been the Prime Partner or consortia member for anywhere (worldwide)?	Airline Ticketing Systems
What would be the primary strengths that your organisation would bring to any potential Prime Partnering arrangement with ABS?	- Size - specialise in "nonstop, does not fail systems" - vertically integrated (DC, hardware, software and application) - understand government, more than 50% of their work is with government.
What information would assist you in responding accurately to an RFT.	• Be very specific, more detail is better • Be very clear about the bar that needs to be set to be successful • Be clear about value of money and what that really means…i.e. "not just the cheapest" • Timeframes and deadlines

End.

Basics

Patrick Hadley/Staff/ABS 23/09/2014 09:13 AM

Send	To Procurement WDB@ABS, cc [redacted], Duncan Young/Staff/ABS@ABS, [redacted] bcc
Subject	Re: ABS2014.105 eCensus and Data Capture Solution Spending Proposal - FOR APPROVAL [DLM=Sensitive:Legal]
Protective Mark	**Sensitive :Legal**
Categories	02 Contracts\2014 100-199\105 eCensus and Data Capture Solution\Spending Proposal

Thank you [redacted]
Spending proposal approved
Patrick

Patrick Hadley

Chief Information Officer

Technology Services Division | **Australian Bureau of Statistics**

[redacted]

Procurement WDB	Hi Patrick, Please find below the spending proposal for the engagement of IBM to deli...	18/09/2014 08:46:26 AM

From: Procurement WDB
To: Patrick Hadley/Staff/ABS@ABS,
Cc: Duncan Young/Staff/ABS@ABS, [redacted]
Date: 18/09/2014 08:46 AM
Subject: ABS2014.105 eCensus and Data Capture Solution Spending Proposal - FOR APPROVAL [DLM=Sensitive:Legal]
Sent by: [redacted]

Hi Patrick,

Please find below the spending proposal for the engagement of IBM to deliver the eCensus and Data Capture Solution. If you are satisfied the proposal would be a proper use of Commonwealth resources, please approve by reply email.

Due to the extremely tight time frames for the commencement of this project, your response is required by close of business Tuesday 23 September.

The ABS is currently finalising the contract details and statement of work with IBM, in order to have an executed contract in place before the end of September.

If you have any questions about the content of the spending proposal, please do not hesitate to speak with me or [redacted]

Thank you and kind regards,
[redacted]

[redacted]

Procurement Officer

Procurement Services and Contract Support | Financial Management | **Australian Bureau of Statistics**

(P) [redacted] **(F)** [redacted]

(E) [redacted] **(W)** **www.abs.gov.au**

The ABS Privacy Policy outlines how the ABS handles any personal information that you provide to us.

[redacted] ABS2014.105 eCensus and Data Capture Solution Spending Proposal [DLM=Sensitive:Legal]

ABS2014.105 eCensus and Data Capture Solution Spending Proposal [DLM=Sensitive:Legal]
Procurement WDB [redacted] 17/09/2014 12:29 PM

Sensitive:Legal

Basics

Protective Mark	**Sensitive:Legal**
Categories	02 Contracts\2014 100-199\105 eCensus and Data Capture Solution\Spending Proposal
Visibility	Limited Readers
Editors	[redacted], Procurement Services
Readers	[redacted], Procurement Services
Document Usage	Technology & Telecommunications - determines recordkeeping action
Last modified	17/09/2014 04:15:47 PM **By** [redacted]
Document Id	IDEK-9P24X8

Edit Logging

Edit Log	17/09/2014 12:29:06 PM; [redacted]; Document created. 17/09/2014 02:30:08 PM; [redacted]; Fields changed: Body 17/09/2014 03:50:20 PM; [redacted]; Fields changed: Body

Spending Proposal for eCensus and Data Capture Solution
ABS2014.105

Administration Details

Reference:	ABS2014.105
Contact/Author:	[redacted]
Alternative Contact:	[redacted]
Contract Manager:	[redacted]
Business Area WDB:	Acquire
Estimated Value (GST inclusive):	$9,606,725, plus 15% contract change contingency ($11,047,727)
F34:	Yes
Contract Period:	2 years
Consultancy Contract:	No
Stakeholders:	Census, TSD
Funding Code:	207
Delegate:	Patrick Hadley

1. Purpose

The purpose of this Spending Proposal is to obtain approval to enter into contract negotiation for a final Statement of Work with the aim of entering into a formal agreement with IBM Australia Limited (IBM) for the provision of services to support the use of the current ABS Online Census solution (as used in the 2006 and 2011 Census) for the 2016 Census.

2. Background

The ABS has implemented an electronic forms solution for the past three Census cycles , the first being a very limited number of households having the ability to complete their census form on line in 2001. This was followed up in 2006 and 2011 with an Online Census solution developed and delivered by IBM, each time the take up rate of the respondents more than doubled and the solutions proved to be very successful.

In 2012 the ABS initiated a project aimed at the consolidation of eForms solutions across the ABS in order to deliver a single streamlined, flexible and cost effective outcome for the ABS. An internal assessment of the ABS capabilities and an approach to market via a Request for Expressions of Interest in 2012 established that current ABS solutions were on a par with anything that the market place were offering and as a result it was recommended that the ABS focus on progressing its implementation of existing eForms solution, Blaise.

Despite significant effort to progress the advancement and implementation of Blaise, it has become clear that Blaise will be unable to scale to the requirements of the Census in 2016. With less than twelve months until the eForm needs to be deployed for the 2015 Census Dress Rehearsal, which requires the use of the 2016 Census eForm, the ABS must utilise the existing ABS Online Census solution.

The ABS needed to determine whether it would source external expertise to assist with the development and support of this Online Census solution, and if so how it should conduct this sourcing.

The ABS engaged the firm CapDA to conduct an independent review of the ICT capability for the 2016 Census. The report found that the ABS must engage an external partner to support the eCensus solution as it does not have sufficient capability in -house. It also provided advice that only IBM would be able or willing to develop on to the existing Online Census solution, with other companies likely to provide new solutions. It recommends that the ABS consider a select tender with IBM for the 2016 census Online Census solution, reinforcing the consideration and risks at this stage of the census process.

CapDA undertook a market scan and identified a small number of companies, including IBM, that would be interested in tendering for the provision of an Online Census solution. CapDA found that the other companies would all bring or develop their own solution, rather than further develop the existing solution. Refer to attached document below:

[The final version of this document is provided as part of this Question on Notice. The changes from the version that was included in this document mainly were typographical, grammatical or formatting. A diagram on the Census 2016 High Level Systems Design was also updated.]

ABS undertook a procurement process as outlined in Item 3 below. Copy of the approved Procurement Plan is attached for further information.

[The Procurement Plan has been removed as there is sufficient evidence in the spending proposal as a stand alone document to satisfy the requirements of 10.5 of the Commonwealth Procurement Rules.]

The Procurement Plan was amended and approved on 19 August 2014 to reflect some changes to the Evaluation Plan to include the personnel that would make up the evaluation committee, expert advisors as well as the weighting percentages against the set of selection criteria. Copy of the amended Procurement Plan is attached for further information.

[The Procurement Plan has been removed as there is sufficient evidence in the spending proposal as a stand alone document to satisfy the requirements of 10.5 of the Commonwealth Procurement Rules.]

2.1 Business Context

The business context of the limited time available, alongside the need to manage the risk of non-performance of the eCensus solution which would have catastrophic impact on the Census program, are the key drivers in this procurement case.

The use of the previously developed Online Census solution is required to minimise change to Census processes, reducing both risk and effort required. A number of Census applications have been developed which integrate tightly with the ABS eForms solution, such as the eRegister (decrypts), data load (uses IFP format), snippet viewer and archiving. A change in supplier and thus Online Census solution would not be compatible with these existing systems and require extra effort and time to integrate.

Continuation of the ABS Online Census solution will allow us to take advantage of the investment in systems development that occurred for 2006 and 2011. This solution was highly successful and provided an excellent platform to build on for the future. It will also enable the ABS to begin testing immediately rather than waiting for months of development to be completed and possible failure at the end.

In the absence of a competitive tender process the ABS will need to implement mechanisms to ensure delivery of value for money. Through previous experience ABS has a detailed understanding of the costs to develop and support this system, and thus will be able to use these benchmarks to measure whether value for money is being achieved. IBM are conscious that the ABS has this knowledge and that it will need to provide a value for money price if it is to win the tender. The total cost will be reduced through removing the cost of a full market tender process.

In the event of unsuccessful negotiations, a significant program change will be required impacting the objectives and risk level of the Census. Census will need to sacrifice the testing of the eForm in the dress rehearsal and undertake an Open tender process.

2.2 Business Impact

The engagement of IBM to again deliver the Online Census solution is the only option that will minimise a negative impact on the objectives of the Census program.

2.3 The Proposed Project

2.3.1 Expected Outcomes and Outputs

a) Outcomes

A data set that contains responses from 65% of Australian households.

Census delivered on time and to budget.

Maintenance of public trust and willing compliance.

b) Outputs

A secure and professional Online Census and Data Capture solution that will enable 65% of Australian Households to complete their Census on line.

A cost effective solution for the 2016 Online Census system.

3. Procurement Methodology

>$80,000

As the estimated value of the procurement exceeds $80,000, Division 2 of the Commonwealth Procurement Rules applies to this spending proposal. As per the above attached approved Procurement Plan (Item 2 Background), ABS conducted a Limited Tender approach to IBM under 10.3e of the procurement rules which state that an agency may conduct a limited tender;

"for additional deliveries of goods and services by the original supplier or authorised representative that are intended either as replacement parts, extensions, or continuing services for existing equipment, software, services, or installations, where a change of supplier would compel the agency to procure goods and services that do not meet requirements for compatibility with existing equipment or services"

4 Selection Criteria

The following Selection Criteria formed the basis of the tender evaluation. They were not listed in any particular order and tenderer was not provided with any indication of the weightings (%):

4.1 Weighted Criteria

- Ability to fulfil the Statement of Requirement
- Experience in the management of similar activities to agreed schedules and budgets
- Skills and expertise of staff and subcontractors

4.2 Non-weighted Criteria

- Tenderer's performance – Corporate Social Responsibility (CSR) and Sustainable Procurement
- Compliance with Contract terms (both RFT and in the draft contract), response times, risk assessment
- Price and payment arrangements over the whole life of the agreement (including initial price, price adjustment basis, warranty, support, maintenance, installation costs, payment terms, discounts, warranty costs, extended maintenance costs, volume discounts)

5 Tender Evaluation

5.1 Submissions Received

As discussed in Section 3 above, ABS conducted a Limited Tender approach to IBM. Submission was received from IBM on 22 August 2014.

The ABS also sought clarification from IBM on two occasions, on various aspects of the response. The additional clarifications

were included in the evaluation process.

5.2 Summary of Evaluation Methodology.

A weighted "Matrix Analysis" was used to evaluate offers. The process involved was:

1. The Evaluation Committee met and agreed on overall percentage weightings of the above criteria.

2. Sub components of each criterion were rated (1-100) according to their deemed importance to the ABS.

3. Steps 1 and 2 were approved by Patrick Hadley, Division Head, Technology Services prior to the RFT closing date.

4. Based on the written offer provided by the respondent, each sub component was allocated a score (0-5) for all criteria except the pricing criterion which was allocated as per steps 5 and 6.

5. Indicative "whole of life" costings were determined based on written offers received.

6. The TEC selected the "Percentile Scoring" Price Evaluation method to provide a rating for the pricing criterion which rates the whole of life cost of the bid.

5.3 Evaluation

The Evaluation Committee was comprised of the following:

Role	Name	Title	Department/ Section
Chairperson	[redacted]	Director	Acquire
Member	[redacted]	Director	TID
Member	[redacted]	Director	Census ID
Member	[redacted]	Assistant Director	Acquire
Advisor (technical)	[redacted]	Assistant Director	TAD Census
Advisor (probity)	[redacted]	Assistant Director	Procurement

	[redacted]		
Advisor (Security)	[redacted]	Assistant Director	Security

5.4 Supplier References

The Referees listed in the IBM submission were contacted and below is a summary of the references provided :

a. Australian Open - Tennis Australia, [redacted]
The ABS has attempted to contact this referee but at this stage has not been successful . ABS will continue to follow up with this referee but it is not expected that the reference will have any negative impact on this assessment .

[Attachment A: Attachment A - ABS2014.105 Tennis Australia Reference Check.pdf contains the reference check.]

b. Australian Taxation Office - eCommerce, [redacted]

Attachment B: ABS2014.105 ATO Reference Check.PDF

5.5 Final Evaluation Matrix Scores

The table below shows the scores of the bid drawn from the final evaluation matrix .

[attachment "ABS2014.105eCensus Eval Report 12Sep14.xlsx" deleted by Patrick Hadley/Staff/ABS]

5.6 Detailed Summary of Offers

IBM Australia Limited

Criterion 1	Ability to fulfil the Statement of Requirement
Written description	The initial response partially complied with tender requirements. Clarification was sought on 20 criteria, IBM were provided 7 days to respond with clarification. The criterion is now compliant. Overall the score reflects IBMs strong capability: ● to undertake the activity ● previous experience in eCensus and other government engagements ● provide a comprehensive milestone breakdown for deliverables showing how they will meet ABS needs A number of Security details required clarification. A detailed project plan was provided on clarification. The panel is satisfied that IBM can deliver on Criterion 1.
Score	30.78

Criterion 2	Experience in the management of similar activities to agreed schedules and budgets
Written description	The response complied with tender requirements. Reference for Australian Taxation Office was followed up. This reference is for a piece of business critical work - the procurement component is worth approx $70m. ATO are very happy with the service being provided by IBM and are very happy with the partnership arrangements. They described the active sharing of risks, the trust they have in key IBM staff. Their project is being well managed and there is a high level of engagement and co-operation to achieve success. A very supportive reference. Reference for Tennis Australia will be followed up for clarification. Key contact has been

	overseas. IBM have a proven track record with ABS in this space, having delivered the 2006 and 2011 Online Censuses with great success. The panel is satisfied that IBM can deliver on Criterion 2.
Score	16.5

Criterion 3	Skills and expertise of staff and subcontractors
Written description	The initial response partially complied with tender requirements. Clarification was sought on 2 criteria, IBM were provided 7 days to respond with clarification. The criterion is now compliant. IBM have allocated resources: ● with comprehensive design, development and delivery experience in the field of Online Census ● experienced at project management of this type of project IBM provided further information on strategic sub-contractor arrangements and reference details for staff required, as per clarification. ABS has opportunity to provide feedback and/or request resource re-allocation if required. The panel is satisfied that IBM can deliver on Criterion 3.
Score	28

Criterion 4	Tenderer's performance – Corporate Social Responsibility (CSR) and Sustainable

	Procurement
Written description	The response complied with tender requirements, the panel is satisfied that IBM can deliver on Criterion 4.
Score	N/A

Criterion 5	Compliance with Contract terms (both RFT and in the draft contract) , response times, risk assessment
Written description	IBM indicated non compliance with three clauses. After discussions ABS agreed to IBM's suggested changes. A fourth non compliance was noted as an editing error and should not have been included in the compliance table.
Score	N/A

Criterion 6	Price and payment arrangements over the whole life of the agreement (including initial price, price adjustment basis, warranty, support, maintenance, installation costs, payment terms, discounts, warranty costs, extended maintenance costs, volume discounts)
Written description	Price was assessed separately to the evaluation of the tender response with respect to it meeting tender requirements. A key feature of this tender was that it had to be a value for money option. Prices were requested and provided for various eCensus take up levels (50%, 65%, 80%) and for 2 security models (matching the 2006 and the 2011 ABS security requirements). New features were costed separately to enable ABS to eliminate these from the solution if the cost of any piece was not commensurate with its priority to the ABS. The evaluation below includes the 65% takeup level, the more expensive 2011 security

requirements, and all application changes requested by ABS.

In 2011,

- The initial contract (including cost of living adjustments) was :$8,546,934 (GST incl). This was a base level cost with no change to the 2006 application and infrastructure.
- Subsequent change requests totalled $2,948,110 (GST incl).

This was a total spend of $11,495,044 (GST incl).

For 2016,

- ABS have requested an increase from response levels of 50% (final level catered for in 2011) to 65%
- ABS have requested a responsive version of the application which suits and operates effectively on a range of mobile devices
- ABS have requested a modernised look and feel
- ABS requested an application ported into the ABS environment for the Notice of Direction period and for ongoing use by the ABS (on the ABS preferred Oracle database platform).

The cost for 2016 is $9,606,725 (GST incl) representing a fixed cost for the infrastructure and all requested application functionality. Allowing for an anticipated 15% total contract spend on change requests, this is a total spend of $11,047,727 (GST incl). There are no cost of living adjustments applicable to the fixed cost component.

Change requests will include:

- updates required to application to ensure it operates correctly for the latest set of devices, browsers and operating systems required by the ABS at Census time

	● changes as required by changes to legislation applicable to the ABS (eg revised security requirements, whole of government activity such as myGov) ● changes resulting from operations and information gathered through the Dress Rehearsal not already covered by the tender ● any other changes to ABS requirements (for example changes to ABS authentication requirements) This is a 3.9% reduction in costs from 2011 to 2016 with an overall improved application outcome. **The panel is satisfied that this is a value for money proposal.**
Score	N/A

Overall Summary	The panel sought clarification on a number of aspects raised from the initial response , and is satisfied that the final response complies with requirements after receiving clarification. The panel recognizes that IBM have prior experience in this field, having successfully undertaken the same exercise for both 2006 and 2011 Online Censuses. IBM have also indicated that they will allocate a number of key technical and design staff that have extensive familiarity with both the application and the ABS as a strategic partner. The overall price is lower than that of 2011 with significant change and increase in volume capability. This proposal meets all requirements proposed by the ABS and demonstrates an overall value for money outcome for the ABS.
Score	78.15

6. Conclusion of Tender Evaluation Committee (TEC)

6.1 Summary

The TEC have completed the evaluation and have allocated final ratings, based on:

- the written response from the tenderer;
- the detailed evaluation report;
- references sought regarding the submission; and
- clarification of the business, pricing and support issues.

The technical evaluation process determined that IBM demonstrated capability to implement, deliver, manage and support the 2016 Online Census solution as prescribed in the Request for Tender and accompanying Statement of Requirements, the response representing value for money.

6.2 Whole of Life Costs

6.2.1 Procurement Costs

Costings provided are based on the quoted 65% uptake for Online Census and are GST inclusive.

Item	Year 1	Year 2	Year 3	Grand Total
Environment Cost (65%)	1,038,378	1,256,019	1,311,266	3,605,663
● Build & Test				
● Support				
● Hardware Infrastructure				
● Project Management				
Environment Monthly Payment	404,023	538,697	134,675	1,077,395
Application Development	1,199,762	1,369,523	802,062	3,371,347
● Program Management				

• Design				
• Build				
• System Test				
• DR Support & Management of Application				
• ME Support & Management of Application				
Application Monthly Payment	495,221	660,295	165,073	1,320,589
Application Additional Features	231,731			231,731
Total	3,369,115	3,824,534	2,413,076	**9,606,725**
Contract Change	505,365	573,678	361,959	1,441,002
Total	3,874,480	4,398,212	2,775,035	**11,047,727**

7 Business Issues

7.1 Risk Management Issues

ABS has a very tight timetable (product due for testing in March 2015) and tight budgets (efficiency dividends). There is a need to get a value for money solution in short timeframe, or go to open market.

ABS wants to build on our previously strong relationship with IBM. The 2016 Census model will maximise online returns through utilising mail-out delivery of access codes to households. It is our intention to offer the online Census to all households (approximately 10 million), with the aim of increasing the on-line response rate from 33% achieved in 2011 to 65% in 2016.

The use of the previously developed 2011 Online Census solution is required to minimise change to Census processes, reducing risk and time delays.

ABS recognises the expertise and experience IBM bring to the table - staff who were involved in developing the previous online Census solutions for 2006 and 2011, and are still dedicated and eager to engage with the ABS in the online Census - this is a key attraction as they understand our business, the issues to be faced, and have been successful with us in the past.

7.2 Contracting Issues

IBM had only 4 issues of contract non compliance:

1 IBM requested a minor amendment to the definition of 'Law'. ABS agreed to the suggested changes. This is consistent with the previously signed agreement with IBM for the Data Capture Solution (ABS2012.239).
2. IBM requested a 2% late payment fee in the event ABS does not meet 30 day payment period. ABS did not agree with this change and subsequently IBM confirmed this was an editing error and it should not have been included in the response.
3. IBM requested a change to the clause related to any review and audit costs. The ABS agreed to this change and to therefore negotiate and reimburse IBM for any direct and substantiated costs incurred.
4. IBM requested a change to the Liability Cap clause and the ABS agreed to this change therefore the liability will be limited to twice the amount payable under the contract. In addition ABS has agreed to the exclusion to the consequential loss.

The general structure and terms and conditions of the contract were reviewed by the Australian Government Solicitor's Office and have been updated to reflect current legislation and Commonwealth policy. The contract is based on the contract signed by IBM and ABS for the 2011 eCensus Solution.

Due to the tight time frames the contract manager will be working closely with IBM to ensure the milestones and deliverables are met.

7.3 Liability Cap

As mentioned above (Item 7.2) a liability cap of twice the amount payable under the contract has been agreed to.

This is in line with the Australian Government policy that the liability of ICT suppliers contracting with agencies should, in most cases, be capped at appropriate levels. Unlimited liability clauses should only be required when there is a compelling reason. In this instance the risks have been assessed as remote and immaterial and therefore the liability cap is appropriate.

7.4 Strategic Management Considerations

To meet the overall objective of the 2016 Census the ABS has recognised the need for a Prime Partner to work with the ABS on the continued development of the existing online Census solution, and to host the 2016 Online Census. IBM have proven themselves to be a trusted partner with ABS - in Lotus Notes over many years, in the Intelligent Forms Processing (IFP)software used to scan and capture data from paper forms across the ABS, and in

delivery of the online Census since 2006.

The key to success in previous work with IBM has been:

- senior engagement and commitment;
- willingness to be flexible; and,
- commitment to building a partnership to get things done (common goals).

ABS and IBM have put ideas and questions on the table, have discussed the pros and cons of each, and have been able to understand each other's intent in requirements requested and ideas proposed.

Key focus of the 2016 Census is to make it easier for the public to respond while delivering a more efficient and effective Census. The procurement only covers the 2016 solution - we expect to go to open market for future solutions covering not only Census but our Business and Household Surveys.

8. Recommendation

It is recommended that this spending proposal be approved as outlined above, under the PGPA Act 2013.