

The Senate

Economics
References Committee

2016 Census: issues of trust

November 2016

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Recommendations

Recommendation 1

4.81 The committee recommends that all future Privacy Impact Assessments relating to the census, are conducted externally with the final report published on the ABS website 12 months in advance of the census to which it relates.

4.82 Following the release of a PIA recommending changes to future censuses, consultation across the Australian community should be undertaken by the ABS with the outcomes clearly documented on the ABS website no less than six months before a future census.

Recommendation 2

4.83 The committee recommends that the ABS update its internal guidelines to make clear that consultation requires active engagement with the non-government and private sector.

Recommendation 3

5.46 The committee recommends that the ABS publicly commit to reporting any breach of census related data to the Office of the Australian Information Commissioner within one week of becoming aware of the breach.

Recommendation 4

6.89 The committee recommends that the Australian Government commit the necessary funding for the 2021 census in the 2017–18 Budget.

Recommendation 5

6.90 The committee recommends that the ABS conduct open tendering processes for future census solutions requiring the participation of the private sector.

Recommendation 6

6.91 The committee recommends that the ABS give greater attention to intellectual property provisions in contracts that include licensing and royalty arrangements.

Recommendation 7

6.92 The committee recommends that the 2021 eCensus application be subject to an Information Security Registered Assessors Program Assessment.

Recommendation 8

6.93 The committee recommends that the ABS take a more proactive role in validating the resilience of the eCensus application for the 2021 census.

Recommendation 9

6.94 The committee recommends that the Department of Finance review its ICT Investment Approval Process to ensure that projects such as the 2016 Census are covered by the cabinet two-pass process.

Recommendation 10

6.95 The committee recommends that the Australian Government provide portfolio stability for the ABS.

Recommendation 11

6.96 The committee recommends responsible ministers seek six-monthly briefings on the progress of census preparations. These briefings should cover issues including, but not limited to, cyber security, system redundancy, procurement processes and the capacity of the ABS to manage risks associated with the census.

Recommendation 12

6.106 The committee recommends that the ABS consider establishing a dedicated telephone assistance line for people who require special assistance in completing the census.

Recommendation 13

7.28 The committee recommends that the maximum value of fines and any other penalties relating to the census be explicitly stated.

Recommendation 14

7.29 The committee recommends that the Australian Bureau of Statistics develop a clear communications strategy outlining the outcomes for non-compliance with the census, including resolution processes and the value of possible penalties.

Recommendation 15

7.57 The committee recommends that the Australian Government provide sufficient funding for the ABS to undertake its legislated functions to a continued high standard.

Recommendation 16

7.58 The committee recommends that the responsible minister act as a matter of urgency to assist the ABS in filling senior positions left vacant for greater than 6 months.

Chapter 1

Introduction

1.1 On 31 August 2016, the Senate referred the 2016 Census to the Senate Economics References Committee for inquiry and report by 24 November 2016. The terms of reference include the following matters:

The 2016 Census, with particular reference to:

- a) the preparation, administration and management on the part of the Australian Bureau of Statistics (ABS) and the Government in the lead up to the 2016 Census;
- b) the scope, collection, retention, security and use of data obtained in the 2016 Census;
- c) arrangements, including contractual arrangements, in respect of the information technology aspects of the Census;
- d) the shutting down of the Census website on the evening of 9 August 2016, the factors leading to that shutdown and the reasons given, and the support provided by government agencies, including the Australian Signals Directorate;
- e) the response rate to the Census and factors that may have affected the response rate;
- f) privacy concerns in respect of the 2016 Census, including the use of data linking, information security and statistical linkage keys;
- g) Australia's Census of Population and Housing generally, including purpose, scope, regularity and cost and benefits;
- h) the adequacy of funding and resources to the ABS;
- i) ministerial oversight and responsibility; and
- j) any related matters.

Background to the inquiry

1.1 The 2016 Census of Housing and Population (census) was held in August 2016. There were two major changes for the 2016 census: the move to an eCensus with the majority of census forms to be completed electronically; and the retention of name and address information for a period of up to four years to enable more extensive uses of census data.

Structure of report

1.2 This report comprises seven chapters:

- Chapter 2 provides a short history of the census in Australia, and why the census is an important public service;
- Chapter 3 discusses the preparations for the 2016 census, including the arrangements to deliver the eCensus;

- Chapter 4 considers the decision to retain names and addresses collected for the census for a period of up to four years;
- Chapter 5 outlines the proposed usage and protection of information collected as part of the 2016 census;
- Chapter 6 discusses the events of the evening of 9 August 2016 and other operational matters; and
- Chapter 7 considers the outcome of the 2016 census, including matters such as fines for non-compliance, as well as the adequacy of financial resourcing provided to the ABS.

Conduct of the inquiry

1.3 The committee advertised the inquiry on its website and wrote to stakeholders and other interested parties inviting submissions.

1.4 The committee received 90 submissions as well as additional information and answers to a series of written questions on notice. They are listed at Appendix 1. The committee held one public hearing Canberra. A list of witnesses who appeared is at Appendix 2.

1.5 At the committee's public hearing on 25 October 2016, the Chair of the committee stated that the Australian Privacy Commissioner (Commissioner) had been invited to appear as a witness. The Commissioner was not invited to appear as a witness at the hearing.

1.6 The committee thanks all of the individuals and organisations that contributed to this inquiry. The committee would like to thank the ABS for their cooperation in this inquiry. The ABS was helpful and forthcoming with information requested by the committee. The committee notes that many submissions were prepared based on a limited knowledge of the actual events that preceded and took place on 9 August 2016 due to the timing of the inquiry.

Chapter 2

A short history of the census in Australia

2.1 Every five years in August, Australia conducts a Census of Population and Housing (census). The census provides information on the number of people living in Australia, their ancestry, and how they live and work.

2.2 Coordinated accounting of populations and other statistics for public administration purposes dates back to the late 18th century in Australia in activities called musters. Before federation, each state conducted its own censuses, with the first held in New South Wales in 1828.¹

2.3 On 8 December 1905, the federal *Census and Statistic Act 1905* was passed. The Act provided:

(a) that the census shall be taken in the year 1911, and in every tenth year thereafter; and

(b) the census day shall be a day appointed for that purpose by proclamation.

2.4 The first Statistician of the Commonwealth of Australia (the Australian Statistician) was appointed on 18 June 1906 and in the same year the Commonwealth Bureau of Census and Statistics was formed; later to be re-named the Australian Bureau of Statistics (ABS) in 1975.²

2.5 As set out in the Act, the Australian Statistician conducted the first national census in April of 1911.³ The ABS, in a later reminiscence, provided an insight into the scale and challenges faced by the earlier censuses:

Around 7300 collectors and enumerators were appointed for the collection work on the first census. Collectors were mainly on foot, or used horses to cover their areas. Some collectors also used bicycles...Most collectors were able to undertake their work in the specified time with no major difficulties. However flooding and bogs stranded some collectors in Queensland, while a drought in Western Australia meant that some were unable to find feed for their horses...In all states police provided details of tramps and campers.⁴

1 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 75.

2 Australian Data Archive, *The history of census taking in Australia*, <http://assda.anu.edu.au/census/c86/hatac86/section1.html> .

3 Early censuses were authorised by the *Census and Statistics Act 1905*, which was later replaced by the *Census and Statistics Act 1977*.

4 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, pp. 77–78.

2.6 Over four million census cards were counted by hand in 1911, the Australian Statistician having eschewed the use of the available tabulating machines due to fears of delays and concerns that 'most of the machinery he saw was still at an experimental stage'.⁵ Twenty-one years earlier, tabulating machines produced by Herman Hollerith—whose company would later become International Business Machines Corporation, better known today as IBM—were used successfully in the 1890 census in the United States of America. Partly as a result of the interruption caused by war in Europe, the final Statistician's Report was not released until 1917.⁶

2.7 Further censuses were conducted in 1921, 1933, 1947, 1954 and 1961. The censuses in 1933 and 1947 were delayed by the depressed economic conditions of preceding years and later the war.⁷

The modern era

2.8 The 1966 census was the first to be held five years after the preceding census, marking the commencement of a pattern that continues to today. The 1966 census marked the beginnings of the use of electronic computers for census purposes in Australia:

For the first time a computer was used for processing of the census, including for editing and coding of the data. The use of the computer appears to have had no impact on the number of staff required nor on the time taken to complete the processing. However the computer did have a significant impact on the quality of the data as it enabled quality control checks to be built into the processing system. It also made a significant difference to the analysis of the data, with capability to produce far more complex tables than were previously available.⁸

2.9 As well as the increased flexibility of analysis by computers, 1966 also saw the introduction of the Post-Enumeration Survey (PES) which provided an important tool to improve the accuracy of the census. The PES allows the ABS to correct the collected data to determine the number of people who were not counted, and how many people who were counted twice.⁹

2.10 A final change of note to the 1966 census was the demise of the Statistician's Report (report). The report summarised and analysed the census results

5 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 78.

6 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 82.

7 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, pp. 83–86.

8 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, pp. 90–91.

9 Australian Bureau of Statistics, *2011 Census coverage – the Post Enumeration Survey*, <http://www.abs.gov.au/websitedbs/censushome.nsf/home/factsheetspes?opendocument&navpos=450> (accessed: 14 September 2016).

and was published as a volume of analysis. Due to the amount of work required, the report took between five and eight years to complete; clearly too slow a turn-around given the census was now to be conducted every five years.¹⁰

2.11 The 1971 census saw, for the first time, a serious discussion regarding privacy and the government's collection of information. Concerns appear to have been stirred by a television program which aired one month before the census investigating the supposed privacy invasions of government information collection.¹¹

2.12 The 1976 census witnessed even greater concerns regarding privacy, at the same time the census was extended to cover more areas of people's lives to inform the major social changes the Whitlam government envisaged.¹² The ABS' official history reports:

In the two months before the census date there was considerable public debate about the census, with privacy a big issue. The Bureau faced attacks from many quarters. With the limited pre-census publicity, the Bureau was unable to clear up all misunderstandings based on inadequate information that arose during the debate.¹³

2.13 The PES revealed that fewer people had responded to the census than for previous censuses. This meant that for the first time the ABS adjusted the results of the 1976 census based on benchmarking rather than using the direct population count of the census data.¹⁴ Partly as a consequence of the privacy concerns surrounding the 1976 census, the ABS began to make it publicly clear that census forms were always destroyed once the data from them had been processed.¹⁵

2.14 Following the 1976 census, the ABS increased community engagement in the development of the census and encouraged a greater understanding of the value of the census data in the population at large. In 1979, the Australian Law Reform Commission (ALRC) tabled the report *Privacy and the Census* in Parliament. Key recommendations of the report included:

- The public should be informed both about the need for census information and about the measures taken to protect confidentiality;

10 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 93.

11 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 95.

12 Although the census was administered after the Whitlam government was dismissed, the census questions had been approved by Parliament during the Whitlam years.

13 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 96.

14 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 96.

15 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 96.

- census information should not be destroyed but should be transferred to security in the national archives;
- access to census information should be forbidden for most purposes for 75 years; and
- highly sensitive information should not be sought on a compulsory basis unless there was a highly compelling need.¹⁶

2.15 The ABS generally accepted the recommendations of the ALRC, but continued to destroy census records after the data had been extracted.

2.16 The 1981 census did not suffer from the same privacy concerns as those in the 1970s, with the PES finding an improvement in the response rate.¹⁷ In 1991, the census date was moved to August to be clear of all school holiday periods. The 1991 census also marked the start of regular consultations with the Privacy Commissioner on operational procedures.¹⁸

2.17 Due to concerns regarding the cost of conducting the census, in 1993 the Australian Government established an interdepartmental committee to consider ways of reducing the costs of administering the census. The committee identified two options: reduce the frequency of, and number of questions in, the census. The committee recommended the continuation of the census in its current format.¹⁹

2.18 Public support for the census appears to have hit a modern peak in 1996 with a non-response rate of only 1.6 per cent.²⁰ The Adelaide Advertiser provided an enthusiastic endorsement of the census, opining:

The five yearly census is one of the best public investments Australia makes. It pays for itself many times over in the information it provides for planners in both the public and private sectors. At the everyday human level its findings are engrossing, especially when tracked over time.²¹

2.19 The 2001 census saw privacy concerns again being considered in the lead-up to the census. The issue was whether the census forms should be destroyed or kept for posterity. The ABS was reportedly wary of retaining the forms. As the ABS official history reports:

16 Australian Law Reform Commission, *Privacy (1976–83)*, <https://www.alrc.gov.au/inquiries/privacy-1976-83> (accessed: 14 September 2016).

17 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 98.

18 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 103.

19 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 103.

20 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 104.

21 Adelaide Advertiser, 17 July 1997.

The experience of the 1970s taught the Bureau to believe that any suggestion that the census was less than completely confidential could have a profound impact on the quality of the data collected.²²

2.20 In 1998, the government decided on a compromise, giving people the opportunity to opt-in to allow their personal details—including name identification—to be retained for release in 99 years. Slightly more than fifty per cent of respondents agreed to have their details kept in the 2001 census. The remainder of the census forms were destroyed in accordance with past practice.²³ The number of households opting to have their census forms retained has increased in every subsequent census, with 56.1 per cent and 60.6 per cent opting-in in 2006 and 2011 respectively.

2.21 In 2006, for the first time, the census was available to be completed online by the general public, with 10 per cent of households submitting their data using this method. In 2011, the take-up rate for the online census was 33 per cent following on the back of digital engagement and endorsement strategies undertaken by the ABS in the lead-up to the census.²⁴

Importance of the census

2.22 The census has been a long-standing part of Australian public life. It is easy to forget the importance of the census, and the importance of the statistics that result from it.

2.23 The ABS provides a useful summary of the census, and its purpose:

A [census] is an official count of the complete population and the dwellings in which they live. A census provides a detailed snapshot of the population and dwellings, at a point in time.

...

The Australian Census provides a reliable basis for the estimation of the population of the states, territories and local government areas, for use in: determining the number of seats allocated to each state and territory in the House of Representatives; distributing billions of dollars of annual goods and services tax revenue to the states and territories; and influencing grants to states and to local government areas.²⁵

2.24 Census data is used to determine electoral boundaries, distribute tax revenue fairly, and model the need for services. Governments, non-government organisations, community groups and businesses all rely on the census. The committee heard that the

22 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 105.

23 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 105.

24 Australian Bureau of Statistics, *Submission 38*, p. 37.

25 Australian Bureau of Statistics, *Submission 38*, p. 34.

true power of the census comes from the low-level data that allows informed decision making and research.²⁶

2.25 The Department of Social Services highlighted the importance of census data to the government in providing services to Australians:

The Census is vital for understanding the characteristics and behaviours of vulnerable populations of policy interest for DSS, including newly arrived migrants, people with a disability and jobless families.²⁷

2.26 The Australian Institute of Family Studies informed the committee that the census is the 'only way in which to obtain good estimates of the incidence, distribution, and characteristics of so-called "rare populations"'.²⁸ The Executive Council of Australian Jewry Inc. pointed out that for a community of their size:

...only a national census has sufficiently broad coverage to deliver data at the level of detail required to make even basic assessments about our community...the Jewish community has little alternative but to rely on the census to provide accurate data to help plan for our social, welfare, care, educational and security needs.²⁹

2.27 Similarly, the National Catholic Education Commission highlighted that 'the data derived from [the census] are an integral component of the Australian education infrastructure' as it is used to anticipate demand and allocate funding.³⁰

2.28 The Life Course Centre (LCC) highlighted that although governments are collecting increasingly large quantities of administrative data, the census is the only 'definitive data source that provides universal coverage of the Australian population in its entirety'.³¹ As the LLC explained:

The Census is the cornerstone for important social and economic research analyses in Australia, since it produces official statistics that can be used to benchmark population, mortality, and other statistics.³²

2.29 Volunteering Tasmania noted that in an environment of declining funding for many areas of research, the census remains 'a source for consistent, longitudinal data for the volunteering industry'.³³

26 ID Consulting Pty Ltd, *Submission 39*, p. [2].

27 Department of Social Services, *Submission 63*, p. 1.

28 Australian Institute of Family Studies, *Submission 8*, p. 2.

29 Executive Council of Australian Jewry, *Submission 26*, p. 1.

30 National Catholic Education Commission, *Submission 69*, p. 2; Australian Catholic Bishops Conference Pastoral Research Office, *Submission 44*, p. [1].

31 ARC Centre of Excellence for Children and Families over the Life Course, *Submission 32*, p. [1].

32 ARC Centre of Excellence for Children and Families over the Life Course, *Submission 32*, p. [5].

33 Volunteering Tasmania, *Submission 50*, p. 1.

2.30 The data from the census is also used to underpin survey sampling as it allows researchers to identify segments of the population that are under-represented or absent in a sample.³⁴

34 Australian Institute of Family Studies, *Submission 8*, p. 2.

Chapter 3

Preparations of the 2016 census

3.1 The 2016 census was held in August, but planning had begun five years earlier in 2011 when the ABS agreed to a set of strategic priorities:

- maximise the count of every dwelling and person in Australia;
- maximise the value of the census to all users;
- protect the privacy of the public; and
- increase the efficiency and sustainability of the census.

Early planning for the 2016 census

3.2 Preparation for the 2016 census commenced in June 2011 with the establishment of the 2016 census team within the ABS. In July 2012, the ABS held discussions with the Australian Government (government) on the census business case. This culminated in funding being allocated in the May 2013 budget for the census.

This provided the required funding for the next four years to develop and conduct a transformed national Census. The ABS considers that it had adequate funding to conduct a high quality Census in 2016 and sufficient time to properly prepare for the Census.¹

3.3 In May 2015, the government budget included investment in the Statistical Business Transformation Project and affirmation of the 2016 online census.²

Budget problems and suspended preparations

3.4 The 2013-14 Australian Government Budget allocated the necessary funding to develop and conduct a transformed national census which the ABS reported was 'adequate funding to conduct a high quality Census'.³

3.5 In February 2015, there were reports in the media that the ABS had considered cancelling the 2016 census and moving to decadal censuses.⁴ The Australian Statistician confirmed later that month that the ABS was considering changing how the census was run, but that as the government was still considering that proposal, he was not in a position to comment outside of noting: 'We have

1 Australian Bureau of Statistics, *Submission 38*, p. 50.

2 Australian Bureau of Statistics, *Submission 38*, p. 51.

3 Australian Bureau of Statistics, *Submission 38*, p. 50.

4 Peter Martin, 'ABS is behind controversial proposal to axe the 2016 census, not the Abbott government', *Sydney Morning Herald*, 19 February 2015.

provided some proposals to government around changes to the frequency of the census'.⁵

3.6 IBM's submission to the inquiry informed the committee:

In or about February 2015, the ABS informed IBM that it was considering not proceeding with the 2016 eCensus (or, indeed, any Census in 2016). IBM understands that the ABS was considering decreasing the frequency of the Census to once every 10 years and running a rolling Australian Population Survey (APS) during the intercensal period.

...

In May 2015, the ABS informed IBM that the existing 5 yearly Census frequency would be maintained and the 2016 eCensus would proceed, with Census Day to be 9 August 2016 as originally planned.⁶

3.7 The ABS' lengthy and otherwise comprehensive submission to this inquiry makes no mention of these events.

3.8 Census preparations were further complicated by the departure of Australian Statistician Brian Pink in January 2014, with his permanent replacement, Mr David Kalisch, appointed almost a year later in December 2014.

3.9 The period of September 2013 through to August 2016 also saw four different ministers (the Hon Steven Ciobo MP, the Hon Alex Hawke MP, the Hon Kelly O'Dwyer MP and the Hon Michael McCormack MP) take responsibility for the Australian Bureau of Statistics.

3.10 The titles for the responsible minister also changed during this time, and included "Parliamentary Secretary to the Treasurer", "Assistant Minister to the Treasurer", "Parliamentary Secretary to the Treasurer" and "Minister for Small Business".

Scope of questions

3.11 The number of topics included in the census has steadily increased over time. The first census had 19 topics; the majority of which have remained part of every census since. Topics are removed from the census when there is no longer sufficient justification for their inclusion. Blindness/deaf-mutism, for instance, was last collected in 1933.⁷ Since 2006 there have been no changes to the 61 included topics.⁸

5 Mr Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 26 February 2015, pp. 10–14.

6 IBM Australia Limited, *Submission 87*, p. 10.

7 Australian Bureau of Statistics, *Submission 38*, p. 37.

8 Australian Bureau of Statistics, *Submission 38*, p. 38.

3.12 The ABS sought public submissions on both the nature and content of the 2016 census from November 2012 to May 2013.⁹ This consultation formed part of the ABS' attempt to optimise the 2016 census to ensure that the data collected through the census was of a high quality and relevant in contemporary Australia.¹⁰ The ABS' submission summarised the results of this consultation:

Over 1000 submissions were received. In these submissions, 54 new topics were suggested and all 61 of the topics in the 2011 Census received strong support for retention. The ABS had more than 80 meetings with key external stakeholders including Australian Government departments, state/territory departments, statistical advisory groups and selected interest groups.¹¹

3.13 The ABS reported that there is significant demand for additional topics to be included in the census, but these demands are balanced against economic and methodological considerations:

There is significant demand for additional topics, such as information on long term health conditions. The inclusion of any new topic needs to consider the significant cost, the burden on households, the limitations of the size of the paper form, and the continuing need for other existing topics.¹²

3.14 The committee heard concerns that 'there is a general perception that the questions on the census form are out of date and some are becoming irrelevant in the modern era. There is also a need for new questions to be asked'.¹³ Some suggested topics for inclusion included questions about health status, disability, use of recreation time, modes of travel to education and other activities, pet ownership and part-time family arrangements.¹⁴

3.15 In contrast, the Institute of Public Affairs noted that much of the information that is included in the census is more efficiently collected elsewhere, and concluded that:

If the Census is to continue into the future, its scope and scale should be heavily scrutinised, and the questions it asks should be restricted only to those questions which can be demonstrated to be absolutely necessary.¹⁵

9 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 19.

10 Australian Bureau of Statistics, *Census of Population and Housing: Submissions Report, 2016*, Canberra, 2013.

11 Australian Bureau of Statistics, *Submission 38*, p. 58.

12 Australian Bureau of Statistics, *Submission 38*, p. 38.

13 ID Consulting Pty Ltd, *Submission 39*, p. [8].

14 ID Consulting Pty Ltd, *Submission 39*, p. [8].

15 Institute of Public Affairs, *Submission 34*, p. 5.

3.16 In August 2015, the ABS published the 'Census of Population & Housing: Nature and Content, Australia, 2016' which revealed that the same topics would be used in the 2016 census as were used in the 2006 and 2011 Censuses.

The move to an eCensus

3.17 The 2016 census was designed to be primarily conducted online, in what the ABS described as 'digital first', which 'aims to provide a more effective, more efficient, more environmentally-friendly census that was intended to be easier for people to complete'.¹⁶

3.18 It was predicted that the digital-first approach would deliver savings of \$100 million in the running of the 2016 census compared to the 2011 census.¹⁷ One of the largest costs associated with running the census is the temporary employment and training of thousands of field officers used to deliver and collect census information. The use of an eCensus would reduce the number of temporary workers required.¹⁸ For households, the online census promised to reduce the time required to complete the census from a benchmark of 37 minutes for paper forms in 2011 to 26 minutes for the new eCensus.¹⁹

3.19 Although the 2016 census was not the first census to have an online option for submitting, it would be the first whereby the ABS actively encouraged households to use the online option.

3.20 It was reported to the committee that in 2012 the ABS began investigating the possibility of a primarily online census. As outlined in internal ABS procurement documents prepared in 2015:

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.²⁰

3.21 The ABS goes on to report that this in-house solution was later determined to be unable to scale sufficiently to meet the needs of the census:

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

16 Australian Bureau of Statistics, *Submission 38*, p. 53.

17 Australian Bureau of Statistics, *Submission 38*, p. 53.

18 Australian Bureau of Statistics, *Submission 38*, p. 40.

19 Australian Bureau of Statistics, *Submission 38*, p. 53.

20 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 76.

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.²¹

3.22 A later report from an external consultant was more straightforward in explaining this fact and the consequences of it:

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.²²

3.23 Following consideration of existing options, the ABS determined that its existing software system was not appropriate for use in the census, and in 2014, the ABS' Steering Committee responsible for the census program took the decision that Blaise was not a viable solution.²³

3.24 The ABS engaged the firm Capability Driven Acquisition (CapDA) to conduct an independent review of the ABS' ICT capabilities for the 2016 census, and provide advice on the capacity and availability of commercial partners.²⁴ CapDA produced the *Census 2016: ICT Capacity & Capability* (ICT Census) report and provided it to the ABS in May 2014. The ICT Census report agreed with the ABS' assessment that Blaise was unable to scale to meet the demands of the census, and recommended:

...[The] Review Team recommend that [the] 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.²⁵

3.25 The ICT Census report, having examined the internal capacity of the ABS, articulated the case for the use of an outsourced solution saying:

[The] 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 [business as usual] nature of the ABS.²⁶

21 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 76.

22 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 20.

23 Australian Bureau of Statistics, *Submission 38*, p. 61.

24 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 8.

25 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), pp. 4-5.

26 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 21.

3.26 The ICT Census report highlighted that the best value for money would be achieved through an open tender process—as is typical for government procurement processes—but that this option may not be viable in this circumstance due to time constraints.²⁷ Because of this consideration, the ICT Census report recommended a limited tender:

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 the 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 [partner] to come 'on board' than in earlier Census cycles.²⁸

3.27 The ICT Census report also noted that the use of a limited tender to IBM would be appropriate 'in consideration of the limited time frame and the inherent risks in working with any new organisation'.²⁹ The relationship between the ABS and IBM is discussed in greater detail in chapter 6.

Limited tender to IBM

3.28 IBM had previously worked with the ABS in 2006 and 2011 to provide online census systems. IBM reported to the committee that:

IBM was engaged by the ABS to provide IT services in relation to the 2006 eCensus and 2011 eCensus. IBM developed the electronic form and the online hosting environment (known as a 'platform' or 'system'). The solutions provided by IBM were successful, and saw the percentage of respondents who completed the electronic form rather than the paper form (the 'online response rate') increase from approximately 9 [per cent] in 2006 to 33 [per cent] in 2011.³⁰

3.29 IBM reports that during both the 2006 and 2011 censuses, it delivered 100 per cent availability throughout the busiest periods.³¹ As part of a separate contract, IBM provided the ABS an information technology solution to convert paper forms completed by households into an electronic database.³²

3.30 In September 2014—following a limited tender process as recommended by the CapDA report—the ABS contracted IBM to develop, deliver, implement and host

27 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 6.

28 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 6.

29 Australian Bureau of Statistics, *Submission 38*, p. 61.

30 IBM Australia Limited, *Submission 87*, p. 6.

31 IBM Australia Limited, *Submission 87*, p. 6.

32 IBM Australia Limited, *Submission 87*, p. 6.

the online census system.³³ The procurement documents noted that a limited tender would still ensure a satisfactory value for money outcome as:

Through previous experience the ABS has a detailed understanding of the costs to develop and support this system [eCensus], 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.³⁴

3.31 Under the terms of the contract between ABS and IBM, all intellectual property rights for the eCensus application are assigned to the ABS.³⁵ The committee was informed that IBM is not required to pay a royalty fee to the ABS to use the intellectual property developed during the census project.³⁶ The ABS argued that this arrangement would benefit Australia as the intellectual property could be advanced through further development work undertaken in other countries:

...we were keen to see the system further developed at other people's expense. My understanding is that we included in the contract a provision for IBM to leverage the intellectual property in the hope that the software would be further enhanced through other applications.³⁷

3.32 Procurement documents show that the ABS were confident that IBM represented value for money and had the capability to deliver the 2016 census.³⁸

Development of eCensus

3.33 The 2016 census built on the solutions provided by IBM in 2006 and 2011, with the aim of increasing the online response rate to 65 per cent, or around 10 million households.³⁹ The ABS later requested that IBM increase the eCensus hosting infrastructure capacity to support an online response rate of 80 per cent.⁴⁰ The contract

33 Australian Bureau of Statistics, *Submission 38*, p. 61.

34 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. [77].

35 Australian Bureau of Statistics, *Submission 38.1*, pp. 14–5.

36 IBM Australia Limited, answers to questions on notice, 25 October 2016 (received 7 November 2016), p. 1.

37 Mr Jonathan Palmer, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 41.

38 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. [86].

39 IBM Australia Limited, *Submission 87*, p. 7.

40 IBM Australia Limited, *Submission 87*, p. 11.

between IBM and the ABS for the design, development and implementation of the eCensus was priced at \$9,606,725.00.⁴¹

3.34 The agreed solution saw census data protected using encryption on dedicated infrastructure hosted in Australia, and cloud services used for non-sensitive parts of the system (static help pages, for example).⁴² IBM did not have access to the data provided by households. Data was only able to be decrypted by the ABS who possessed the unique decryption keys.⁴³

3.35 The contract required that the eCensus site be available to the public to access, complete and submit census forms for a minimum of 98 per cent of the 61 day period from 9:00am on 26 July 2016 to midnight on 25 September 2016, as well as for 98 per cent of the four hour peak period from 7:00pm to 11:00pm on 9 August 2016.⁴⁴

3.36 Revolution IT was contracted to perform load testing on the eCensus website.⁴⁵ The key performance requirement of the eCensus was expressed in the number of forms that could be submitted per second. Load testing is the process of simulating human interaction with the application to ensure that the application can support the expected demand.⁴⁶ The ABS expected a maximum required capacity of 250 forms per second, or approximately 900 000 per hour.⁴⁷

3.37 Submissions to this inquiry questioned whether the ABS had underestimated the load that would be placed on the eCensus system.⁴⁸ Dr Robert Merkel, a software testing specialist, informed that the committee that website traffic peaks are often far higher than average levels. Even a short service disruption could have precipitated the overload of the eCensus due to its unique nature:

In many cases, when a website is overloaded and inaccessible, people will seek alternative sources for the information or service they attempted to access, or try again after a substantial period. In the case of the e-Census website, this would not have been the case—most people would have repeatedly tried to access the site, either for initial access, or to complete the submission of their Census form. As such, unmet demand would have built up like water behind a dam.⁴⁹

41 CN2641301, <https://www.tenders.gov.au/?event=public.cn.view&CNUUID=1D46611D-EA19-ED83-2C73D65E88772130> (accessed: 10 September 2016).

42 Australian Bureau of Statistics, *Submission 38*, p. 61.

43 IBM Australia Limited, *Submission 87*, p. 19.

44 IBM Australia Limited, *Submission 87*, pp. 1, 8–9.

45 Australian Bureau of Statistics, *Submission 38*, p. 57.

46 Dr Robert Merkel, *Submission 1*, pp. 9–11.

47 Australian Bureau of Statistics, *Submission 38*, p. 67.

48 Dr Robert Merkel, *Submission 1*; Mr Adam Roth, *Submission 53*; Mr Ian Brightwell, *Submission 60*.

49 Dr Robert Merkel, *Submission 1*, pp. 10–11.

3.38 It was also pointed out to the committee that it is very difficult to simulate how humans are going to interact with software:

Creating a 'real' load to test effectively with is challenging. It can be very expensive to generate sessions which fully replicate a 'real' load situation. Often loads generated for testing are not sufficiently 'real' to fully load the webservers.⁵⁰

3.39 The ABS retained the services to UXC Saltbush to undertake a code review and penetration testing. Penetration testing looks for security weaknesses that an attacker might exploit. IBM reports that 'no issues of significance emerged in the course of either testing program'.⁵¹

Conducting the census

3.40 A key cost of delivering censuses in the past was the large number of temporary staff that needed to be employed to deliver and collect census forms from every household in Australia. One of the key motivators of moving to an eCensus solution was the unsustainability of this model:

The traditional approach to the 2011 and previous Censuses was reliant on increasing the number of field staff in order to deliver and collect forms or online access codes from every dwelling. Recruiting a sufficient number of staff required for the short-term field operation has become more difficult; and staff costs have escalated. In 2011, there were a number of areas where sufficient field staff could not be recruited and the ABS needed to fly in higher paid ongoing employees. In addition, with decreasing numbers of people in each household and an increased proportion of the population that is in the workforce, Census collectors have had decreasing success in contacting people at their homes. Some dwelling types such as secure apartment buildings are particularly problematic for hand delivery and collection of materials.⁵²

3.41 The 2016 census changed the way census materials were to be delivered to the public and returned to the ABS. It was explained to the committee that:

Australia Post's mail service was used to deliver and return required materials from the majority of households. The majority of households responded online. Households are able to request a paper form through an automated phone service if they preferred or needed to respond by paper.

...

In some areas of Australia, where the postal service was likely to be unsuitable or insufficient address information was known, Census Field Officers delivered materials to each dwelling, enabling residents to either complete their form online or mail back a paper form. In other areas where a high proportion of residents were expected to need to complete the

50 Mr Ian Brightwell, *Submission 60*, p. 1.

51 IBM Australia Limited, *Submission 87*, p. 12.

52 Australian Bureau of Statistics, *Submission 38*, p. 40.

Census form on paper, all households were delivered paper forms in addition to login numbers (e.g. in areas where there is a higher proportion of older residents).⁵³

3.42 The majority of households received a login code via the post that enabled them to log in to the eCensus website during the collection period. The remainder of households were posted or hand-delivered a paper census form to be completed, and later collected by Census Field Officers.⁵⁴

Communication of move to eCensus

3.43 It was reported by the ABS that 'a communication campaign designed to drive participation is a key component of every Census'.⁵⁵ The committee heard that awareness raising is necessary because of the relatively long period between Censuses, as well as new arrivals to Australia not being familiar with the process. In addition, there were significant process changes to communicate because of eCensus. The changes to the 2016 census were to be communicated to the public through a variety of vectors:

The 2016 Census national campaign comprised integrated paid advertising, media and public relations, social media and online communication, stakeholder communication, special audience advertising and communication, and the development and distribution of information materials.⁵⁶

3.44 The committee heard that the census was advertised across television, radio, print, digital and social media; additional advertising was also adapted and translated for Indigenous and culturally and linguistically diverse audiences.⁵⁷

3.45 The committee heard some concerns regarding the advertising undertaken by the ABS.⁵⁸ Vision Australia reported that some public advertising material was inaccessible to the blind and low vision community.⁵⁹ Interlime observed that 'the advertising campaign was not very effective in engaging with Australians or explaining the importance of the Census'.⁶⁰ It was also argued that the ABS did not adequately explain the changes in how the 2016 census was to be completed.⁶¹

3.46 Research conducted before the census showed that in July 2016, 78 per cent of people were aware of the census. Further research conducted between 17 August

53 Australian Bureau of Statistics, *Submission 38*, p. 53.

54 Australian Bureau of Statistics, *Submission 38*, p. 53.

55 Australian Bureau of Statistics, *Submission 38*, p. 59.

56 Australian Bureau of Statistics, *Submission 38*, p. 59.

57 Australian Bureau of Statistics, *Submission 38*, p. 60.

58 Name withheld, *Submission 59*, p. 2.

59 Vision Australia, *Submission 76*, p. [5].

60 Interlime, *Submission 70*, p. 1.

61 Dr Cassandra Cross, *Submission 66*, p. 2.

and 4 September showed that 96 per cent of respondents were aware of the census. Less than one per cent of people who were aware of the census indicated that they did not intend to complete it.⁶²

Telephone assistance

3.47 The Census Inquiry Services (CIS) is established each census to provide telephone and email based support to the public throughout the census period. The 2016 census saw the introduction of the Paper Request Form Services (PRFS) to automatically process requests for paper census forms. The ABS signed a Memorandum of Understanding with the Australian Taxation Office to provide call centre operations for the 2016 census.⁶³

Emphasis on 9 August

3.48 Households are able to complete the Census over a number of months. The Census does not have to be completed on any specific date, but the answers should provide information related to the reference date. In 2016, this date was 9 August.⁶⁴ For example, if a household completed their form on 2 September, they should answer the questions as they would have had they completed the form on 9 August.

3.49 The 2016 census advertising campaign followed a similar format as previous Censuses with a strong emphasis on the reference night. The ABS explained that this approach was taken in order to:

- keep the message simple;
- mobilise people around an 'event'; and
- ensure that census forms are completed in respect of census night.⁶⁵

3.50 The committee heard concerns that the tight focus on the reference date left many Australians with the incorrect impression that they must complete the census on 9 August.⁶⁶ IBM, for instance, argued that one of the consequences of the ABS focusing heavily on 9 August in information advertising was that many people may have formed the view that the census had to be completed on 9 August.⁶⁷ The eCensus website was in fact open for a total of 61 days, during which time Australians were able to complete the census online. ID Consulting was also critical of the way the ABS communicated with the public regarding how to complete their census forms:

There was poor communication from the ABS on the date for completion. The online site was always planned to be online from July 25 to September 23, to allow people a large window to complete the form, and

62 Australian Bureau of Statistics, *Submission 38*, p. 71.

63 Australian Bureau of Statistics, *Submission 38*, p. 63.

64 Australian Bureau of Statistics, *Submission 38*, p. 2.

65 Australian Bureau of Statistics, *Submission 38*, p. 59.

66 Mr John Denham, *Submission 23*, p. [2].

67 IBM Australia Limited, *Submission 87*, p. 5.

give the last few an option to still complete online while being followed up by field officers. But this was widely publicised as “You have until September 23 to complete it”, so people were confused as to why they were being followed up before that date. ABS needs to be clearer that August 9th is the reference date and it needs to be completed as close to the date as possible.⁶⁸

3.51 The events of 9 August are discussed in detail in chapter 6 of this report, including the performance of the website and telephone services, as well as the conduct of census field officers.

68 ID Consulting Pty Ltd, *Submission 39*, p. [5].

Chapter 4

Say my name, [save] my name...

The citizen's right to privacy, in contrast with the needs of government and the people for good information on all Australians, has been a fundamental issue for the Bureau since it was established. Part of the difficulty lies in the fact that what is acceptable to ask, changes over time with the evolution of attitudes in society.¹

4.1 Privacy concerns have been a regular feature of censuses, as discussed in chapter 2. One of the most contentious elements of the 2016 census was the decision by the ABS to retain the names and addresses of respondents for up to four years to increase the value that could be extracted from the census data. Name and address information has always been collected as part of the census for the purpose of ensuring that the count was accurate and complete. After the data was processed, the name and address information was then destroyed, typically within 12 to 18 months.²

4.2 This chapter considers this decision by the ABS in the following way:

- the timeline and actions leading to the decision to collect names and addresses; and
- a consideration of whether the ABS has the power to retain names and addresses.

4.3 The following chapter will continue on a similar theme, but will focus on the storage, security and use of name and address data. Chapter 6 will discuss the events that took place on 9 August.

4.4 During the discussion leading up to the census, there was some confusion regarding the difference between privacy and secrecy. Former Australian Statistician Bill McLennan explained: 'Privacy is not secrecy. It is about giving individuals control over how their personal information is handled'.³ Secrecy can be considered as determining who has access to information, whereas privacy is determining whom we provide information. This chapter considers privacy concerns, the following will focus on matters of information security.

4.5 Many submissions levelled criticisms at the ABS over its conduct leading up to the decision to retain names and addresses, including allegations that it did not consult properly, that it was insufficiently open regarding the impact of the changes, and that the Privacy Impact Assessment (PIA) was insufficiently robust for a change affecting data collected compulsorily from every household in Australia.

1 Australian Bureau of Statistics, *Informing a Nation: the evolution of the Australian Bureau of Statistics 1905-2005*, Commonwealth of Australia, Canberra, 2005, p. 99.

2 Professor Ian Ring, *Submission 9*, p. [1].

3 Mr Bill McLennan, *Submission 37*, p. 2.

Retention of names and addresses

4.6 The 2016 census was new in that it proposed to retain name and address information collected as part of the census for the purpose of increasing the uses of the collected data, rather than only for data integrity. As the ABS reported:

With the changes to retention of names and addresses, the ABS will be able to produce more policy relevant statistics on aspects such as industrial change in Australia, the performance of health and education services, and key determinants of changes in local communities and households over time. These new statistics will help governments and Parliaments make more informed policy choices over coming years.⁴

4.7 As noted in chapter 2, name and address information from previous censuses have been destroyed following processing in accordance with ABS policy in relation to retention of personal identifiers. The policy states:

It is ABS policy that name, address and other identifiers of individuals must be deleted from collected survey and administrative files as soon as practical after processing, unless there is a business need approved by the Australian Statistician.⁵

4.8 The ABS proposed that by combining census data with other administrative datasets, a more granular picture of Australia would emerge:

[The] use of statistical data integration techniques to bring together Census data with other survey and administrative data would enable the ABS to meet the growing demand of policy agencies (e.g. Department of Social Services, Department of Health), service providers and the research community for higher quality 'joined-up' information to better inform planning decisions and government policies in the public good. In particular, the use of names and addresses to improve the quality and accuracy of linked information, would enhance the ability of policy makers and researchers to effectively measure changes over time or differences between population sub groups or regions.⁶

4.9 In August 2015—four years after preparations for the census had begun—the ABS published the 'Census of Population and Housing: Nature and Content, Australia, 2016' which foreshadowed the ABS was considering the retention of both names and addresses for statistical purposes.⁷ In October 2015, the ABS published 'Information Paper: Census of Population and Housing—Proposed Products and Services, 2016' which highlighted that data integration across datasets would be a central element of

4 Australian Bureau of Statistics, *Submission 38*, p. 6.

5 Australian Bureau of Statistics, *Retention of names and addresses collected in the 2016 Census of Population and Housing*, freedom of information request, 30 May 2016, p. 11.

6 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 7.

7 Australian Bureau of Statistics, *Submission 38*, p. 51.

the census.⁸ This was followed up in November 2015 with notification of a statement of intent to conduct a PIA regarding the decision to collect names and addresses.

4.10 Documents provided to the committee show that within the ABS, the move to retain names and addresses was not considered controversial:

The proposed changes were an incremental change to existing practice in the widely publicised Census Data Enhancement program undertaken with the 2006 and 2011 Censuses.⁹

4.11 There appears to have been a belief within the ABS that destroying name and address information was preventing the organisation from meeting its objectives:

There is a widely held view within ABS that continuing to operate under such restrictions [destroying name and address information] will be a significant barrier in meeting both statistical and operational aspirations.¹⁰

4.12 Following the conclusion of an internally conducted PIA in December 2015 regarding the retention of names and addresses, the ABS announced that names and addresses would be retained until there was no longer any community benefit to their retention.¹¹

4.13 Following concerns raised in the media and online regarding the impact of retaining names and addresses indefinitely, the ABS announced in April 2016 that this information would be retained for a period of no more than four years before being destroyed.¹² The ABS informed the committee that:

This decision was considered by the ABS to provide a balance between the use of Census data and the extensive privacy protections in place for the 2016 Census.¹³

Privacy Impact Assessment 2015

4.14 A PIA is a systemic assessment of a project that identifies the impact that a project might have on the privacy of individuals, and sets out recommendations for managing, minimising or eliminating that impact.¹⁴ The ABS informed the committee

8 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 19.

9 Australian Bureau of Statistics, *Submission 38*, p. 119.

10 Australian Bureau of Statistics, 'Retention of names and addresses collected in the 2016 Census of Population and Housing', freedom of information request, 30 May 2016, p. 2.

11 Australian Bureau of Statistics, *Submission 38*, p. 5.

12 Australian Bureau of Statistics, *Submission 38*, p. 52.

13 Australian Bureau of Statistics, *Submission 38*, p. 81.

14 Office of the Australian Information Commissioner, *Guide to undertaking privacy impact assessments*, <https://www.oaic.gov.au/agencies-and-organisations/guides/guide-to-undertaking-privacy-impact-assessments> (accessed 10 October 16).

that PIAs are a standard part of the ABS' project approval process ensuring that privacy concerns are embedded in the design of new initiatives.¹⁵

4.15 As explained by the Australian Privacy Foundation:

A Privacy Impact Assessment, properly and independently conducted, is [an]...essential and rigorous tool for discovering and understanding the full range of information security, data protection and privacy risks in a proposal; for enabling well-informed community, expert and stakeholder input to aid that process; and for supporting transparency and evidence-based analysis of the adequacy of the proposed remedies for those risks.¹⁶

4.16 The PIA appears to have been the primary consultation mechanism used by the ABS regarding the decision to retain names and addresses. On 11 November 2015, the ABS issued a press release calling for submission by 2 December 2015 on a proposal to collect and retain names and addresses as part of the 2016 census.¹⁷

4.17 The PIA found that retaining names and addresses has 'very low risks to privacy, confidence and security'.¹⁸ The ABS announced its intention to retain names and addresses in a press release on 18 December 2015.¹⁹

4.18 It was explained to the committee that the ABS made this decision following a public consultation process and on the basis that independently run focus group research indicated that 'support for the change and significant public concern would be unlikely'.²⁰

4.19 The ABS contend that the PIA was completed according to best practice:

The ABS sought advice from the Office of the Australian Information Commission on the 2015 PIA, and followed their best practice guidelines issued by that office.²¹

4.20 The committee heard several concerns regarding the conduct and outcome of the PIA which are outlined below.

15 Australian Bureau of Statistics, *Submission 38*, p. 27.

16 Australian Privacy Foundation, *Submission 74*, p. 7.

17 Australian Bureau of Statistics, *Statement of Intent – ABS to conduct a Privacy Impact Assessment on retention of names and addresses from responses to the 2016 Census*, press release, <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/Statement%20of%20Intent%20E2%80%93%20Privacy%20Impact%20Assessment%202016%20Census> .

18 Australian Bureau of Statistics, *ABS response to Privacy Impact Statement*, 18 December 2015, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mediareleasesbyReleaseDate/C9FBD077C2C948AECA257F1E00205BBE?OpenDocument> .

19 Australian Bureau of Statistics, *ABS response to Privacy Impact Statement*, 18 December 2015, <http://www.abs.gov.au/AUSSTATS/abs@.nsf/mediareleasesbyReleaseDate/C9FBD077C2C948AECA257F1E00205BBE?OpenDocument> .

20 Australian Bureau of Statistics, *Submission 38*, p. 5.

21 Australian Bureau of Statistics, *Submission 38*, p. 118.

Consultation

4.21 The Office of the Australian Information Commissioner (OAIC) publishes a guide to undertaking privacy impact assessments. One of the principal steps is titled 'Identify and consult with stakeholders', and states:

Identify the project stakeholders. Consulting them can help to identify new privacy risks and concerns, understand known risks better, and develop strategies to mitigate all risks.²²

4.22 The ABS consultation for the PIA consisted of a media release published on the ABS website on 11 November directing attention to a 'Statement of Intent' with respect to the PIA; discussions with 16 focus groups; and discussions with State, Territory and Commonwealth Information or Privacy Commissioners.²³

4.23 The PIA reported that feedback from focus group testing:

...indicated a general level of support for retaining names and addresses, and the use of anonymised linkage keys for the purposes of ensuring a higher accuracy in the linkage rate than is currently possible for joined up datasets.

...

In working through examples, focus groups were generally comfortable with the protections that the ABS would put in place to preserve privacy and confidentiality on the proviso that the ABS be transparent about how it handles people's personal information.²⁴

4.24 The PIA was reported on by two news outlets, *IT News* and *PS News*, and received three submissions from members of the public who 'all raised concerns with the proposal'.²⁵ The PIA does not say what these concerns were.

4.25 The Australian Privacy Foundation (APF) was clear in its position that the ABS did not undertake a proper consultation process for the PIA, stating:

The consultation process by the ABS in relation to proposed changes to the census was at best incompetent and at worst a sneaky attempt to make serious changes without anyone noticing. The APF was not specifically

22 Office of the Australian Information Commissioner, *Guide to undertaking privacy impact assessments – summary*, <https://www.oaic.gov.au/agencies-and-organisations/guides/pia-guide-qr> (accessed 11 October 2016).

23 Ms Michelle Worthington & Mr Daniel Connolly, *Submission 79*, p. 5.

24 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 19.

25 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 20.

consulted about the proposed changes and we were completely unaware of the consultation, as it seems were other interested NGOs.²⁶

4.26 Digital Rights Watch (DRW) and others expressed concern that there was insufficient public consultation, as later evidenced by community concern regarding the changes.²⁷ Former Australian Statistician Bill McLennan similarly expressed concerns that insufficient consultations were conducted regarding the changes.²⁸

4.27 The ABS received only three written submissions for the PIA. Some submissions to this inquiry took this as evidence that there was insufficient communication from the ABS regarding the proposed changes and the PIA.²⁹

4.28 The PIA claims 'the ABS directly notified key internal and external stakeholders of its proposal to retain names and addresses'.³⁰ Internal ABS documents show that external stakeholders consisted of the Australian Statistics Advisory Council, the Commonwealth Treasurer's office, the Assistant Minister to the Treasurer, the Commonwealth Privacy Commissioner, and state and territory privacy commissioners.³¹

4.29 Based on the information received by the committee, there is no evidence that the ABS consulted with community groups, non-government organisations or privacy advocacy groups.³²

Privacy Impact Assessment completed internally

4.30 There is no requirement for a PIA to be conducted by an external organisation. The OAIC does note however, that some projects would benefit from the use of external providers:

Some projects will have substantially more privacy impact than others. A robust and independent PIA conducted by external assessors may be preferable in those instances. This independent assessment may also help the organisation to develop community trust in the PIA findings and the project's intent.³³

26 Australian Privacy Foundation, *Submission 74*, p. 5.

27 Digital Rights Watch, *Submission 51*, p. 3; Name withheld, *Submission 58*, p. [4].

28 Mr Bill McLennan, *Submission 37*, p. [2].

29 Ms Michelle Worthington & Mr Daniel Connolly, *Submission 79*, p. 5.

30 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 19.

31 Australian Bureau of Statistics, *Retention of names and addresses collected in the 2016 Census of Population and Housing*, freedom of information request, 30 May 2016, p. 30.

32 Ms Michelle Worthington & Mr Daniel Connolly, *Submission 79*, p. 5.

33 Office of the Australian Information Commissioner, *Guide to undertaking privacy impact assessments*, <https://www.oaic.gov.au/agencies-and-organisations/guides/guide-to-undertaking-privacy-impact-assessments> (accessed 11 October 2016).

4.31 There were considerable differences of opinion regarding how significant the privacy changes in the lead-up to the census were. The ABS' submission argues that 'the proposed changes were an incremental change to existing practice', whereas the APF posited that 'it is hard to think of an example of a PIA that would be more important than the PIA for a Census.'³⁴ The Castan Centre for Human Rights Law (CCHRL) similarly stated: 'Retaining information that can be linked to Census records has significant privacy implications'.³⁵

4.32 Indeed, the census affects all Australians, and even if the changes themselves were relatively minor—a point not conceded by many—the cumulative privacy impacts are inevitably large.

Inconsistencies compared with other PIAs

4.33 Some submissions pointed out that there appeared to be inconsistencies between the findings of PIAs conducted in 2005 and 2015, despite them covering similar concerns.

4.34 The 2015 PIA concluded that:

In relation to the proposed retention of names and addresses from responses to the 2016 Census, a small number of potential risks to personal privacy and public perception of the ABS have been identified. This Assessment concludes that in each case, the likelihood of the risks eventuating is 'very low'. It also concludes that the ABS has implemented robust processes to manage data and protect privacy, and that these arrangements effectively mitigate these risks. Any residual risks are such that the ABS is capable of managing.³⁶

4.35 In 2005, Pacific Privacy Consulting completed a PIA for the ABS regarding a proposal to create a Statistical Longitudinal Census Dataset (SLCD) that would use probabilistic data matching techniques, rather than names and addresses, to link records.³⁷ The SLCD would have been used to combine data from the 2006 census with future census data to enhance the value of the dataset. The 2005 proposal would have not resulted in names and addresses being retained for any longer than in

34 Australian Bureau of Statistics, *Submission 38*, p. 118; Australian Privacy Foundation, *Submission 74*, p. 7.

35 Castan Centre for Human Rights Law, Monash University, *Submission 48*, p. 2.

36 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 25.

37 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed 10 October 2016), p. 8.

previous censuses.³⁸ The 2005 PIA noted that although individual records would not be stored against a name and address, successive censuses would increase the uniqueness of records making identification a possibility.³⁹ The PIA concluded:

[The] ABS would be unwise to place too great a reliance on the limited use of names and addresses in the linkage proposals. What is important from a functional privacy perspective is the ability to associate a record with a particular known individual, whether or not the information uniquely identifies that individual.⁴⁰

4.36 The ABS appeared unable to explain why the results of the 2005 PIA were significantly different from the 2015 PIA, noting only that:

The PIA undertaken in 2005 considered a proposal to create a statistical longitudinal census dataset comprising 100 [per cent] of Census records. The ABS took account of the outcome from the PIA and the public consultation process and decided to link only a 5 [per cent] sample. The Australian Census Longitudinal Dataset, as it is now called, will continue to take the 5 [per cent] sample approach.⁴¹

4.37 Given the initial 2005 proposal to create a statistical longitudinal data set using all of the census records sounds much the same as the 2016 proposal, this explanation is not entirely satisfactory. At a more general level, the committee heard proposals to use personal identifiers to facilitate linking census data had been proposed and rejected in both 2006 and 2011 on privacy grounds.⁴²

The ABS' power to collect statistical information

4.38 The powers of the ABS to collect information from the public are laid out in the *Australian Bureau of Statistics Act 1975* (ABS Act) and the *Census and Statistics Act 1905* (Census Act).

38 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed 10 October 2016), p. 10.

39 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed 10 October 2016), p. 29.

40 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed 10 October 2016), p. 30.

41 Australian Bureau of Statistics, *Submission 38*, p. 119.

42 Salinger Privacy, *Submission 24*, p. 9; Mr Bill McLennan, private capacity, *Committee Hansard*, 25 October 2016, p. 5.

4.39 Section 6 of the ABS Act gives the ABS the authority to collect, compile, analyse and disseminate statistics and related information. In addition, the Census Act:

- empowers the Australian Statistician to collect statistical information on a broad range of demographic, economic, environmental and social topics; and
- enables the Australian Statistician to direct a person to provide statistical information, in which case they are legally obliged to do so.⁴³

4.40 The PIA conducted by the ABS argued that:

Names and addresses are among the matters in relation to which the Statistician may collect information...[The] proposal to permanently retain name and address information from responses to the 2016 Census does not involve the collection of additional information than that collected in the 2011 Census.⁴⁴

4.41 The ABS also has an obligation to comply with the *Privacy Act 1988*, including the Australian Privacy Principles (Principles). The PIA explains the relevance of the Principles to the retention of names and addresses:

In accordance with Australian Privacy Principle 3, the ABS may collect personal information (such as name and address) where it is reasonably necessary for, or directly related to, its functions or activities. Australian Privacy Principle 11 provides that the ABS may retain the personal information of an individual where that information continues to meet a business need that is aligned with the purpose for which the information was collected.⁴⁵

4.42 In *Johns v Australian Securities Commission* (1993) 116 ALR 56, the High Court held that if someone compulsorily obtains information using a statutory power, they must only use or disclose that information for the purposes set out in, or implied by, the statute.

4.43 Some submissions queried whether the ABS has the power to collect names and addresses for uses other than ensuring a complete census count.⁴⁶

43 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 8.

44 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 9.

45 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 9.

46 Castan Centre for Human Rights Law, Monash University, *Submission 48*, p. [4]; Ms Katherine Miller, *Submission 67*, p. [2].

Are names statistical information

4.44 The ABS has the power to collect 'statistical information'. A number of submissions queried whether or not names and addresses constitute statistical information, and therefore whether the ABS has the authority to compel their production.⁴⁷

4.45 'Statistical information' is not defined in legislation, but section 12 of the Census Act provides that:

The Statistician shall compile and analyse the statistical information collected under this Act and shall publish and disseminate the results of any such compilation and analysis, or abstracts of this result.⁴⁸

4.46 A number of stakeholders argued that statistical information is information that is collected, compiled and published.⁴⁹ For example, CCHRL submitted:

This suggests that information that is 'statistical information' is information that will be 'compiled'—assembled in order to be 'analysed'—examined in the aggregate—for the purpose of publishing and disseminating the results.⁵⁰

4.47 This view was echoed by former Australian Statistician Bill McLennan who explained:

What it says in the act is that, if you collect the information, you then have to compile statistics and publish them. The bureau is about collecting, compiling and publishing statistics—that is its job in a nutshell and it always has been. The act, as it is currently written, states that that has to happen, so you start collecting names, then say to yourself: how am I going to compile statistics about names?

...

Obviously, under collecting names in the census, we are not doing anything in this last census to collate statistics and therefore we are not publishing them. The act says: the ABS shall collate and the ABS shall publish.⁵¹

4.48 The ABS argued that names and addresses are statistical information that has been compulsorily collected for over 100 years, writing:

The Census of Population and Housing has collected names and addresses on a compulsory basis since 1911. The ABS considers names and addresses as statistical information that can be lawfully collected and used for

47 Ms Katherine Miller, *Submission 67*, p. [2]; Name withheld, *Submission 42*, p. [3]; Castan Centre for Human Rights Law, Monash University, *Submission 48*, pp. [3–4]; Dr William Pettersson, *Submission 43*, p. 3; Ms Kate Galloway, *Submission 10*, p. 2.

48 *Census and Statistics Act 1905*, s. 6.

49 Salinger Privacy, *Submission 24*, p. 10.

50 Castan Centre for Human Rights Law, Monash University, *Submission 48*, p. [5].

51 Mr Bill McLennan, private capacity, *Committee Hansard*, 25 October 2016, p. 3.

statistical purposes. They are an essential part of the Census statistical process and have been for over 100 years.⁵²

4.49 It was suggested that name and address information be collected on an optional basis, much the same as is done for religion.⁵³ This approach would mimic the compromise reached with the retention of name and address information in the national archive, where households are given the choice—and therefore some control—over how their information is used.

Was parliament properly informed of the change

4.50 Under section 6(3) of the *Australian Bureau of Statistics Act 1975*, the ABS must lay before both houses of Parliament 'each new proposal for the collection of information for statistical purposes' before its implementation.⁵⁴

4.51 The committee was informed that:

[This] provision was added as an amendment to the Australian Bureau of Statistics Bill with the express intention of giving Parliament the opportunity to review, and if necessary, intervene to alter or even halt proposed collections of information for statistical purposes in instances where the proposed collection would be on a compulsory basis.⁵⁵

4.52 The ABS tabled in the Senate 'Proposal No. 6 of 2016: 2016 Census of Population and Housing and Post Enumeration Survey' (Proposal) on 17 March 2016.⁵⁶ The Proposal made no mention of names and addresses being retained, nor did it mention that this represents a break from past censuses. The ABS appears to have been firmly of the belief that the changes around name and address information were an incremental change that did not require parliamentary oversight.

Arguments against the retention of name and address information

4.53 As well as the specific process orientated concerns discussed above, the committee heard a number of arguments against the retention of name and address information. These included a loss of trust in the ABS and the potential for lower quality responses threatening the reliability of collected data, the threat to privacy by the existence of the census data set, and the unknown uses to which the data may be put.

52 Australian Bureau of Statistics, *Submission 38*, p. 37.

53 William Pettersson, *Submission 43*, p. 3.

54 *Australian Bureau of Statistics Act 1975*, ss. 6(3).

55 Ms Michelle Worthington & Mr Daniel Connolly, *Submission 79*, p. 8.

56 Australian Bureau of Statistics, *Proposal No 6 of 2016: 2016 Census of Population and Housing and Post Enumeration Survey*, [http://abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/901bbace602d0f3bca257b730015d166/\\$FILE/06%202016.pdf](http://abs.gov.au/websitedbs/d3310114.nsf/4a256353001af3ed4b2562bb00121564/901bbace602d0f3bca257b730015d166/$FILE/06%202016.pdf) (accessed: 11 October 2016).

Loss of trust in ABS

4.54 It was argued to the committee that the destruction of name and address information is central to the willingness of individuals to give up their personal information to help society distribute goods and services equitably:

There is an implicit social compact underpinning the Census: give us our anonymity and privacy, and every five years we will give you the data you want, in the form of a national, anonymous snapshot, to be used for planning, policy and research purposes. We will answer all those questions, truthfully, because we have been promised that our answers will never actually be linked back to us.⁵⁷

4.55 The CCHRL argued that the decision to retain names and addresses is a threat to privacy:

We are concerned that the use of census data and data linkages across government agencies leads us into 'a system requiring personal information under compulsion of law where the system has increasingly powerful capacity to store, sort, match and predict' individual behaviour...Such a system, even if authorised by law, itself represents a fundamental breach of people's rights to privacy.⁵⁸

4.56 The APF argued that the changes introduced in the 2016 census have harmed the reputation of the ABS in the community:

Before the 2016 census the Australian public generally trusted the ABS. This is no longer true for many Australians. That trust was destroyed by the ABS when it changed the purpose of the census from aggregated statistical data to personal tracking. It still remains unclear what the ABS plans to do with the personal information it has collected.⁵⁹

4.57 The committee heard that the willingness of the community to engage in statistical projects is proportionate to the trust the community has in that organisation. If respondents do not trust that their information is safe they are less likely to honestly participate in the activity.⁶⁰

4.58 Electronic Frontiers Australia argued that the changes to the 2016 census may represent an ongoing threat to future Censuses:

The apparently significant erosion of public trust resulting from the manner in which the 2016 Census has been implemented represents a serious threat

57 Salinger Privacy, *Submission 24*, p. 4.

58 Castan Centre for Human Rights Law, Monash University, *Submission 48*, p. [4].

59 Ms Katherine Lane, Vice-Chair, Australian Privacy Foundation, *Committee Hansard*, 25 October 2016, p. 56.

60 Dr Roger Clarke, Board Member, Australian Privacy Foundation, *Committee Hansard*, 25 October 2016, p. 57; Online Hate Prevention Institute, *Submission 55*, p. 1.

to both the integrity of the data collected in the 2016 Census and to all future Censuses.⁶¹

4.59 It was put to the committee that while the ABS was a widely trusted organisation, it is necessary that the ABS continues to engage with stakeholders to assuage 'actual or perceived' risks in completing the census to ensure ongoing high data quality.⁶²

4.60 The ABS recognises the importance of community trust in completing its work, with the ABS' Corporate Plan citing trust as one of the essential components of its success.⁶³ The ABS argues that it enjoys high levels of community support:

An independent survey in 2015 found that institutional trust was high among general community respondents with 81 [per cent] indicating that they either trust greatly or tend to trust the ABS. Among the informed users of ABS products, the level of trust rose to 100 [per cent]. These are very high trust ratings for an organisation, and higher than comparable surveys of statistical organisations in other countries.⁶⁴

4.61 Although the final census results will not be ready for some time, the committee was informed that initial quality checks conducted by the ABS 'show low levels of item non-response to the known sensitive questions'.⁶⁵ The ABS further reports a preliminary response rate in excess of 96 per cent, indicating that the concerns relating to the 2016 census did not temper community enthusiasm for statistical participation.⁶⁶

Function creep

4.62 The committee heard concerns regarding function creep where data collected for one purpose is later used for another. One of the key questions that anyone naturally has when asked to provide information, is the use to which that information will be put. This report has already canvassed some of the uses to which census data is put, including determining electoral boundaries, determining areas in need of greater public services, and tracking changes in demographics. A number of submissions queried how the enhanced dataset would be used by the ABS and government.

4.63 Australia has no privacy protections written into the Constitution. This means that there is no way the government can guarantee that the current and proposed

61 Electronic Frontiers Australia, *Submission 72*, p. 4.

62 ARC Centre of Excellence for Children and Families over the Life Course, *Submission 32*, p. [3].

63 Australian Bureau of Statistics, *Submission 38*, p. 24.

64 Australian Bureau of Statistics, *Submission 38*, p. 8.

65 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 26.

66 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 26.

legislative controls will remain indefinitely. Current protections might be robust, but there is no guarantee this will continue.

4.64 There are examples from Australia's past where governments have put short-term administrative need ahead of principle. Prior to the World War II, the then Tax Commissioner attempted to access census data for the purposes of a court action against a taxpayer. In that instance the Australian Statistician had, in the meantime, destroyed the name identified census card thereby preventing the use of this data. Although the legislative loophole that enabled the Tax Commissioner to make this claim has since been closed, it does highlight how data collected for one purpose at one point in time is often threatened with repurposing.⁶⁷

4.65 Even if consent is given initially to collect and use the data, we have no way to ensure that someone consents to that data being put to different uses.⁶⁸ Salinger Privacy expressed concerns relating to the potential uses of the census dataset:

It is my opinion that the risk of function creep was under-estimated by the ABS. Once they hold identifiable data on all 24 million people in Australia, I cannot believe that not a single government department, Minister or police force will be interested in tapping into that data for their own, non-research purposes. A list of the agencies queueing up to gain access to the metadata that telecommunications companies must now keep by law provides a salient example of the likelihood of function creep.⁶⁹

4.66 The committee heard that concerns regarding function creep featured prominently in the findings of the 2005 PIA, and were also cited by the ABS in a submission to the 1997 'Parliamentary Inquiry into the Treatment of Census Forms' in which the ABS recommended against the retention of identified census data.⁷⁰

4.67 The PIA prepared by the ABS relating to the retention of name and address data considered the possibility of function creep which it defined as: 'name and address information from the 2016 Census may be used for purposes beyond what is currently contemplated by the ABS'.⁷¹ The ABS assessed the likelihood as 'very low', and would mitigate against the risk by ensuring that 'any data integration project

67 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed: 10 October 2016), p. 40.

68 Tess Deyl, *Submission 35*, p. [2]; Dr Cassandra Cross, *Submission 66*, p.4; Dr Monique Mann & Dr Matthew Rimmer, *Submission 75*, p. 41; Name withheld, *Submission 45*, p. 2.

69 Salinger Privacy, *Submission 24*, p. 12.

70 Ms Michelle Worthington & Mr Daniel Connolly, *Submission 79*, p. 4.

71 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 23.

involving retained information is undertaken for statistical and research purposes only'.⁷²

Linking to administrative datasets

4.68 A further criticism of the ABS' handling of the decision to retain name and address information was the lack of clarity regarding how this data would be used in linking datasets. Legal academic Dr Cassandra Cross argued that linked data sets represent a growing threat to individual privacy:

The linking of Census data to these other administrative data sets has the ability to paint a detailed picture of individuals and in and of itself, poses challenges to the privacy and anonymity of those subjected to it.⁷³

4.69 Assistant Professor Kate Galloway similarly argued that the linkage of compulsorily acquired data under the census to other data sets itself represents 'an increase in scope of the census' and an erosion of individual privacy.⁷⁴

4.70 The committee also heard views in support of linking census data with other data sets. Dr Liz Allen from the Australian National University (ANU) argued that many countries have been using statistically linked census data for decades, and that:

The benefits of data linkage outweigh any potential harm which may be associated with the statistical undertaking. An example of the power of Census linkage is the methodological work by the ABS estimating Aboriginal and Torres Strait Islander life expectancy.⁷⁵

4.71 The committee similarly heard support for data linkages from the ANU School of Demography:

Our second point is that the linkage of census data and other sources synergistically increases their value, and we would like to see more linkage in Australia. We provide an example to illustrate this point. Census data are necessary to provide the denominators for many indices, including demographic rates and many health measures. Without data linkage, the numerators and denominators, for example, to calculate the mortality from registered deaths and population numbers can only be aligned by reference to geographic area. Any additional information on the characteristics, such as the socioeconomic status, is assumed on the basis of the average socioeconomic status of people living in the area. In other words, the mortality of the individual is not directly linked to the socioeconomic status of the individual.⁷⁶

72 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 23.

73 Dr Cassandra Cross, *Submission 66*, p.6.

74 Ms Kate Galloway, *Submission 10*, p. 1.

75 Dr Liz Allen, *Submission 41*, pp. 4–5.

76 Dr Heather Booth, Associate Professor, School of Demography, Australian National University, *Committee Hansard*, 25 October 2016, p. 51.

4.72 It may be that at this point the ABS itself has not fully decided upon the scale of potential data linkages. Internal ABS documents from 2015 discuss some of the potential applications of improved statistical linkages:

ABS data integration activities can be expected to expand significantly in the coming years as ABS gains access to additional key nationally important administrative datasets. Maximising the utility of these datasets, as well as of the Census and survey datasets, will result from the ability to conduct multiple high quality linkage projects, through linking multiple administrative datasets, linking administrative datasets to surveys and/or the Census, and linking the Census to surveys. Name and address information has the potential to markedly improve the quality of data linkage.

...

Statistical data integration offers the potential to produce new data products, as well as enrich existing data products. There are many administrative datasets that are likely to have considerable statistical value. In addition to the Personal Income tax data which has already been used in data integration projects, future data integration projects could include the use of FaHCSIA welfare payments data, Centrelink unemployment benefits data, Medicare and Pharmaceutical Benefits Scheme data, Australian Immunisation Register, the AEC electoral role, and other nationally important datasets.⁷⁷

4.73 The ABS informed the committee that there currently exists strong demand for the delivery of greater statistical information on: the nature, extent and outcomes of industrial changes that are taking place in the economy; changes in the community as the population ages and work and family patterns change; the education and health interventions most likely to produce outcomes; and the outcomes of government programs and services.⁷⁸

4.74 The ABS reported to the committee that there was 'strong community support for high quality data linkage'.⁷⁹

Committee view

4.75 The committee is of the view that overturning the long-standing practice of destroying name and address data collected through the census is a significant change that warranted significantly more public consultation and external scrutiny than it received.

4.76 It is apparent to the committee that level of consultation undertaken by the ABS in the lead-up to this decision was manifestly inadequate, especially considering the changes affect every Australian household. At a minimum, the PIA should have been conducted by an independent body. This is especially so considering that the

77 Australian Bureau of Statistics, *Retention of names and addresses collected in the 2016 Census of Population and Housing*, freedom of information request, 30 May 2016, pp. 12–13.

78 Australian Bureau of Statistics, *Submission 38*, p. 80.

79 Australian Bureau of Statistics, *Submission 38*, p. 82.

ABS Executive Leadership Group was aware that within the organisation there was a 'widely held view' that the practice of destroying name and address was a barrier to meeting organisational objectives.⁸⁰

4.77 As discussed in chapter 2, previous privacy concerns regarding the census had resulted in reduced community participation in the census. We may live in an age where more and more personal data is voluntarily shared electronically, but we also cannot assume that Australians do not take their privacy seriously.

4.78 Based on the evidence received, the committee remains confident that the ABS is committed to using census data for the purpose for which it was collected. In weighing the prospect of any future function creep, the committee notes the ABS' strong track record of protecting personal information privacy. This can give Australian's confidence that the data collected through the census will be used for improving public services and the ability of governments to meet the needs of the Australian population.

4.79 Although the ABS has repeatedly declined to provide the legal advice received from the Australian Government Solicitor to the Senate—presumably confirming its authority to collect, retain and use names and addresses—the committee is not convinced that the ABS has acted beyond its powers, although some submissions expressed contrary views. The move to change how names and addresses are used is not insignificant however, as evidenced by the completion of a PIA in 2015, as well as similar investigations into the merits of such a scheme over the preceding decade.

4.80 As such, the committee is in agreement that all future PIAs relating to the census need to be undertaken by a suitably qualified external body and that the outcomes of this assessment are made publically available on the ABS website well in advance of any census. In addition, the committee is cognisant of the great work the ABS undertakes but is also aware of the significant negative impact the 2016 census has had on the ABS reputation. Once a new PIA is completed, the ABS should undertake extensive public consultations regarding any future changes or impact a new census might have in order to adequately inform the Australian public and its parliament, but also to re-establish its public credibility.

Recommendation 1

4.81 The committee recommends that all future Privacy Impact Assessments relating to the census, are conducted externally with the final report published on the ABS website 12 months in advance of the census to which it relates.

4.82 Following the release of a PIA recommending changes to future censuses, consultation across the Australian community should be undertaken by the ABS with the outcomes clearly documented on the ABS website no less than six months before a future census.

80 Australian Bureau of Statistics, *Retention of names and addresses collected in the 2016 Census of Population and Housing*, freedom of information request, 30 May 2016, p. 2.

Recommendation 2

4.83 The committee recommends that the ABS update its internal guidelines to make clear that consultation requires active engagement with the non-government and private sector.

Chapter 5

Information security

5.1 This chapter considers the security of the information kept by the ABS in order to undertake the census and associated activities. This chapter firstly discusses the logistical and administrative arrangements put in place to ensure information security, and then considers issues brought to the committee's attention regarding information security throughout this inquiry.

How the data will be stored and handled

5.2 Data provided through the eCensus application was encrypted during transmission and at rest within the IBM datacentre in NSW.¹ The ABS was the only organisation with the decryption keys to the census data.² As IBM explained to the committee:

In terms of the primary security objective here of protecting respondent data, we had encryption mechanisms in place to ensure that the data was fully encrypted while it was in transit—in flight from the respondent to the census site—and that it was encrypted while at rest and stored within the backend of databases. IBM does not have the keys to be able to decrypt that data, so we have not and have never been at any point able to see any of the respondent data that is stored on our systems.³

5.3 Once the census data has been provided to the ABS it is decrypted and processed. The ABS proposes to store name and address information separately from one another, and separate from other census information.

5.4 The 2015 PIA gave an overview of how the information gathered in the census would be retained:

After processing of the Census data, names and addresses would be separated from other personal and household information on the Census data set. Names and addresses would also be separated from each other. Names would not be brought back together with other information collected from respondents to the Census. Anonymised versions of names would be generated for data integration purposes and addresses geocoded.⁴

1 IBM Australia Limited, *Submission 87*, pp. 11, 19.

2 IBM Australia Limited, *Submission 87*, p. 19.

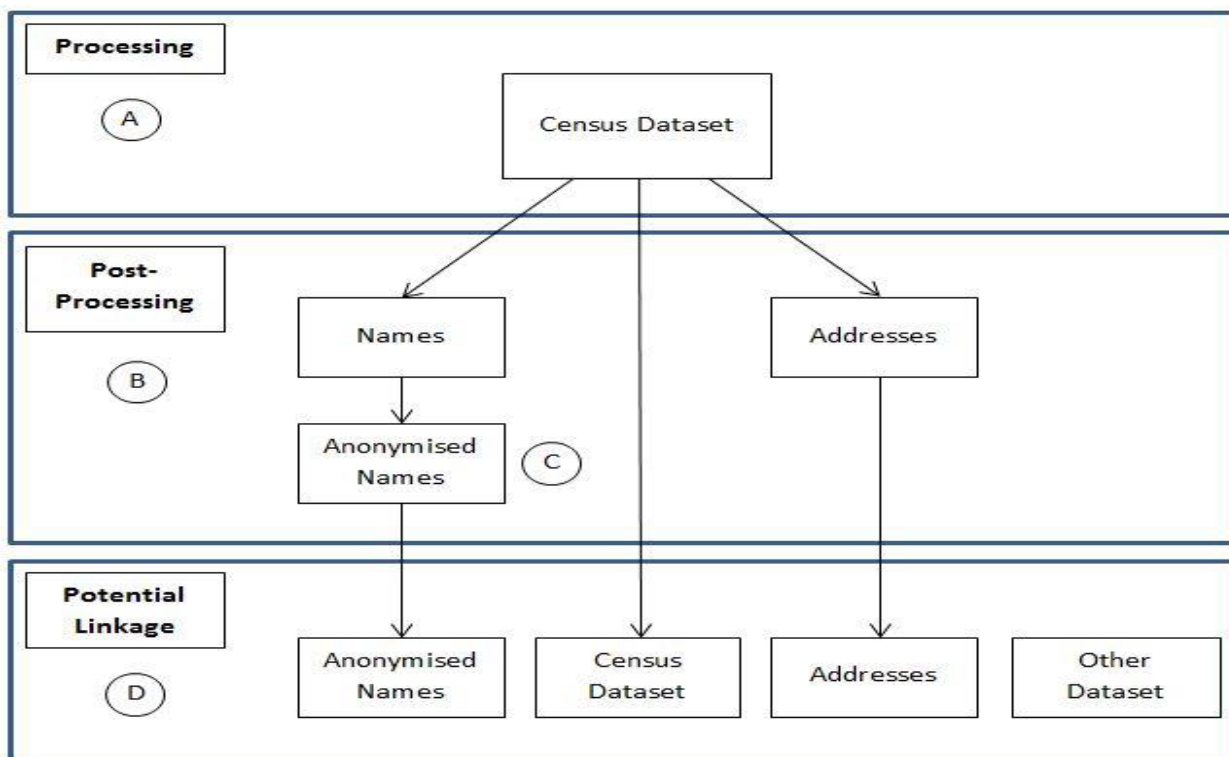
3 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 21.

4 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 11.

5.5 The ABS reports that the structural separation of names, addresses, and other data will mean that authorised ABS officers will only have access to the information required to support their role. Additionally, only a limited number of ABS staff would have access to the retained information.⁵

5.6 The 2015 PIA included an information flow diagram (figure 1) outlining how the ABS would handle census data.

Figure 1 Map of Information flows⁶



5.7 The ABS informed the committee that personal information is heavily protected with high-restricted access controls. Officers only have access to the specific data elements that they need to complete their research, not the entire dataset. Access

5 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 11.

6 A: Census staff will collect and process data from the 2016 census.

B: Names and addresses are permanently separated from the remainder of the census dataset, and stored securely in separate files with restricted access.

C: Anonymised versions of names would be generated from the names. These are stored separately from both files of names and the census dataset.

D: For approved data integration projects involving 2016 census data, demographic and anonymised name information is recombined on an as-needed basis to allow the census dataset to be used for statistical data linkage.

See: *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, p. 15.

to data will vary depending on the role the officer is performing, with no one staff member having access to both identifying and analytical information from datasets during the linking process.⁷

5.8 The ABS highlighted for the committee its strong track record in information management, noting that:

The ABS has strong legislative protections founded in the *Census and Statistics Act 1905* that safeguard the identity of a particular person or organisation, and it has a proud history of more than 100 years of maintaining community trust in the way it safely collects, uses, discloses and stores statistical information about people and businesses.⁸

5.9 The ABS began investing in a dedicated data integration facility in 2005 which builds upon and extends the internal mechanisms that the ABS uses to keep personal information secure. The facility was independently accredited as a Commonwealth data integration facility in 2012 satisfying the National Statistical Service accreditation requirements relating to the preservation of privacy.⁹ The ABS further assured the committee that data integration projects are closely managed so that privacy is protected:

The ABS requires all data integration project proposals to go through a rigorous assessment and approval process to ensure the project provides a significant public benefit and takes a privacy-by-design approach. In addition, staff members assigned to a project are never able to see all of an individual's information together at any point of the data integration process and data access rights are only provided on a 'needs to know' basis – this is known as the 'separation principle'.¹⁰

5.10 The ABS reports constantly improving its safe data dissemination capabilities. These advances have enabled improved access to data held by the ABS by organisations and researchers for statistical and research purposes while protecting privacy. The committee heard that the Australian Census Longitudinal Dataset has been used by over 8000 registered users without a single data breach.¹¹

Security concerns about data retention

5.11 Concerns were raised that by storing the name and address information—as well as future datasets that are created from the linkage of census information—the ABS is creating a 'honey pot' or target.¹² It was suggested that the nuanced datasets

7 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 13.

8 Australian Bureau of Statistics, *Submission 38*, p. 24.

9 Australian Bureau of Statistics, *Submission 38*, p. 31.

10 Australian Bureau of Statistics, *Submission 38*, p. 31.

11 Australian Bureau of Statistics, *Submission 38*, p. 32.

12 Dr Monique Mann & Dr Matthew Rimmer, *Submission 75*, p. 21; Name withheld, *Submission 45*, p. 2; Name withheld, *Submission 52*, p. 2; Mr Gary Lord, *Submission 27*, p. [1].

resulting from linking census data would be very tempting to criminal organisations and foreign governments, as well as susceptible to misuse by Australian government and security agencies.¹³

5.12 It was pointed out that due to the nature of digital information a single unauthorised disclosure can release huge amounts of information, and once that information is public there is no way to recover it.¹⁴ Furthermore, the longer the information is held the greater the risk of eventual exposure.¹⁵ It was highlighted that if the data is not collected, then it cannot be exposed.¹⁶

5.13 Supporters of the changes to the 2016 census emphasised, however, that the changes do not fundamentally alter the security situation:

That threat is real and is there whether names are retained for 12–18 months or 4 years, and must be countered by appropriate measures. The appropriate response is to take adequate measures to protect data, not to shut down useful and productive applications.¹⁷

5.14 It was argued to the committee that security experts have begun seeing data as a new 'toxic asset' in that it always poses a risk to those who guard it. The easiest way to protect information is not to have that information in the first instance.¹⁸ One submitter related an allegory from a conference on Big Data:

The correct way to think about data collection is to treat it as the digital analogue of nuclear waste: a by-product of useful processes that is very difficult to handle safely.¹⁹

5.15 The committee was provided details of recent unauthorised data releases from a variety of government agencies such as the Department of Immigration and Border Protection, the Bureau of Meteorology, the Department of Human Services, the United States' National Security Agency and the United States Office of Personnel Management, and the United Kingdom's Ministry of Defence, among other private enterprises.²⁰ It was observed:

Many of these organisations have budgets that far exceed that of the ABS, but they couldn't keep the data secure. Many of these leaks were from departments that unlike the ABS would be anticipating cyber-attacks from nation-state actors, but they couldn't keep the data secure. Some of these breaches were rogue employees or contractors. Some were carelessness in

13 Mr John Denham, *Submission 23*, p. [3]; Salinger Privacy, *Submission 24*, p. 11.

14 Mr Adam Gardner, *Submission 4*, p. 3.

15 Salinger Privacy, *Submission 24*, p. 11.

16 Dr Cassandra Cross, *Submission 66*, p.6.

17 Professor Ian Ring, *Submission 9*, p. [2].

18 Australian Privacy Foundation, *Submission 74*, p. 6.

19 Name withheld, *Submission 49*, p. [1].

20 Mr Adam Gardner, *Submission 4*, pp. 2–4; Name withheld, *Submission 18*, p. [4].

disposal of old equipment. Some were misconfigurations. Some we just don't know.²¹

5.16 These examples highlight that even organisations that believe they are doing everything possible to secure their information can be vulnerable to breaches from a variety of vectors.²² It was noted that the ABS itself has reported 14 data breaches since 2013.²³

5.17 In responding to these security concerns, the ABS highlighted the strong institutional framework they have in place to protect personal information. Many people expressed concerns regarding the security of data collected as part of the census. The ABS has, for an organisation of its size and complexity, a very strong track record of treating the information it collects with the utmost of care. The ABS informed the committee that:

The *Census and Statistics Act 1905* secrecy provision requires that all information, including personal information, provided by the ABS remains strictly confidential and is never released in a manner which is likely to enable an individual to be identified. All ABS staff are legally bound never to release identifiable statistical information collected by the ABS to any external individual or organisation – including courts and law enforcement agencies. This is a lifelong obligation which carries heavy penalties for breaches, including fines of up to \$21,600 or imprisonment for up to two years, or both.²⁴

5.18 The Australian Institute of Family Studies explained how the ABS provides data and training to research organisations:

The ABS provides these data in a form that protects the identity of individuals, yet contains sufficient detail to enable research to be undertaken. There are strict protocols about how these data are to be stored, how they can be used, what they may be used for, and who can access these data. The ABS provides training and support to ensure data users have a very thorough understanding of their responsibilities in using Census or other ABS data.²⁵

5.19 The committee heard that the ABS' security policies that restrict access to data are sufficiently robust to frustrate some researchers' work. It was pointed out to the committee that there are regular concerns that the ABS does not have the internal resources to process all the data they acquire, but that outside researchers are limited in accessing that information held by the ABS on security grounds.²⁶

21 Mr Adam Gardner, *Submission 4*, p. 2.

22 Dr Cassandra Cross, *Submission 66*, p. 6.

23 Dr Cassandra Cross, *Submission 66*, p. 7.

24 Australian Bureau of Statistics, *Submission 38*, p. 24.

25 Australian Institute of Family Studies, *Submission 8*, p. 3.

26 Dr Leonard Robert Smith, Visiting Academic, School of Demography, Australian National University, *Committee Hansard*, 25 October 2016, p. 53.

Anonymity and Statistical Linkage Keys

5.20 The committee heard many concerns regarding the use of statistical linkage keys (SLKs) which serve as unique identifiers for projects allowing the ABS to link census information to other datasets. Adding an SLK to each record in each individual dataset allows different datasets to relate to each other so that they can then be brought together into a consolidated, new dataset linked by the unique SLKs.

5.21 Although SLKs appear to provide some level of data security, it was put to the committee that SLKs still contain personal information:

The use of an SLK would appear to bypass the need to use personal information (e.g. Name and Address) as the key to relate two data sets – something that is very problematic when working between two government departments both governed by the Privacy Act.

...

But there are also problems with SLKs – they are not simply 'random identifiers' such as a Tax File Number that have no intrinsic meaning – they *contain embedded fragments of personal information* – and in fact the more personal information they have embedded, the better they perform. An SLK is relatively easy to break – even if it is obscured (or 'hashed') using encryption techniques, it can typically be broken at very modest cost, in hours or even minutes.²⁷

5.22 It was further put to the committee that SLKs are not sufficient to protect privacy:

However SLKs do not offer anonymity. At best, they create a pseudonym...[It] is important to note that SLKs do not offer anonymity, let alone privacy. The very purpose of an SLK is to be able to disambiguate between individuals, and thus to link data between datasets, and draw conclusions about the individuals in those datasets.²⁸

5.23 A number of submissions raised the specific concern that the ABS would use an algorithm called SLK581 to anonymise records for use in statistical linkages.²⁹ SLK581 uses a person's name, date of birth and gender to create an identifier. It has been shown that SLK581 does not provide robust anonymity, and is simple to reverse engineer.³⁰ The ABS has confirmed that it does *not* intend to use SLK581 to create statistical linkage keys.³¹

27 Name withheld, *Submission 42*, p. [8].

28 Salinger Privacy, *Submission 24*, p. 7.

29 Salinger Privacy, *Submission 24*, p. 8; Australian Privacy Foundation, *Submission 74*, pp. 1, 8; Name withheld, *Submission 7*, p. 8.

30 Castan Centre for Human Rights Law, Monash University, *Submission 48*, p. [4].

31 Australian Bureau of Statistics, *Submission 38*, p. 81.

5.24 The ABS explained that 'names would be used to generate anonymised versions of names to use as linkage keys in statistical and research projects'.³² Some submissions pointed out that that ABS has not explained how they intended to generate these 'anonymised versions' of names.³³ The ABS' submission reports that they are working with international experts to arrive at the optimal solution:

The ABS will use a cryptographic hash function to anonymise name information prior to use in data linkage projects. This function converts a name into an unrecognisable value in a way that is not reversible. There are a number of cryptographic methods that could be used, and the ABS is currently in discussions with international experts in cryptography to determine the most appropriate cryptographic method ahead of the 2016 Census Data Enhancement program commencing in mid-2017.³⁴

Statistical linkage keys as unique digital identifiers

5.25 Concerns were raised that SLKs will be used as a way of creating a unified national dataset of personal information.³⁵ The APF labelled this prospect as the 'Australian Card for big data by digital stealth'.³⁶ The APF argues in its submission that:

In the past Australians comprehensively rejected the introduction of the Australia Card. The ABS is using and promoting the SLK, and has the most comprehensive store of data on Australians. The extended use of the SLK is in fact a form of digital 'Australia Card', and one which has new dangers in the context of 'Big Data'.³⁷

5.26 The ABS emphasised that it is not creating 'permanent virtual identifiers' that are comparable to a unique identifier for everyone in Australia. Each data linking project will use its own set of SLK, as explained by the ABS:

The ABS will be creating anonymised linkage keys on a project-by-project basis to allow Census data to be anonymously and safely connected with other existing datasets by the ABS.³⁸

5.27 The ABS further confirmed:

This anonymised version of name will be used with other linkage variables to produce an anonymised linkage keys. Anonymised linkage keys will

32 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, p. 12.

33 Salinger Privacy, *Submission 24*, p. 7; Name withheld, *Submission 42*, p. [8]; Mr Bill McLennan, *Submission 37*, p. [10].

34 Australian Bureau of Statistics, *Submission 38*, p. 81.

35 Mr Stephen Howell, *Submission 78*, p. 2; Ms Rosie Williams, *Submission 85*, p. [4].

36 Australian Privacy Foundation, *Submission 74*, p. 4.

37 Australian Privacy Foundation, *Submission 74*, p. 5.

38 Australian Bureau of Statistics, *Submission 38*, p. 118.

therefore vary from project to project depending on the characteristics of the datasets to be linked and the variables in those datasets that are available for linkage.³⁹

5.28 The 2005 PIA prepared for the 2006 census noted that the privacy risk does not come from creating identifiers, but 'from the creation of the linked unit records, independently of any administrative record number'.⁴⁰ The report goes on to note that there is nothing to prevent a third-party creating their own identifier keys if they were able to obtain the data, potentially recreating individual records.⁴¹

Risk of re-identification from linked datasets

5.29 A number of submissions raised concerns with the potential for datasets created out of the census data being re-identified; that is, individual records from a dataset being directly linked to an individual in the community.⁴²

5.30 Improvements in technology and digital archiving have been one of the key driving forces behind statistical linkages and data retention. While improvements in this field have opened up new avenues of research and knowledge, improved computing power can also increase the ability of an adversary re-identifying a dataset. Digital Rights Watch (DRW) argued that constant vigilance is required to ensure security is maintained:

Updates and developments of technology used to anonymise and store data should be subject to rigorous analysis as to their fitness for purpose. This process should include documented testing, bug bounties and de-anonymisation efforts to demonstrate the veracity of the ABS's claims with some confidence. Best practice will involve taking steps to determine the level of risk of re-identification. This includes an assessment which takes into account the content and value of the original data and the availability of other data that can be linked to this.⁴³

5.31 The APF argued that re-identification of anonymised datasets is always a risk, and that the only way to guarantee that re-identification cannot be completed is to not store personal information:

39 Australian Bureau of Statistics, *Submission 38*, p. 81.

40 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed: 10 October 2016), p. 31.

41 Pacific Privacy Consulting for the Australian Bureau of Statistics, *Census Enhancement PIA Report*, 17 June 2005, [http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/\\$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf](http://www.abs.gov.au/websitedbs/D3110124.NSF/f5c7b8fb229cf017ca256973001fecec/fa7fd3e58e5cb46bca2571ee00190475/$FILE/ATT1UQCI/Privacy%20Impact%20Assessment%20report_1.pdf) (accessed: 10 October 2016), p. 39.

42 Name withheld, *Submission 49*, p. [2].

43 Digital Rights Watch, *Submission 51*, p. 5.

In terms of the linkage keys, the issue is that re-identification is a real and pressing problem...So the only way to properly protect people from being re-identified with personal information is to not have that personal information, like names, in there in the first place. That really is the bottom line. If you want to protect Australians from being re-identified through unique identifier keys, it absolutely has to not include sensitive personal identification.⁴⁴

5.32 DRW argued that an appropriate test of whether a dataset is adequately de-identified is the motivated intruder test: whether a reasonably competent motivated person with no specialty skills could succeed in re-identifying the data.⁴⁵

5.33 Salinger Privacy pointed out that statistical disclosure risk—where re-identification is achieved through identifying anonymised records using known information—would increase along with the size and complexity of datasets.⁴⁶ The more granular the image, the greater the risk that someone can identify an individual.

5.34 It was pointed out to the committee that there have been examples since the 2016 census of Australian Government agencies releasing datasets that were supposedly de-identified being re-identified. The Department of Health and the Australian Public Service Commission both released datasets that were later able to be re-identified.⁴⁷

5.35 The ABS assured the committee that no information will be released in a way that can be re-identified:

Under the Census and Statistics Act 1905, the ABS cannot and will not release information in a manner that would enable an individual to be identified. The ABS has built up considerable methodological expertise and capability to meet this requirement and manage the safe dissemination of statistical information.

A range of procedures and techniques are used to ensure an individuals' identity is protected, including removing identifiable information such as name and address; by controlling and limiting the amount of detail available in datasets released to researchers; by slightly modifying or deleting data from datasets released to researchers where that data may enable identification of individuals or businesses; and by requiring individual researchers and their employing organisations to sign legally enforceable undertakings that restrict how they use the data.⁴⁸

44 Ms Katherine Lane, Vice-Chair, Australian Privacy Foundation, *Committee Hansard*, 25 October 2016, p. 57.

45 Digital Rights Watch, *Submission 51*, pp. 5–6.

46 Salinger Privacy, *Submission 24.1*, p. 8.

47 Salinger Privacy, *Submission 24.1*, p. 7.

48 Australian Bureau of Statistics, *Submission 38*, p. 118.

5.36 Seemingly in response to the aforementioned recent re-identified data releases by government agencies, the Turnbull Government has proposed introducing legislation that would make it a crime to re-identify data that has been de-identified:

...[With] advances of technology, methods that were sufficient to de-identify data in the past may become susceptible to re-identification in the future.

The amendment to the Privacy Act will create a new criminal offence of re-identifying de-identified government data. It will also be an offence to counsel, procure, facilitate, or encourage anyone to do this, and to publish or communicate any re-identified dataset.⁴⁹

Mandatory reporting of unauthorised disclosures

5.37 It was suggested to the committee that the ABS should institute a mandatory reporting requirement to ensure that in the case of a data breach involving census data all affected individuals would be notified.⁵⁰

5.38 The committee heard that Australia does not currently have any mandatory data breach notification reporting laws. As was explained in one submission:

In practice, this means that any organisation who is aware that their system has been compromised in some way (by external or internal factors) is not required to notify affected individuals about the extent of the compromise and what, if any, of their personal data has been exposed.⁵¹

5.39 Notifying affected individuals of the exposure of their information would allow them to take pre-emptive measures to defend against identity theft and misuse of their personal information.⁵² The APF suggested that 'mandatory data breach notification laws, creating enforceable rights for individuals' could help restore trust in the ABS.⁵³

5.40 The PIA which prepared the ground for the decision to retain name and address information considered how the ABS should respond to data breaches. These risk management strategies included the notification of affected individuals.⁵⁴

Committee View

5.41 The committee is cognisant that the community wants to know how its information will be protected and used. It notes that no system is entirely secure, to

49 Senator the Hon George Brandis QC, Attorney-General for Australia, 'Amendment to the Privacy Act to further protect de-identified data', *Media release*, 28 September 2016.

50 Digital Rights Watch, *Submission 51*, p. 6.

51 Dr Cassandra Cross, *Submission 66*, p. 9.

52 Dr Cassandra Cross, *Submission 66*, p. 9.

53 Australian Privacy Foundation, *Submission 74*, p. 4.

54 Australian Bureau of Statistics, *Privacy Impact Assessment: Proposal to Retain Name and Address Information from Responses to the 2016 Census of Population and Housing*, December 2015, pp. 21–22.

say otherwise is either disingenuous or ignorant. There will always be a risk that data will be exposed: this could come from carelessness; a disgruntled employee wishing to cause harm; a malicious actor; or a change in the legislation governing the use and release of information. The committee is aware that the Australian Government already maintains a large amount of information on the community necessary to provide essential services. And that this information is secure and is only used for its intended purpose.

5.42 The retention of additional information from the 2016 census in the form of name and address information does represent a small additional risk. Previously name and address information was securely stored by the ABS for the period of census processing, approximately 18 months. From an information security perspective, increasing the time that this information will be held to four years does not seem a fundamental change from previous practice which has shown to be secure. However, the committee notes that ABS has failed in objectively arguing its case to the Australian public.

5.43 The use of statistical linkages to gain greater insights into data, when managed properly, is a powerful tool. Although data linking is not a new concept, the scope of application of data matching across the entire Australian population does represent a significant expansion on previous work. The committee believes that the ABS needs to bring the community along with them in this endeavour by honestly explaining how the process will work, what data will be linked, and why it is important.

5.44 The natural inclination of organisations may be to assure people that their data is safe, and that there is no risk. These guarantees cannot be made. The ABS needs to explain that there is a risk that private information may be released or that a dataset could be re-identified. The committee notes that these risks are small however, in comparison to the improvements in government services and economy wide transitions that can be realised through the judicious application of data linking techniques.

5.45 To build community confidence and buy-in in this initiative, the ABS will have to be open with the community regarding how the data is protected, the way data linkages work, and also inform the community immediately when data has been compromised.

Recommendation 3

5.46 The committee recommends that the ABS publicly commit to reporting any breach of census related data to the Office of the Australian Information Commissioner within one week of becoming aware of the breach.

Chapter 6

The conduct of the 2016 census

6.1 The reference date for the 2016 census was 9 August. On this date, millions of Australian households paused to complete their census forms. Unfortunately, for many people, the evening was one of frustration as the website and phone systems put in place failed.

6.2 This chapter begins with a summary timeline of key events between 9 and 11 August 2016, before going on to discuss the failure of the eCensus website, problems with the telephone service, and the subsequent actions and conduct of census field officers.

Failure of the eCensus

6.3 This section provides a timeline of the events surrounding the failure of the eCensus website, and then considers the causes and response to this event.

9 August

6.4 During the morning of 9 August, the ABS experienced two Distributed Denial of Service (DDoS) attacks resulting in very short outages.¹ During the second attack the 'Island Australia' protocol—IBM's chosen DDoS defence—was enabled. This measure successfully stopped the attack and 'the ABS was of the understanding that the online form would now be protected from any further attacks'.² A third attack in the afternoon was repelled without any loss of service.

6.5 At approximately 7.00 pm, the eCensus website had already successfully processed over 1.8 million household forms and was running at 7 167 forms per minute, with demand growing in accordance with ABS modelling.³ Commencing at 7.28 pm a fourth DDoS attack occurred resulting in the website being unavailable from 7.33 pm.⁴

6.6 At the time of the attack, the ABS and IBM observed a spike in outbound traffic in the IBM monitoring systems, prompting concerns that the system may have been compromised and experiencing data leakage.⁵ IBM reported:

[The] 7.27 pm DDoS attack also caused one of the mechanisms used by IBM to monitor the performance of the eCensus site to miscarry. As a result, some IBM employees who were observing the monitor mistakenly

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- 1 A more fulsome discussion of Island Australia and Distributed Denial of Service attacks are provided later in this chapter.
 - 2 Australian Bureau of Statistics, *Submission 38*, p. 66.
 - 3 Australian Bureau of Statistics, freedom of information disclosure, 25 October 2016, p. 50.
 - 4 Australian Bureau of Statistics, *Submission 38*, p. 66.
 - 5 Australian Bureau of Statistics, *Submission 38*, p. 66.

formed the view that there was a risk that data was being exfiltrated from the website and that the risk needed to be further investigated. Out of an abundance of caution, IBM shut down access to the site and assessed the situation.⁶

6.7 IBM attempted to reboot its system at 7.43 pm but was unable to restore services.⁷ The committee heard that IBM had incorrectly configured at least one of the two routers it had in place.⁸ When the routers were restarted the link to the Telstra network did not load its previous configuration; this left only the third party provider, Nextgen's link in place, and that link was consumed by DDoS traffic.⁹

6.8 At the request of the ABS, IBM enabled 'overload' controls at 8.09 pm which prevented Australian households from commencing new census forms.¹⁰

6.9 The Minister for Small Business, the Hon. Michael McCormack MP, was provided an initial briefing by the Australian Statistician at 8.26 pm.¹¹ At 8:38pm the ABS published a message through social media channels informing people that the census website was experiencing an outage, and at 8.50 pm, the ABS requested Dentsu Mitchell—a consultancy providing advertising for the census—cease all social and digital advertising.¹² The ABS was informed that advertising would cease by approximately 9.40pm.¹³

6.10 IBM was able to successfully restore the online census system at 10.26 pm. At this point the ABS stated that it would have been possible to make the eCensus available to the public again. However, the ABS elected to keep the eCensus system closed until: it had understood the unanticipated spike in outbound traffic earlier in the evening; was sure it could defend against future DDoS attacks; and was sure that the infrastructure was robust including the routers which had experienced issues.¹⁴

6.11 At 10.59 pm, the ABS posted updates to social media stating that the eCensus service would be unavailable for the remainder of the evening, and that an update would be posted in the morning.

6 IBM Australia Limited, *Submission 87*, p. 3.

7 Australian Bureau of Statistics, *Submission 38*, p. 66.

8 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 48.

9 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 16.

10 Australian Bureau of Statistics, *Submission 38*, p. 67.

11 Australian Bureau of Statistics, *Submission 38*, p. 67.

12 Australian Bureau of Statistics, *Submission 38*, p. 67.

13 Australian Bureau of Statistics, *Submission 38*, p. 68.

14 Australian Bureau of Statistics, *Submission 38*, p. 67.

10 August

6.12 It was reported to the committee that in the early hours of the morning, 'the ABS and IBM conclusively determined that both the outage was caused by an overseas-based DDoS attack and that no data was lost'.¹⁵

6.13 The ABS published a statement on 10 August explaining what had occurred the previous day:

The 2016 online Census form was subject to four Denial of Service attacks yesterday of varying nature and severity.

The first three caused minor disruption but more than 2 [million] forms were successfully submitted and safely stored.

After the fourth attack, just after 7.30 pm, the ABS took the precaution of closing down the system to ensure the integrity of the data.¹⁶

11 August

6.14 On the morning of 11 August, the Australian Privacy Commissioner announced that he was 'satisfied that personal information was not inappropriately accessed, lost or mishandled'.¹⁷

6.15 At 1.16 pm, the Australian Signals Directorate (ASD) notified the ABS that IBM 'had taken all steps that could reasonably be taken in the time available to mitigate denial of service attacks similar to those that occurred on 9 August'.¹⁸

6.16 At 2.29 pm on 11 August, the system was reopened to the public.

What was the cause of the outage

6.17 The cause of the suspension of the eCensus website on 9 August was the ABS taking the *deliberate* decision to prevent households from logging onto the website. This decision was precipitated by a DDoS attack that was not adequately protected against, and was of such a small size that it should have easily been handled effectively. As explained by the Special Adviser to the Prime Minister on Cyber Security, Mr Alastair MacGibbon:

There were indeed attacks, they should have been expected, they were expected, protection against them was contracted for—and these were definitely small attacks and they should not have degraded the ABS system. But it was not the denial-of-service attacks that actually eventually took the ABS e-census website offline. That was a decision made by the ABS, and there were two other critical components in there. The denial-of-service attacks that degraded the system, the attempts by IBM in turning the routers off to re-communicate with their data centre—finding that they had

15 Australian Bureau of Statistics, *Submission 38*, p. 68.

16 David W Kalisch, Australian Bureau of Statistics, 'ABS update – 2016 Census online form', *Media Release*, 10 August 2016.

17 Australian Bureau of Statistics, *Submission 38*, p. 69.

18 Australian Bureau of Statistics, *Submission 38*, p. 69.

misconfigured the router at the Telstra end of the link—and then, in a sense, the final straw that broke the camel's back was the misinterpretation of data on a load-monitoring system, which was interpreted at first as possibly the exfiltration of data—or, an actual hack, as opposed to an attack.¹⁹

6.18 The influx of traffic to the IBM routers appear to have caused a malfunction within the internal monitoring of the IBM system:

During the fourth attack, a system monitoring dashboard, which included a graph of inbound and outbound [Internet Service Provider] traffic to the eCensus site, showed what appeared to be a spike in outbound traffic. This caused some IBM employees to, it is now accepted mistakenly, form the view that there was a risk of data egress from the eCensus site. In fact there was no data egress and the spike was a 'false positive'.²⁰

6.19 Due to fear that a recorded spike in outbound data traffic from the eCensus system represented a potential data leak, the ABS decided to temporarily close access to the website.²¹

What is a DDoS

6.20 IBM provided the committee with an explanation of how DDoS attacks operate:

A denial of service attack is a malicious attempt to make a system unavailable to its intended audience by overloading servers with requests to render it unavailable or causing it to shut down.

A denial of service attack is typically accomplished by flooding the targeted machine or resource with superfluous requests in an attempt to overload systems and prevent some or all legitimate requests from being fulfilled.

A 'distributed' denial of service or DDoS attack occurs where the attack source has multiple unique IP addresses or 'nodes'. It is typically achieved by using a 'botnet', being a group of internet-connected devices on which malware has been installed so as to enable the devices to be controlled from a remote location without the knowledge of the devices' owners. A DDoS attack may be regarded as analogous to a group of people crowding the entry door to a business and not allowing legitimate customers to enter, thus disrupting the business' normal operations.

The effects of denial of service attacks include slower network performance (opening files or accessing websites), or the unavailability of a particular website, or an inability to access any website. Denial of service attacks are therefore directed towards the performance or availability of a website.²²

19 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 44.

20 IBM Australia Limited, *Submission 87*, p. 16.

21 Special Adviser to the Prime Minister on Cyber Security, *Submission 31*, p. 2.

22 IBM Australia Limited, *Submission 87*, p. 13.

6.21 DDoS attacks are neither new nor unusual. The committee heard that it is commonplace for government websites to regularly experience denial of service attacks which are routinely managed without interruption to services.²³

6.22 It is unclear if the eCensus website experienced further DDoS attack attempts following restoration of the system. IBM informed the committee that there were further DDoS attacks which were successfully defended.²⁴ In contrast, the ABS claimed to be unaware of any further attacks.²⁵ The perpetrators of the DDoS attack remain unknown.²⁶

What plans were put in place to prevent DDoS

6.23 The ABS was aware of the threats posed by a prospective DDoS and had contracted for measures to be put in place to mitigate them. The committee heard that DDoS events are routine occurrences, and are also routinely managed without incident:

Denial-of-service attacks, or distributed denial of service attacks, are eminently predictable and should be expected. In fact, the Australian Bureau of Statistics did call for denial-of-service protection in its tender process with IBM, and IBM responded to say that they would put in place denial-of-service protection. So yes, it is expected, and it should be dealt with.

...

There were indeed attacks, they should have been expected, they were expected, protection against them was contracted for—and these were definitely small attacks and they should not have degraded the ABS system.²⁷

6.24 The risks of DDoS attacks were included in the risk management plan for the 2016 census, with the ABS reporting:

In the final risk management plan (July 2016), one of the risks was 'Loss of system availability through a Distributed Denial of Service Attack'. This risk had pre-mitigated exposure rating of 'high' and a residual exposure of 'medium'. Under the plan, IBM was responsible for mitigating this risk, with ISP measures of Island Australia (geoblocking international traffic) a key measure.²⁸

23 Special Adviser to the Prime Minister on Cyber Security, *Submission 31*, p. 2.

24 IBM Australia Limited, *Submission 87*, p. 4; Mr Kerry Purcell, Managing Director, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 12.

25 Mr Jonathan Palmer, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 32.

26 Special Adviser to the Prime Minister on Cyber Security, *Submission 31*, p. 2.

27 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 44.

28 Australian Bureau of Statistics, *Submission 38*, p. 62.

6.25 IBM states that it met its requirement to provide DDoS protection through the 'Island Australia' policy.²⁹ IBM explained how this mitigation strategy would work:

The protocol was an ISP-based DDoS attack mitigation strategy which required the ISPs who provide access to the eCensus site to block or divert all international traffic to the site at the direction of IBM. Such blocking is known as 'geo-blocking'. The protocol was to be deployed in the event that a DDoS attack occurred.

The Island Australia protocol, while not a form of protection that is appropriate for websites with users who are widely distributed, was well-adapted to the 2016 eCensus because it took advantage of the fact that the Census form was required to be completed (during the Census period) only by persons who, on the Census Day, were physically present in Australia. Accordingly, with some exceptions, legitimate traffic to the eCensus site could be expected to be domestic to Australia.³⁰

6.26 IBM tested the Island Australia protocol on 5 August 2016 and reported to the ABS that it had 'worked exactly as expected'.³¹ IBM reported that the success of this test gave them a high level of confidence that appropriate DDoS mitigation measures were in place:

IBM considers that, following the testing on 5 August 2016, it had every reason to think that Island Australia would provide effective protection against DDoS attacks if needed.³²

6.27 While preparing for the eCensus, IBM 'considered other possible options for the defence of DDoS attacks'.³³ IBM examined other products offered for DDoS protection yet concluded that these services would not be suitable for the 2016 eCensus 'because of the unique traffic profile it was expected to generate'.³⁴

6.28 In July 2016, the ABS and IBM received a briefing from ASD on cyber threats and incident response support. The ABS recalls:

The potential for DDoS attacks was discussed, as were general mitigations for a range of threats. ABS does not believe that any new areas of concern were raised, nor were there any suggestions of potential mitigations or additional preparations that were not pursued.³⁵

The failure of Island Australia

29 IBM Australia Limited, *Submission 87*, p. 2.

30 IBM Australia Limited, *Submission 87*, pp. 13–14.

31 Australian Bureau of Statistics, *Submission 38*, p. 62.

32 IBM Australia Limited, *Submission 87*, p. 15.

33 IBM Australia Limited, *Submission 87*, p. 15.

34 IBM Australia Limited, *Submission 87*, p. 15.

35 Australian Bureau of Statistics, *Submission 38*, p. 62.

6.29 IBM anticipated, and assured the ABS, that Island Australia would prevent international traffic from reaching the eCensus website, thereby ensuring that international traffic could not be used for a DDoS attack.

6.30 The internet is a network of networks, and in order to allow public access to a webpage, a company like IBM must pair with internet service providers (ISPs) to link the IBM network to the rest of the internet. Public access to the eCensus site was provided via two ISP links, one provided by Telstra Limited (Telstra) and the other by Nextgen Networks Pty Ltd (Nextgen).³⁶ If a serious DDoS attack occurred during the census collection period, IBM would direct Nextgen and Telstra to put in place Island Australia.³⁷ These ISPs would prevent the malicious traffic from reaching the IBM network processing the census data.

6.31 When a household attempted to fill in the eCensus the message needs to move from their home to the final destination; which in this case is IBM. In order for this to be possible, there needs to be a path along the networks of the internet from an origin and the destination. Suppose Alice wants to complete her eCensus. Alice's personal computer (A) would speak to her router (B), which would send a message to a router (C) operated by her internet service provider. That router (C) would try and pass the message to a router (D) owned by—in this case—either Telstra or Nextgen which have a direct link to the destination—IBM. If no such router can be found, it (C) would pass the message onto another network's router (E) which would attempt to pass the message onto a router (D) on the desired network. Once the message finds the correct network, the message will be delivered to IBM.

6.32 Under the Island Australia protocol, if any of the routers belonging to Telstra or Nextgen received a message that was addressed to the eCensus and sent from an international router (ISP), that message would not be processed.

6.33 Commencing at 7.28 pm, a DDoS attack began eroding the capacity of the system. The size of the attack was estimated to be around 1.5 gigabits per second.³⁸ The attack reportedly had the effect of commencing new sessions which quickly exhausted the memory capacity of the IBM's router facing the Nextgen link.³⁹ Mr MacGibbon noted that this attack was a '...weapon but a small one and one that we should have had protections against, absolutely' and '[it] certainly should not have caused the damage that it did'.⁴⁰

6.34 IBM alleges in its submission that Nextgen failed to properly implement the Island Australia protocol which allowed traffic to flood the IBM system:

36 IBM Australia Limited, *Submission 87*, p. 14.

37 IBM Australia Limited, *Submission 87*, p. 2.

38 Australian Bureau of Statistics, answers to questions on notice, 21 September 2016, p. 6.

39 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 23.

40 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 48.

IBM was informed—later that day after the attack had passed—that a Singapore link operated by one of Nextgen's upstream suppliers (Vocus Communications or Vocus) had not been closed off and this was the route through which the attack traffic had entered the Nextgen link to the eCensus site.⁴¹

6.35 IBM contends that had Nextgen properly implemented Island Australia the eCensus website may not have become unavailable:

Had Nextgen (and through it Vocus) properly implemented Island Australia, it would have been effective to prevent this DDoS attack and the effects it had on the eCensus site. As a result, the eCensus site would not have become unavailable to the public during the peak period on 9 August 2016.⁴²

6.36 Nextgen disputed this allegation, noting that they had implemented the same settings as IBM had successfully tested on 5 August 2016, and that their analysis demonstrated that both the Telstra and Nextgen links showed DDoS traffic during the fourth attack.⁴³

6.37 Vocus Communications⁴⁴ (Vocus) informed the committee that it recorded a peak traffic load through the Singapore link of 563Mbps. Vocus' submission states that this 'is not considered significant in the industry' and 'not of a size to cause the census website to become unresponsive, had appropriate network security measures been implemented by IBM'.⁴⁵

6.38 As previously discussed, IBM had two routers in place to facilitate Australians filling in their eCensus forms. Each router alone had sufficient capacity to transfer all of the anticipated legitimate census traffic. Representatives of the ABS, in a foray into biology, explained:

At this point we knew we could operate with one router. We knew the system was designed to have sufficient capacity...I would say it is a bit like functioning on one kidney, but you do not really want to when you have two.⁴⁶

6.39 Even though IBM reports that all of the DDoS traffic was coming through the Nextgen link, both routers appeared to be experiencing an unusually heavy load.

6.40 This heavy load adversely affected IBM's internal system monitoring the flows of data in and out of the network, eventually resulting in erroneous telemetry

41 IBM Australia Limited, *Submission 87*, p. 3.

42 IBM Australia Limited, *Submission 87*, p. 3.

43 Nextgen Networks, *Submission 88*, p. 1.

44 Following the 2016 Census, Vocus Communications acquired Nextgen.

45 Vocus Communications, *Submission 89*, p. [2].

46 Mr Jonathan Palmer, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 33.

from automated monitoring systems that would lead to the eCensus website being disabled. As IBM explains:

IBM's investigations have revealed that the false positive reading occurred because the system was programmed to measure and report the traffic volume of the eCensus site at 60 second intervals. Once the fourth DDoS attack was underway, the information was being reported for varying intervals but the dashboard was treating the information as though it had applied the standard 60 second interval. This resulted in an incorrect graphic creating the impression that there had been a spike of outbound traffic that could be data egress.⁴⁷

6.41 This spike was what led IBM and the ABS to fear census data was being exfiltrated from the system. It has been suggested that the elevated data flow was IBM's computer system reporting performance information and logs to an offshore data centre.⁴⁸

6.42 The DDoS attack had the effect of consuming the memory of the routers meaning they were unable to properly process requests. In order to restore the system to functionality, IBM reset the routers. When they did this, the router on the Telstra link did not restore its settings, meaning that the only link to the eCensus website was the Nextgen link which was subject to the DDoS attack.⁴⁹ Mr MacGibbon explained the problem on IBM's Telstra router:

I think the biggest issue was that the router that was at the Telstra link was incorrectly coded by IBM, so when it was turned off the coding fell out, for want of a better description, from that router and it made it a 'dumb unit'. The time it then took to get it back up to scratch is where the confusion happened.⁵⁰

6.43 IBM reports that it took one hour and twenty minutes to restore the Telstra link. Once the Telstra link was restored IBM reports closing the Nextgen link. IBM states that at this point there was an immediate drop in attack traffic and a resumption of normal application behaviour.⁵¹ IBM reports that it was ready to restore the eCensus at 10.32 pm, approximately three hours after the site had become unresponsive.⁵²

6.44 In summary, a DDoS attack adversely affected the operation of the routers' reporting system. When this reporting system displayed several minutes' of data at

47 IBM Australia Limited, *Submission 87*, pp. 19–20.

48 Dr Robert Merkel, *Submission 1*, p. 12.

49 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 17.

50 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 48.

51 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 17.

52 IBM Australia Limited, *Submission 87*, p. 4.

once—rather than the typical 60 second increment—it ignited fears that the system had been compromised. Further, IBM were unable to effectively reset their router to the Telstra network due to configuration errors. These two events, precipitated by the DDoS, led the ABS to take the decision to take the eCensus website offline. The combination of the three events ultimately led to the eCensus being unavailable. Mr MacGibbon observed:

Anyone of those three things not existing—if there were no denial-of-service attacks or if they were properly mitigated—we would not have had the other two problems. If we had had the unmitigated denial-of-service attacks but the router had functioned properly, we would not have had the third problem, and we would not have had the third problem if the people that were monitoring the system properly interpreted the system, which was functioning oddly given the nature of the stresses that it was under, based on the first two points. So any one of those in isolation was not really sufficient to lead us to this committee today, some months later. It was the three combined that led us here.⁵³

6.45 The natural question this raises is was the preparation and protection by IBM and ABS sufficient?

Were the protections put in place by IBM sufficient?

6.46 The events of the evening of 9 August would imply that mistakes were made in the preparation and execution of the DDoS defence. The IBM submission argues that Island Australia was approved by the ABS as a means of defending against DDoS attacks.⁵⁴ It appears that IBM and the ABS were in agreement that any botnet⁵⁵ in Australia was of insufficient size to cause serious damage to the eCensus website, and therefore geoblocking would be sufficient.⁵⁶

6.47 However, Island Australia geoblocking was not the only option available to IBM in meeting its contractual obligations in ensuring resilience in the face of DDoS attacks. This report has already canvassed why Island Australia was thought by IBM to be sufficient.

6.48 It was put to the committee that Nextgen had raised concerns with IBM that the Internet Protocol (IP) ranges that IBM planned to block were not exhaustive, and that Island Australia may not adequately protect the eCensus.⁵⁷

6.49 The committee heard that Nextgen offered IBM DDoS protection which was rejected by IBM.⁵⁸ IBM claimed that the Nextgen solution was not fit for purpose:

53 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 49.

54 IBM Australia Limited, *Submission 87*, p. 14.

55 A collection of network connected computers controlled from one or more central controllers. Botnets can be used to perform DDoS attacks by directing the individual bots to flood the desired websites with requests.

56 IBM Australia Limited, *Submission 87*, p. 14.

57 Nextgen Networks, *Submission 88*, p. 2.

We looked at and considered the DDoS protection that was being offered by Nextgen and, on the basis of the information that they provided, there were three distinct attributes that we felt rendered it unsuitable. The first concern was that Nextgen advised us that it required a four-week training period to learn the particular traffic patterns that would be coming into the site. We did not have a four-week lead-in period during which to learn the traffic patterns. And the traffic pattern in the weeks leading up to census night is not at all representative of what we experience on the night.

The second concern, which we discussed with Nextgen in advance of the RFT response being submitted in 2014, was the ability of their solution to deal with that very high peak we experience on census night and whether it in fact might be interpreted as a DDoS attack, and that they share that concern with us. The third was one related to the specifics of the application and the way we were doing load balancing to distribute the load across multiple back-end process streams. There was a concern early on in the process that the Nextgen protection approach might interfere with that load-balancing mechanism. So for those three reasons we felt that the geoblocking was a very well adapted solution for the particular characteristics of the traffic, and it is one which we had experience of in 2011, with both Telstra and Optus, that they could very effectively and easily implement, so we chose that as our preferred strategy.⁵⁹

6.50 Evidence received by the committee indicates that the Nextgen solution was adopted after the resumption of the eCensus, casting doubt on explanations of why it would have been unsuitable before 9 August made by IBM.⁶⁰ IBM claims that the adoption of the Nextgen DDoS products following the resumption of the eCensus was in response to a changed threat environment where it had become public knowledge how the eCensus was being defended.⁶¹

6.51 The choice of geoblocking as the sole means of DDoS protection is interesting given a number of technical considerations related to the eCensus:

There were some technical problems in that some Australians, with Australian-based ISPs, will also route in from overseas, just by the nature of the ways in which those ISPs operate. In fact, the password reset facility that IBM used actually relied on traffic coming in from overseas to give Australians that password. So there was a fundamental failure in the logic of an Island Australia. I could see it as part of a series of protections adding some value, but to rely solely on it clearly was a failure.⁶²

58 Nextgen Networks, *Submission 88*, p. 1.

59 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 24.

60 Nextgen Networks, *Submission 88*, pp. 2–3.

61 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 24.

62 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 45.

6.52 Given that the eCensus system itself relied on communications from outside Australia, the proposal to protect the application by blocking this traffic appears curious.

6.53 It was pointed out to the committee that there was sufficient redundancy built into the system by having two ISP links. Had the Telstra router been properly configured such that when it was restarted it worked properly, the problems experienced on 9 August would likely have been avoided.⁶³

6.54 IBM admitted that, in hindsight, further testing of the router would have uncovered the configuration error before it become an issue on census night:

But we tested that router failure by simulating it, which is relatively easy to do in a repeatable fashion. If we had our time again, we would probably do a hard, powered-off powered-on test of that router. That would have discovered earlier that we had that reboot and configuration loading problem.⁶⁴

6.55 There appeared to be some confusion on census night regarding what had actually happened with the router, with the ABS being initially under the impression that the router on IBM's Telstra link had suffered from a hardware failure.⁶⁵

6.56 Mr MacGibbon highlighted that the greatest failure on the part of IBM was that they did not check that Island Australia had been properly implemented by its subcontractors.⁶⁶ IBM informed the committee that, with hindsight, they would have sought greater certainty that their geoblocking protocols had been correctly implemented by their contractors.⁶⁷

6.57 IBM claims that they assumed that all of their contractors had the ability to implement their instructions:

We as the prime contractor dealt with both Telstra and Nextgen as our ISPs and expected them, as large internet service providers, to be able to implement those instructions correctly.⁶⁸

63 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 49.

64 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 19.

65 Mr Jonathan Palmer, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 32.

66 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 45.

67 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 19.

68 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 19.

6.58 The committee is not in a position to determine the relative truth of where any fault lies between IBM and its contractors. Mr MacGibbon explained the situation between the parties nicely:

The Commonwealth, in this instance, was the customer. The customer went to a builder to build a house. There were blueprints put before them as to what that house would look like, and the Commonwealth, as the customer, paid money to the builder to build the house. The builder is now in dispute with a plumber and a bricklayer about what was or was not done in relation to the deficient house. IBM, of course, being the builder and Vocus and Nextgen, when you look at their responses, being the plumber and the bricklayer...I cannot determine who is right and who is wrong. What I will say is that as the customer the Commonwealth was not well served.⁶⁹

6.59 Extending on this example, the taxpayer has bought a house off the plan with a sinking foundation and cracks in the walls: they can feel rightly aggrieved.

Did the ABS have too much trust in IBM?

6.60 The ABS had contracted IBM to provide DDoS prevention measures, and IBM assured the ABS that this was done.⁷⁰ The ABS can rightly say that they expected the eCensus to be secure and stable in the face of threats:

Senator HUME: Were you surprised by the extent of the disruption caused by the DDoS events considering on a relative basis they did not seem to be particularly large?

Mr Kalisch: We were certainly surprised that the system was vulnerable.

Senator HUME: And you were assured, I assume, beforehand; otherwise, you were assured that it was invulnerable?

Mr Kalisch: We were assured that that system was robust and was ready to go to a range of different attacks and mechanisms, not just DDoS.⁷¹

6.61 It was suggested to the committee that the ABS showed too much trust in IBM and was not sufficiently proactive in ensuring that IBM was meeting their contractual obligations:

In many respects, while I will say to you that this was a failure to deliver on the contractual obligations that IBM had, there was a failure on the part of the ABS to sufficiently check that the contract had been delivered. That could have been achieved through more thorough assessments of the work done for them by IBM and their subcontractors.⁷²

69 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 47.

70 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 44.

71 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 32.

72 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 45.

6.62 Mr MacGibbon suggested further that the ABS could have been more proactive in overseeing the implementation of the eCensus project to ensure that all contractual undertakings were being fulfilled:

If I understand your question correctly, if they had engaged IBM, could they have verified that they were building the system that they were contracted to do? Yes, they could have. They could have had more third-party testing done. They may have asked more questions of IBM to provide proof that they were delivering the services they were contracted to do.⁷³

6.63 The committee heard that the close relationship between the ABS and IBM could be interpreted as 'vendor lock-in', and that such relationships risk complacency in project management:

Mr MacGibbon: ...In relation to whether IBM was the natural choice—and I did hear the questions from the committee earlier—I do believe there was a degree of vendor lock in—that they were a trusted partner that had established a relationship over many years and were seen as the natural choice by the ABS to deliver upon the project. Whether that is right or wrong is really for others to decide. But certainly I came to the conclusion that there was a degree of vendor lock in there.

CHAIR: There are risks associated with that type of closeness of relationship.

Mr MacGibbon: I would not be here in front of you today if those risks were not real.⁷⁴

6.64 This view is supported by the findings of the CapDA report—commissioned by the ABS to consider options in delivering the eCensus system—which reported that some prospective solution vendors believed that the ABS would not move away from IBM:

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.⁷⁵

6.65 One of the reasons cited by the ABS for partnering with IBM was their previous experience working with ABS systems and on the Censuses. As explained to the committee, the ABS assumed that IBM were familiar with their requirements:

There was considerable clarity as to our requirements and their contractual obligations to meet those. We were building on our experience with two prior censuses, so they [IBM] had an excellent understanding of what we

73 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 46.

74 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 46.

75 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 35.

needed. So I do not think that there was any lack of understanding leading up to the census.⁷⁶

6.66 This assumed familiarity may have contributed to a level of complacency in project management on the part of the ABS, and in the priority which IBM gave the project. The ABS could have been more proactive in ensuring DDoS protection was in place. Whereas the ABS contracted third parties to undertake load testing and code reviews, IBM was left to test their own DDoS prevention solution. It was suggested that an external party might have uncovered the hole in Island Australia that was not revealed through IBM's internal testing.⁷⁷ It has not been explained to the committee why IBM's testing showed Island Australia to be effective on 5 August, but was later to fail on 9 August.

6.67 The committee heard that the ABS did not undertake an Information Security Registered Assessors Program (IRAP) assessment. An IRAP assessment assesses the implementation, appropriateness and effectiveness of an information security system's security controls.⁷⁸ As explained by Alastair MacGibbon:

The IRAP process is a process designed for third parties that are certified by or accredited by the ASD to come in and look at the architecture of systems—the schematics, for want of a better description—to ensure that they meet the information security requirements of the Commonwealth depending upon the level of security and protection needed in those systems. I would describe it as a compliance assurance process that should not be relied upon for all of IT security but is a practice that is necessary for ensuring that systems at least meet certain standards.⁷⁹

6.68 The committee was further informed that it is not possible to know whether an IRAP assessment would have uncovered the flaws that allowed the DDoS attack to affect the eCensus.⁸⁰

6.69 The relevant consideration here is whether the ABS should have had taken a more proactive oversight role in relation to the eCensus, and also whether they had the capacity to do so. CapDA's report that recommended the ABS partner with IBM was, in part, premised on the fact that ABS lacked the internal capacity to deliver the eCensus without outside assistance:

76 Mr Jonathan Palmer, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 34.

77 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, pp. 45–6.

78 Department of Defence, *What is an IRAP Assessment?*, http://www.asd.gov.au/infosec/irap/irap_assessments.htm (accessed: 1 November 2016).

79 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 49.

80 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 49.

CapDA's report, as you are aware, noted that we did not have sufficient in-house capacity to run that application ourselves and that we would need to look at procuring an external partner to host that application.⁸¹

6.70 CapDA's report highlights the professionalism and dedication of the staff at the ABS, but in the end recommends that the ABS did not have the internal capacity to develop and deploy an eCensus.⁸² If they did not have the ability to develop a solution themselves, it stands to reason that they would only have a limited capacity to question and challenge a contractor employed to develop such a solution.

Why did it take so long for the eCensus to resume

6.71 The eCensus website was offline for over 40 hours; from around 8.00 pm on 9 August to approximately 2.30 pm on 11 August.⁸³ The committee heard that IBM was ready to resume collecting eCensus forms on the night of 9 August, but that the ABS wanted to ensure that the security of the eCensus application before proceeding further:

As the protection of personal information was paramount for all concerned on census day, a cautious approach was taken by IBM, the ABS and ASD to ensure and verify that data security was never compromised before the site was restored. IBM was ready to restore the eCensus site after three hours, around 10.30 pm, but its closure was extended by 40 hours, following a direction given to IBM by the ABS.⁸⁴

6.72 The committee heard that the ABS wanted to ensure that the eCensus website was no longer vulnerable to further DDoS attacks, that additional backups were in place, and that no data had been compromised before reopening the eCensus website. As the Australian Statistician explained:

There were three particular aspects that we wanted to be satisfied about. One was about the security of the data which, as we say, was something that we were assured of after three am the next morning. The second aspect was really related to the nature of the router and that there was a working contingency, and that was something that was still the subject of some discussion on the following morning and through the following day. The third aspect was that—certainly against the backdrop of the system being vulnerable to a DDoS event on the night before—I wanted to be as sure as we could be that it would not be vulnerable to a second DDoS event. And so that was where there was further engagement with ASD—and Telstra

81 Mr Trevor Sutton, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 35.

82 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), p. 7.

83 Australian Bureau of Statistics, *Submission 38*, pp. 67–9.

84 Mr Kerry Purcell, Managing Director, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 12.

certainly assisted in that process as well—making sure that there were a number of additional protections put in place.⁸⁵

6.73 Mr MacGibbon expressed his support for ABS' approach in delaying the resumption of the eCensus until satisfied that all faults had been rectified, observing:

There would only be one thing worse than the site being taken down that evening after those four denial of service attacks, and then the confusion around the router and the outbound traffic, and that was to get the site back up and have it knocked back down again.⁸⁶

6.74 Once the ABS was satisfied that the system was secure and robust, the Australian Statistician ordered that the eCensus website be reopened; the eCensus was back online at approximately 2.30 pm on 11 August.

Was any personal data at risk?

6.75 The eCensus website was shut down due to fears that personal information might be compromised. As discussed above, at around 7.30 pm there was an observed elevation of outgoing data from the eCensus website. Fears that this traffic representing personal data led to the website being shut down.

6.76 The system developed by IBM for the 2016 eCensus employed a range of measures to prevent any loss of data.⁸⁷ IBM explained to the committee that:

In terms of the primary security objective here of protecting respondent data, we had encryption mechanisms in place to ensure that the data was fully encrypted while it was in transit—in flight from the respondent to the census site—and that it was encrypted while at rest and stored within the backend of databases. IBM does not have the keys to be able to decrypt that data, so we have not and have never been at any point able to see any of the respondent data that is stored on our systems. So encryption is the primary mechanism that ensures the integrity and protection of the data from external inspection.⁸⁸

6.77 These keys are in the possession of the ABS and are necessary to extract any meaningful data from the census forms.⁸⁹

6.78 The ABS reported to the committee that they were confident that eCensus data had been secure at all times:

I have to say I was confident all along that there was no breach, because of the nature of the security architecture. We had end-to-end encryption; we

85 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 31.

86 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 47.

87 IBM Australia Limited, *Submission 87*, p. 19.

88 Mr Michael Shallcross, Distinguished Engineer for Global Technology Services, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, p. 21.

89 IBM Australia Limited, *Submission 87*, p. 19.

had had the architecture well reviewed. So the problem was that we could not explain this—as it turned out—false positive alert, and IBM could not explain to us what it was. We felt it was extremely important that we be able to assure the Australian public that our faith in our security was well placed.⁹⁰

6.79 The Australian Privacy Commissioner and Acting Australian Information Commissioner 'received the necessary assurances [he] required to be satisfied that the personal information being collected as part of the 2016 census was secure'.⁹¹ The Special Advisor to the Prime Minister on Cyber Security was also clear that no data was at risk:

There has been no dispute with any party that no data was lost from the census, and there is agreement that there was encryption from end to end and that the ABS held the keys to decrypt.⁹²

6.80 Evidence to this inquiry from parties involved with either the events or the investigation on 9 August 2016 are all in agreement that no personal data was incorrectly accessed or released.⁹³

Committee View

6.81 It goes without saying that the eCensus website should have had the capacity to withstand what was a relatively minor attack. IBM designed the system so that even if one link was disabled, the second should have been sufficient to carry legitimate traffic and continue processing census forms.

6.82 Criticisms made with the benefit of hindsight must necessarily be tempered, but there appears to have been significant and obvious oversights in the preparation of the eCensus. IBM's failure to have tested a router restart, or have a backup synchronised and in place, appears to have been significant contributing factors to the failure of the eCensus on 9 August. Further, the appropriateness of Island Australia must also be questioned given that some components of the eCensus—such as password resets—required access to international servers. Although it is impossible to say with certainty and hindsight what would have been had the ABS made different decisions, allowing IBM to undertake their own testing and the failure to complete an IRAP assessment appear to be significant oversights in project management.

6.83 The ABS' primary consideration during the period under discussion was to complete an accurate census of Australia. As discussed in preceding chapters, community trust is a central ingredient of a reliable census, and the ABS has

90 Mr Jonathan Palmer, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 31.

91 Office of the Australian Information Commissioner, *Submission 68*, p. 1.

92 Mr Alastair MacGibbon, Special Advisor to the Prime Minister on Cyber Security, Department of Prime Minister and Cabinet, *Committee Hansard*, 25 October 2016, p. 45.

93 Mr Kerry Purcell, Managing Director, IBM Australia and New Zealand, *Committee Hansard*, 25 October 2016, pp. 12, 19; IBM Australia Limited, *Submission 87*, p. 2; Special Advisor to the Prime Minister on Cyber Security, *Submission 31*, p. 2.

repeatedly said that information security is one of its primary objectives. In light of this—and the information available to the ABS through the IBM monitoring system—the decision taken by the ABS on the evening of 9 August to close access to the eCensus website appears to be justifiable, understandable, and entirely correct.

6.84 A narrow focus on the events of August risks treating the symptoms and ignoring the disease. Questions regarding the validity of the ABS' actions should be focused on the years and months before the 2016 census when the decisions were made that would manifest themselves on 9 August 2016. The confirmation that the census would proceed, the delayed development of an eCensus solution, the use of a limited tender and the erosion of internal capacity to adequately oversee the development of the eCensus are all serious concerns that may contributed to the events of 9 August 2016.

6.85 The committee expected that the 2016 census would be subject to the two-pass ICT Investment Approval Process (IIAP) outlined by the Department of Finance.⁹⁴ The census project had lifetime ICT costs over \$10 million once IBM, UXC Saltbush and Revolution IT contracts were taken into account. Further, as recognised by the ABS, the 2016 census was a high risk project.⁹⁵

6.86 The ABS told the committee that the Department of Finance determined in October 2012 that the 2016 census was not required to complete to the IIAP.⁹⁶ In answers to questions on notice, the Department of Finance noted that the project did not meet the criteria for inclusion in the IIAP.⁹⁷ The committee notes that the ICT Review document recommending tendering for the eCensus was not completed until May 2014. The committee considers that the IIAP is in need of review to ensure that:

- (a) projects such as the 2016 census fall within scope;
- (b) the Department of Finance re-assesses projects at a later date if required; and
- (c) the splitting of contracts is not a mechanism to skirt whole of life cost limits included in the IIAP.

6.87 The committee makes no suggestion that the Department of Finance acted inappropriately or that the ABS split contracts to minimise value-based scrutiny.

6.88 The committee also notes that the responsible Minister has not taken responsibility for the outcomes of the 2016 census. The committee calls on the current

94 Department of Finance, 'ICT Investment Approval Process', <https://www.finance.gov.au/policy-guides-procurement/ict-investment-framework/ict-two-pass-review/> (accessed 21 November 2016).

95 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, pp. 37-38.

96 Mr Trevor Sutton, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 38.

97 Department of Finance, answers to questions on notice, 18 October 2016 (received 18 November 2016), p. 2.

Minister, on behalf of the government, to take responsibility for the shortfalls in oversight that have been revealed through this inquiry. While many parties have not lived up to their responsibilities in delivering the 2016 census, the primary responsibility lies with the government.

Recommendation 4

6.89 The committee recommends that the Australian Government commit the necessary funding for the 2021 census in the 2017–18 Budget.

Recommendation 5

6.90 The committee recommends that the ABS conduct open tendering processes for future census solutions requiring the participation of the private sector.

Recommendation 6

6.91 The committee recommends that the ABS give greater attention to intellectual property provisions in contracts that include licensing and royalty arrangements.

Recommendation 7

6.92 The committee recommends that the 2021 eCensus application be subject to an Information Security Registered Assessors Program Assessment.

Recommendation 8

6.93 The committee recommends that the ABS take a more proactive role in validating the resilience of the eCensus application for the 2021 census.

Recommendation 9

6.94 The committee recommends that the Department of Finance review its ICT Investment Approval Process to ensure that projects such as the 2016 Census are covered by the cabinet two-pass process.

Recommendation 10

6.95 The committee recommends that the Australian Government provide portfolio stability for the ABS.

Recommendation 11

6.96 The committee recommends responsible ministers seek six-monthly briefings on the progress of census preparations. These briefings should cover issues including, but not limited to, cyber security, system redundancy, procurement processes and the capacity of the ABS to manage risks associated with the census.

Census Inquiry Service

6.97 In addition to the eCensus website suffering a prolonged outage, the telephone-based Census Inquiry Service (CIS) also buckled, but this time under the demands of the community. As the ABS explained:

Due to a range of factors including public concerns regarding fines that had been unprompted by the ABS, faster than expected postage of approach letters and a general high awareness of the Census, the CIS experienced unprecedented demand that greatly exceeded ABS forecasts. The unavailability of the online Census on Census night significantly exacerbated the number of calls. This led to significant ‘call blocking’ and inconvenience for Australians both in the lead-up to and on Census night. We apologise for this, and the ABS will take account of this experience in planning future Censuses.⁹⁸

6.98 The ABS reported that the demand forecast for the 2016 census was 1.6 million calls, compared with 1.04 million calls received for the 2011 census.⁹⁹ The committee heard that by 8 September 2016 there had been 3.2 million attempts to call the CIS, of which 1.1 million had been answered. In addition there were 1.6 million calls to the automated inquiry service, of which 0.9 million were handled electronically.¹⁰⁰

6.99 The ABS outlined their strategy for dealing with excess demand should it eventuate:

It was decided that the strategy for managing excess calls would be to politely request that callers call back later if the queues are at capacity, rather than provide callers with long wait times. This strategy is known as call blocking.¹⁰¹

6.100 The ABS submission concludes: 'The use of call blocking meant that 90.8 [per cent] of callers that got through to the CIS had their calls answered within 5 minutes'.¹⁰² For the approximately one-in-three people who managed to make it onto the phone queue, the wait was relatively short.

6.101 Some submissions reported that people were unable to request a paper form in a timely manner due to excess demand on the CIS, meaning that their paper forms arrived well after 9 August.¹⁰³ Other submitters reported that their request for paper forms was not processed correctly or in a timely manner.¹⁰⁴ It was pointed out to the committee that households that do not have a telephone or internet connection would not have had any way to complete their census or obtain a paper form in 2016: a challenge that was previously circumvented by the physical delivery of paper forms to

98 Australian Bureau of Statistics, *Submission 38*, p. 4.

99 Australian Bureau of Statistics, *Submission 38*, p. 65.

100 Australian Bureau of Statistics, *Submission 38*, p. 65.

101 Australian Bureau of Statistics, *Submission 38*, p. 65.

102 Australian Bureau of Statistics, *Submission 38*, p. 65.

103 Dr Cassandra Cross, *Submission 66*, p.2; Name withheld, *Submission 61*, p. [1].

104 Mr John Denman, *Submission 23*, p. [1].

every household.¹⁰⁵ These households were likely followed up by Field Officers at a later date.

6.102 The problems affecting the telephone service were of particular concern to vision impaired Australians who were required to contact the telephone system in order to access the 12-digit code for the census, clarify information about the accessibility of the online forms, or request the census in an alternate form.¹⁰⁶ The Science Party also expressed concern that the unavailability of both the eCensus and CIS may adversely affect the response rate to the census.¹⁰⁷

6.103 It was put to the committee that having to request a paper form via a telephone service added an additional unnecessary step that households had to complete in order to undertake the census.¹⁰⁸ ID Consulting, an Australian based demographic consultancy, argued that:

There is a large segment of Australia's population who would prefer a paper Census form (particularly older residents), but the phone lines were jammed and these households were unable to get through. In any case asking a household to ring up to enable them to respond to the Census in their preferred way creates another level of impediment to responding and reduces the response rate.¹⁰⁹

6.104 The committee heard that community perceptions that the census had to be completed on the night of 9 August or face a fine added to general frustration and distress.¹¹⁰ Vision Australia, for example, told the committee:

Vision Australia spoke to people who were deeply distressed by the lack of information available; their anxiety was exacerbated by the threat of fines for not completing the Census on time. The abrupt message left on the service that people should call back later only added to this confusion.¹¹¹

6.105 Vision Australia recommended that future Censuses should feature a dedicated, separate telephone service for people who require alternate formats or assistance to complete the census.¹¹²

105 Dr David Lucas, *Submission 33*, p. 1.

106 Vision Australia, *Submission 76*, p. 3.

107 Science Party, *Submission 56*, p. 3.

108 Dr David Lucas, *Submission 33*, p. 1; Executive Council of Australian Jewry, *Submission 26*, p. 3.

109 ID Consulting Pty Ltd, *Submission 39*, p. [3].

110 ID Consulting Pty Ltd, *Submission 39*, p. [6].

111 Vision Australia, *Submission 76*, p. 3.

112 Vision Australia, *Submission 76*, p. 4.

Recommendation 12

6.106 The committee recommends that the ABS consider establishing a dedicated telephone assistance line for people who require special assistance in completing the census.

Development, delivery and collection of census forms and materials

6.107 In June 2014, the ABS signed a Memorandum of Understanding with Australia Post to support the 2016 census.¹¹³ The ABS explained that Australia Post's mail service was used to deliver and return required materials from the majority of households.¹¹⁴ Households that were going to respond online received a log-in code via the post, and households that requested a paper census form would have delivered and returned that information via the post.

6.108 In preparing for the 2016 census, the ABS attempted to anticipate local needs by tailoring delivery to area needs:

In some areas of Australia, where the postal service was likely to be unsuitable or insufficient address information was known, Census Field Officers delivered materials to each dwelling, enabling residents to either complete their form online or mail back a paper form. In other areas where a high proportion of residents were expected to need to complete the Census form on paper, all households were delivered paper forms in addition to login numbers.¹¹⁵

6.109 Despite the relative surety of the mail system in Australia, some submissions claimed that residents at certain addresses were not provided with census information. One such example related to the committee states:

We know of one elderly person in our community, whose address was apparently not listed by the ABS, who did not receive the letter at all, and had to go to extraordinary lengths to obtain the census questionnaire form. The person has lived at that address for 48 years and reports having had no difficulties in receiving previous census forms and completing them.¹¹⁶

6.110 It was put to the committee that the correspondence from the ABS with the log-in codes for the eCensus had the appearance of junk-mail and may have been discarded by some residents.¹¹⁷ From the perspective it of survey design, ID Consulting observed:

113 Australian Bureau of Statistics, *Submission 38*, p. 51.

114 Australian Bureau of Statistics, *Submission 38*, p. 53.

115 Australian Bureau of Statistics, *Submission 38*, p. 53.

116 Executive Council of Australian Jewry, *Submission 26*, p. 3.

117 Australian Population Association, *Submission 54*, p. [3]; Executive Council of Australian Jewry, *Submission 26*, p. 3; Ms Rosie Williams, *Submission 85*, p. [51].

Lack of personal contact with a collector on delivery means households are less engaged with the Census and the mail-out logins were often ignored or thrown in the bin as junk mail.¹¹⁸

6.111 The ABS submission highlights the lengths they went to in order to support the community to complete their census forms:

In partnership with CSIRO, ABS developed and tested the Census instruction letter, reminder letter and their envelopes to best support the Australian public undertaking the required actions – completing the Census online or requesting a paper form. Forty-nine variants were tested through random control trials, in order to select the best approach letters to households and reminder letters where completed forms had not been submitted.¹¹⁹

The role of field officers

6.112 One of the largest logistical elements of the census is recruiting the large number of Census Field Officers (CFOs) required to assist households complete the census. Approximately 38 000 temporary staff were recruited for the 2016 census.¹²⁰

6.113 The evidence received by the committee amply highlighted some of the challenges in conducting such a large project that incorporates new elements such as the eCensus and form mail-outs. Some submitters felt that the conduct of CFOs was inappropriately persistent and aggressive. It was reported by one CFO that:

Field Officers were required to adhere to a strict timeline for visiting dwellings, with five visits scheduled over three weeks from 26 August to 16 September. Given the context of 'I've got until 23 September', this was seen as tantamount to harassment by many householders, who resisted what they perceived as unreasonable pressure to comply.¹²¹

6.114 At least one CFO reported to the committee cases where the households were visited multiple times because of insufficient information sharing.¹²²

6.115 Others felt that the ABS—as represented by CFOs—were insufficiently proactive in following up on households.¹²³ The committee was told that CFOs in many mail-out areas did not commence their visits until two weeks after census night, by which time the census was no longer 'front of mind' for many people.¹²⁴ This appears to be a consequence of the move to a digital first census which reduced the role for CFO:

118 ID Consulting Pty Ltd, *Submission 39*, p. [2].

119 Australian Bureau of Statistics, *Submission 38*, p. 55.

120 Australian Bureau of Statistics, *Submission 38*, p. 55.

121 Name withheld, *Submission 59*, p. 4.

122 Name withheld, *Submission 90*, pp. 3–4.

123 ID Consulting Pty Ltd, *Submission 39*, p. [3].

124 Name withheld, *Submission 59*, p. 4.

The use and approach of reminder letters were planned to allow half of all Australians to respond to the Census before household visits were required. Household visits were planned to provide support to any households that required it, deliver additional materials and remind households to complete the Census.¹²⁵

6.116 Additional concerns raised in submissions included issues such as insufficient training, an over-reliance on CFOs using personal resources to ensure the success of the census, and that the information flows between the ABS and CFOs were insufficient.¹²⁶ As the face of the census in the community, CFOs were the ones who were left to motivate people to participate in the census following the events of 9 August.¹²⁷

125 Australian Bureau of Statistics, *Submission 38*, p. 53.

126 ID Consulting Pty Ltd, *Submission 39*, p. [5]; Name withheld, *Submission 90*, pp. 3–8.

127 Name withheld, *Submission 59*, p. 3.

Chapter 7

Census 2016: the morning after

Response rate and quality of the data

7.1 The census is the preeminent cyclical statistical project undertaken in Australia. The statistics produced by the census are a nearly complete count of everyone in Australia. Whereas the results of a survey based on a sample are extrapolated to determine population characteristics, the census is a count of the entire population. As such, it is necessary that the census has a very high response rate in order to accurately report on key population indicators. The committee was told that the 2006 and 2011 Censuses had a 95.8 per cent and a 96.3 per cent response rate respectively.¹

7.2 It was suggested to the committee that the response rate to the 2016 census would be adversely affected by the privacy concerns surrounding the ABS' decisions to retain names and addresses, as well as the logistical impediments created through the failure of the eCensus website and telephone service.² The Executive Council of Australian Jewry Inc. expressed the concerns of many census users:

As a community, we are very concerned at the possibility that the events leading up to, during and following census night might have a detrimental effect on the quality of the 2016 Census data, potentially impacting negatively on our ability to plan for current and future service provision and need in our community.³

7.3 Trust is reported to be a key ingredient in the willingness of individuals to provide survey information. Some submitters argued that the changes to the 2016 census erode that trust and will therefore lead to a lower response rate.⁴ The APF argued:

[The] quality of data that is collected depends on trust so if the trust plummets, the quality plummets. Whether it plummets from a not very good level downwards or from a really good level downwards obviously depends on history but it plummets.⁵

1 Australian Bureau of Statistics, *Submission 38*, p. 37.

2 Australian Population Association, *Submission 54*, p. [1]; Salinger Privacy, *Submission 24*, p. 4; Name withheld, *Submission 20*, p. [1].

3 Executive Council of Australian Jewry, *Submission 26*, p. 2.

4 Salinger Privacy, *Submission 24.1*, p. 9.

5 Dr Roger Clarke, Board Member, Australian Privacy Foundation, *Committee Hansard*, 25 October 2016, p. 59.

7.4 The committee also heard suggestions that the data that was collected through the census may be less reliable than in the past due to households deliberately withholding or incorrectly supplying information. The Online Hate Prevention Institute proposed that this effect would be more pronounced for specific groups in the community where trust was already low.⁶

7.5 Whereas the completeness of coverage of the census is improved by the post-enumeration survey (PES – discussed in chapter 2), the committee heard that it is difficult to measure how many households have provided inaccurate information.⁷ It was observed by the ARC Centre of Excellence for Children and Families over the Life Course that:

[Public] perceptions of risk in completing the 2016 Census, whether actual or perceived, may have some impact on data quality and see value in further research on the potential impact of such perceptions on actual response data (if any), along with potential methodological implications and future mitigation strategies, if required.⁸

7.6 In order to maximise trust in the accuracy of the census data, the ANU Centre for Social Research and Methods suggested that the ABS should be proactive in releasing as much of the raw- and metadata from the census as possible to allow researchers to make their own estimates of reliability.⁹

Interim census results

7.7 In October 2016, the ABS was able to report to the committee that it appears that the 2016 was a success from the perspective of the response rate and early indications of data quality. The ABS was able to report to the committee that the response rate was over 96 per cent:

I am pleased to report that all the available evidence suggests we will have high quality census data from the 2016 collection—a preliminary participation rate of over 96 per cent of households contributing data to the 2016 census, comprising over 4.9 million online forms and over 3.5 million paper forms, and many personal forms in addition to the household ones.¹⁰

7.8 Although the PES is still being completed, the Australian Statistician informed the committee that:

The initial quality checks we have undertaken to date, covering over half of the total census returns, show low levels of item non-response to the known

6 Online Hate Prevention Institute, *Submission 55*, p. 9.

7 Mr Bill McLennan, private capacity, *Committee Hansard*, 25 October 2016, p. 6.

8 ARC Centre of Excellence for Children and Families over the Life Course, *Submission 32*, p. [3].

9 ANU Centre for Social Research and Methods, *Submission 57*, p. 7.

10 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 26.

sensitive questions. The much higher level of online response achieved in the 2016 census compared to past years is expected to lead to higher quality census responses overall, drawing on the 2006 and 2011 experience about the higher quality of online responses.¹¹

7.9 Although the committee was cautioned that it is not possible to know the response rate until the conclusion of the PES which will inform how different subgroups responded to the census, the Australian Statistician's evidence points to a successful census.¹²

7.10 Furthermore, the ABS was able to report to the committee that the census—despite the problems of August—continues to enjoy high levels of public support. In research commissioned by the ABS, around 97 per cent of Australians intended to complete the census and over 80 per cent agreed that the census should be compulsory.¹³ Importantly, only 1.2 per cent of forms counted have been returned with no name provided.¹⁴

7.11 The ABS reports that the first census data will be released on 11 April 2017.¹⁵

Fines for non-compliance

7.12 The census was completed by the vast majority of households in a timely manner. In the small number of cases in which individuals refuse to comply with the census requirements set out in law, fines or other penalties may apply.

7.13 The issue of fines featured heavily in the lead-up to the census, despite the fact that 'the ABS did not mention fines in any campaign materials before census night'.¹⁶ The ABS reported to the committee that the 'unexpected and unprompted media and social media focus on [the] potential of census fines created a degree of public fear'.¹⁷ Social media updates from the ABS on the night of 9 August made it clear that there were no fines for completing the census after 9 August.¹⁸

7.14 The census is compulsory, with the *Census and Statistics Act 1905* specifying that all questions (with the exception of religion) be answered fully and accurately. Fines for the failure to complete the census can be issued by a court.¹⁹

11 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 26.

12 Australian Population Association, *Submission 54*, p. [2].

13 Australian Bureau of Statistics, *Submission 38.1*, pp. 6–8.

14 Australian Bureau of Statistics, *Submission 38.1*, p. 9.

15 Australian Bureau of Statistics, *Submission 38*, p. 3.

16 Australian Bureau of Statistics, *Submission 38*, p. 59.

17 Australian Bureau of Statistics, *Submission 38*, p. 65.

18 Australian Bureau of Statistics, *Submission 38*, p. 68.

19 Australian Bureau of Statistics, *Submission 38*, p. 36.

7.15 The ABS reported that in 2006 and 2011 there were 266 and 78 cases respectively that were referred to the Commonwealth Director of Public Prosecutions (CDPP). The CDPP can choose whether or not to take further action against individuals who refuse to complete their census forms.²⁰ Although fines are able to be levied for non-compliance, the committee learnt that these powers are used sparingly:

Although the Census is compulsory, the ABS relies on the willing cooperation of Australians to conduct a successful Census. While fines for the failure to complete a form can be issued by a Court, this measure is used sparingly. For the 2011 Census, fewer than 100 persons were prosecuted for failing to complete a form.²¹

7.16 The ABS explained to the committee that referrals 'to the CDPP are considered only after all reasonable attempts to achieve compliance using a cooperative approach have failed'.²²

7.17 Citing the ABS information sheet *Do I have to do the Census?*, administrative law expert Kathryn Miller argued that:

...the ABS intended to, and did, create an impression amongst members of the public that failure to provide their name could result in penalties, including fines and a criminal conviction.²³

7.18 The committee heard that the prospect of fines caused many in the community distress when the eCensus website was shut down and the phone system failed. ID Consulting reported to the committee that:

This increased emphasis on fines resulted in a lot of public confusion and fear when the online site went down. Many elderly people with no access to a paper form were terrified of receiving fines and just wanted to do the right thing. This does not engender goodwill within the community.²⁴

7.19 Some submissions described the use of fines as an intimidation tactic in an 'attempt to force the compliance of the population'.²⁵ Electronic Frontiers Australia suggested large-scale threats of fines were 'an inappropriate means to ensuring the population accurately complete the census'.²⁶ It was queried how the collection of census data could be said to have been undertaken with the consent of the population when failure to provide private information would result in punishment.²⁷

20 Australian Bureau of Statistics, *Submission 38.1*, p. 10.

21 Australian Bureau of Statistics, *Submission 38*, p. 36.

22 Australian Bureau of Statistics, *Submission 38.1*, p. 10.

23 Ms Katherine Miller, *Submission 67*, pp. [3–4].

24 ID Consulting Pty Ltd, *Submission 39*, p. [6].

25 Name withheld, *Submission 36*, p. [1].

26 Electronic Frontiers Australia, *Submission 72*, p. 2.

27 Dr Monique Mann & Dr Matthew Rimmer, *Submission 75*, p. 32.

7.20 Of particular concern to some submitters was the potentially high value of the fine of \$180 per day until the census was completed. The APF labelled the use of potentially unlimited fines 'punitive', and recommended their discontinuation.²⁸ It was elsewhere argued that the size of the fine is disproportionate to the harm caused by the failure to complete the census.²⁹

7.21 The APF recommended that fines be of a fixed value of a 'nominal amount'.³⁰ A number of other submitters also called for fines to be of a fixed value.³¹

7.22 Several organisations called on the ABS not to fine people for failing to provide their names and addresses.³² Digital Rights Watch made this argument on privacy and logistical grounds:

The public should not be penalised for mismanagement and mistakes made by the ABS, nor should they be penalised for taking actions to protect their privacy after the ABS unilaterally changed the system by which their data is collected and recorded.³³

7.23 The Science Party argued that: 'Given the confusion and errors surrounding the 2016 census process, it is our recommendation that these fines not be pursued, as a show of good faith'.³⁴

7.24 The ABS told the committee that every census has a percentage of forms that are not completed in their entirety, and that it has not been past practice to prosecute those individuals. The Australian Statistician explained:

The other aspect I will add is that certainly we have had aspects of item nonresponse in the census in past years...aspects such as income, occupation, age, country of birth. Religion is one that is optional but nonetheless there are a number of compulsory parts of the census where we do get a small but modest level of item nonresponse. In most of those cases, I am not aware that we have prosecuted people.³⁵

7.25 The ABS later reported that:

A decision on referring matters regarding individuals not providing a full response to the census will be made in the context of the impact on the quality of the census. However, the ABS has undertaken a comprehensive

28 Australian Privacy Foundation, *Submission 74*, p. 10.

29 Name withheld, *Submission 7*, p. 9; Name withheld, *Submission 20*, p. [1].

30 Australian Privacy Foundation, *Submission 74*, p. 10.

31 Name withheld, *Submission 7*, p. 1; Salinger Privacy, *Submission 24.1*, p. 9.

32 Name withheld, *Submission 11*, p. [2]; Science Party, *Submission 56*, p. 1; Name withheld, *Submission 58*, p. [3].

33 Digital Rights Watch, *Submission 51*, p. 7.

34 Science Party, *Submission 56*, p. 5.

35 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 43.

data verification process involving more than 12 million person records, and at this stage, there is no indication that there have been a significant number of households that have withheld their name and address or provided a false name.³⁶

Committee view

7.26 Prominent discussions of the prospect of fines appear to have caused many Australians distress during the census period. The committee notes the evidence from the ABS that penalties can be an effective method to improve participation and truthfulness for censuses. Although it is important to ensure that the census continues to have a very high participation rate, this should be achieved through, as much as possible, the goodwill of the community based on trust in the institution of the ABS.

7.27 The value of fines should be appropriate to the harm caused by non-compliance; striking a balance between incentivising participation and sending a message that the census is an important national project requiring input from all Australians. The committee considers that the prospect of a penalty of unknown size to be unfair, and disproportionate to the harm caused by the small levels of census non-participation.

Recommendation 13

7.28 The committee recommends that the maximum value of fines and any other penalties relating to the census be explicitly stated.

Recommendation 14

7.29 The committee recommends that the Australian Bureau of Statistics develop a clear communications strategy outlining the outcomes for non-compliance with the census, including resolution processes and the value of possible penalties.

Adequacy of funding and resources for the ABS

7.30 The committee heard much evidence to the effect that the ABS is underfunded to meet its objectives, and that the current levels of funding place at risk the ongoing operations of the ABS. The ABS has a number of statutory obligations such as conducting censuses. It was put to the committee that it is important that the ABS is properly staffed, resourced and managed to enable it to fulfil these responsibilities.³⁷

Funding for day-to-day operations

7.31 The ABS is principally funded by the Australian Government. The ABS' annual appropriation is cyclical in nature due to the census which peaks every five years with the collection and processing of census data. It was reported to the committee that the average annual non-census appropriation for the ABS is around

36 Australian Bureau of Statistics, *Submission 38.1*, p. 11.

37 National Catholic Education Commission, *Submission 69*, p. 6; ARC Centre of Excellence for Children and Families over the Life Course, *Submission 32*, p. [5].

\$259 million per year.³⁸ The ABS reported that for fifteen years now resourcing for the ABS and demands have been moving in opposite directions:

Over the last 15 years, ABS resources have generally been reducing. Its staff numbers have fallen by 14% and the budget appropriation (in real terms) has also fallen by 14%. In contrast, the demands on the ABS to properly measure the economy, society and the environment, and respond to the requirements of governments, has increased and become more complex.³⁹

7.32 The committee learnt that forward funding estimates for the ABS imply that approximately 740 further staff will have to leave the ABS by 2019.⁴⁰ As of 30 June 2016—near the peak of the census cycle—the ABS employed a total of 3526 people, with 2652 employed on an ongoing basis.⁴¹

7.33 It was suggested to the committee that there is broad awareness that the ABS is lacking in resources:

...it is public knowledge that reductions in the ABS budget have resulted in the curtailment of a number of important collections and in the reduction of the ABS' analytical capacity.⁴²

7.34 The ARC Centre of Excellence for Children and Families over the Life Course stated that ongoing funding is important to continue to allow the ABS to continue undertaking high quality work:

Appropriate funding is critical to ensuring the ABS is able to realise appropriate advancements in data collection, and where government seeks to achieve efficiencies through online data collection, it is vital that additional resources are able to be invested in public information and supporting infrastructure.⁴³

7.35 The committee heard that regular users of ABS products and surveys have noticed 'an overall downgrading of ABS collections and service in recent years'.⁴⁴ The ABS explained that:

While the ABS has strived to operate efficiently and has a strong track record of innovation to improve its efficiency, the ABS has occasionally had to reduce its work program to remain within its budget and to continue to produce high quality statistics. Most recently this occurred in 2014, when

38 Australian Bureau of Statistics, *Submission 38*, p. 13.

39 Australian Bureau of Statistics, *Submission 38*, p. 14.

40 Australian Bureau of Statistics, *Submission 38*, p. 14.

41 Australian Bureau of Statistics, *Annual Report 2015–16*, p. 56.

42 School of Demography, Australian National University, *Submission 40*, p. 5.

43 ARC Centre of Excellence for Children and Families over the Life Course, *Submission 32*, p. [5].

44 National Catholic Education Commission, *Submission 69*, p. 6.

the ABS discontinued six statistical programs and made reductions to a further seven.⁴⁵

7.36 Volunteering Tasmania noted that the ABS has reduced the collection of statistics relevant to their organisation due to funding constraints.⁴⁶

7.37 The School of Demography at the Australian National University argued that collections and analysis decisions based on funding restraints restrict the availability of data for the common good.⁴⁷ The ABS observed that they will never have 'enough appropriation to produce all of the statistics or provide all of the statistical services that users want'.⁴⁸

7.38 The ABS does have some capacity to decrease its reliance on government appropriations. The ABS is able to retain revenue from the sale of its goods and services. The committee was informed that:

In 2014-15, the amount of this revenue was \$41.0 million, predominately from Commonwealth agencies towards the delivery of user-funded sample surveys, such as the National Health Survey, Survey of Disability, Ageing and Carers and the Personal Safety Survey. The funds received recover the costs of conducting the surveys.

The ABS does not, and is not permitted to, sell data about individual persons or businesses.⁴⁹

7.39 It was reported that most of this revenue comes from other Australian Government agencies.⁵⁰ It was suggested that one of the reasons behind the ABS' decision to retain names and addresses was in order to increase the commercial value of the data ABS possesses in order to confront continual downward pressure on government funding.⁵¹

7.40 The National Catholic Education Commission (NCEC) argued that access to ABS data should be encouraged and facilitated rather than restricted. NCEC cites ABS' charging for its *TableBuilder* product as a barrier to using census data.⁵² The Online Hate Prevention Institute posited that Australians expect the ABS to be funded out of consolidated revenue, not using information collected for statistical purposes to be repurposed for commercial ones.⁵³

45 Australian Bureau of Statistics, *Submission 38*, p. 14.

46 Volunteering Tasmania, *Submission 50*, p. [1].

47 School of Demography, Australian National University, *Submission 40*, p. 5.

48 Australian Bureau of Statistics, *Submission 38*, p. 15.

49 Australian Bureau of Statistics, *Submission 38*, p. 11.

50 Australian Bureau of Statistics, *Submission 38*, p. 15.

51 Mr Justin Warren, *Submission 65*, p. [1]; Mr Evan Scott, *Submission 13*, p. [2].

52 National Catholic Education Commission, *Submission 69*, p. 6.

53 Online Hate Prevention Institute, *Submission 55*, p. 9.

Funding for the census

7.41 The census is a costly but extremely important exercise. The Australian Government provided approximately \$470 million for to the 2016 census.⁵⁴ The 2011 census was reported to have cost in the order of \$440 million.⁵⁵ One of the driving forces behind the move to the eCensus was the need to reduce the ongoing cost of conducting the census. Financial considerations affect the conduct and operation of the census, as they do all public projects. Professor Richard Madden informed the committee that, in the 1990s, the Australian Government has proposed delaying the census to accommodate budgetary considerations.⁵⁶

7.42 It was put to the committee that funding pressures on the ABS were responsible for the perceived mistakes made in the 2016 census:

Of greatest concern is the apparent lack of adequate skill and resource exhibited by the ABS in conducting the 2016 Census, which appears to be a result of continual reduction in funding to the ABS by successive governments.⁵⁷

7.43 The Australian Population Association suggested that the retention of the same census topics as 2006 and 2011—without the addition of any further topics—was indicative of a lack of funding for the census.⁵⁸

7.44 Some submissions suggested the problems experienced with the 2016 census were a reflection of the resourcing environment within the ABS.⁵⁹ Vision Australia suggested the some of the problems with the CIS were a problem of resourcing, and additional funding should be provided to ensure better service in future censuses.⁶⁰

7.45 It was emphasised to the committee that '[for] censuses to continue to be reliable and timely, appropriate funding investment must be made by the Government'.⁶¹

7.46 The ABS assured the committee that it was provided with sufficient census specific resources to conduct a high quality census:

54 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 27.

55 Australian Bureau of Statistics, *2011 Census Fact Sheet: General*, <http://www.abs.gov.au/websitedbs/D3310114.nsf/home/2011+Census+Fact+Sheet:+General> (accessed 3 November 2016).

56 Professor Richard Madden, *Submission 81*, p. 2.

57 Mr Justin Warren, *Submission 65*, p. [1].

58 Australian Population Association, *Submission 54*, p. [3].

59 Dr Monique Mann & Dr Matthew Rimmer, *Submission 75*, p. 50; Australian Privacy Foundation, *Submission 74*, p. 14; Mr Christopher Biggs, *Submission 3*, p. [1]; Name withheld, *Submission 18*, p. [4].

60 Vision Australia, *Submission 76*, p. [7].

61 Dr Liz Allen, *Submission 41*, p. 6.

In terms of the census there were no issues with budget. We had a satisfactory budget with respect to the census. It is a separate allocation for the census compared with the rest of the organisation.⁶²

ICT capabilities within the ABS

7.47 Problems with the ABS' ICT infrastructure have been publicly acknowledged with the then Australian Statistician, Brian Pink, stating in 2013: 'I remain concerned about the wide range of ageing and fragile business processes and supporting infrastructure used by the ABS'.⁶³

7.48 The 2013 capability review of the ABS undertaken by the Australian Public Service Commission—published in late 2014—noted that ABS' core statistical business processes and IT are well overdue for an upgrade.⁶⁴

7.49 One of the findings of the 2014 ICT Review that led to the partnership between the ABS and IBM was that the ABS was facing funding challenges:

Overall the Review Team found that whilst [the Technology Service Division (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 be granted, the demands of this Program will, despite the extra funds, only further increase the risk of untenable internal TSD resource contention.⁶⁵

7.50 In the 2015–16 Budget, the government announced a \$257 million investment in the ABS over five years to modernise ageing systems and processes and to develop additional statistical capabilities. This comprised \$190 million operating expense and a \$67 million capital injection.⁶⁶ The ABS explained how the money would be used:

This investment will enable the ABS to modernise its statistical business model to reduce the risk of error in statistical outputs; reduce red tape for providers; and achieve faster turnaround in dissemination of statistics in a more complex world. The additional investment does not allow for new statistical collections, and at the conclusion of the program, the ABS ongoing operating budget, excluding census, will reduce by 10%, or by

62 Mr Trevor Sutton, Deputy Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 30.

63 Australian Bureau of Statistics, *Annual Report 2012–13*, p. 2.

64 Australian Bureau of Statistics, *Submission 38*, p. 17.

65 Australian Bureau of Statistics, answers to questions on notice, 14 October 2016 (received 18 October 2016), pp. 8–9.

66 Australian Bureau of Statistics, *Submission 38*, p. 13.

approximately \$27 million per annum. The reduction in appropriation reflects expected savings from more efficient operations after the completion of the transformation program.⁶⁷

7.51 The Australian Statistician highlighted that the extra investment provided by the Australian Government will enable the ABS to progress with certainty over the coming years to deliver a successful census in 2021.⁶⁸

Committee view

7.52 The ABS' funding has been eroded over a number of years while the demands and expectations placed on the organisation have increased. Accurate data is critical for the provision of public services and for businesses making investment decisions in Australia. The ABS is a world leading statistical agency, and to remain such it requires funding to maintain current capacities, meet new demands, and develop the skills necessary to provide quality outputs.

7.53 Issues of financial and human resourcing for the ABS must also be reassessed. The additional \$30 million of costs incurred during the events of August 9 and the inconvenience incurred by many Australians shows the importance of well-targeted investments in the ABS.⁶⁹ The following should be noted in terms of resourcing:

- (a) proper funding should be set for the 2021 census;
- (b) certainty should be given by the Australian Government that the 2021 census will go ahead (as opposed to a move to a 10-year census); and
- (c) the ABS should be afforded flexibility to recruit and train people with the necessary skills to deliver the 2021 census. Important skills include cyber security, project management and IT contract management.

7.54 The committee was concerned to hear that that the Australian Statistician position was left vacant for the majority of 2014. Complex projects require strong leadership and clear goals. The prolonged vacancy at the ABS—a relatively independent agency that is directed by the Australian Statistician—during which time preparations for the census were being completed is unacceptable.

7.55 The committee remains concerned about the current threat of cyber-attacks that seek to gain access to Australian Government data and records. It is expected that this threat will continue to worsen in the future and all government departments should be properly resourced to defend against these threats. The ABS, which collects and stores a wide array of data, should be particularly well-equipped to deal with these threats, via internal capability or the proper management of external parties to deliver these services.

67 Australian Bureau of Statistics, *Submission 38*, p. 13.

68 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 25 October 2016, p. 43.

69 Mr David Kalisch, Australian Statistician, Australian Bureau of Statistics, *Committee Hansard*, 19 October 2016, p. 118.

7.56 As discussed in this chapter, the Australian Government has promised additional restorative funding to the ABS to address concerns regarding funding shortfalls within the ABS. This is a welcome step towards ensuring that Australia continues to have the statistical capacities and knowledge within the public sector to meet future needs.

Recommendation 15

7.57 The committee recommends that the Australian Government provide sufficient funding for the ABS to undertake its legislated functions to a continued high standard.

Recommendation 16

7.58 The committee recommends that the responsible minister act as a matter of urgency to assist the ABS in filling senior positions left vacant for greater than 6 months.

**Senator Chris Ketter
Chair**

Additional Comments by Nick Xenophon and Stirling Griff

This Census Deserves Censure

1.1 9 August 2016 was Census Day. Despite the fact that the Census has been run since 1911 with strong public support, this census was different. In the lead up to, the day of, and in its wake the 2016 Census was mired in controversy.

1.2 That controversy centred around:

- (a) the preparedness of the Australian Bureau of Statistics (ABS) to seamlessly and securely execute what was to be Australia's first predominantly online Census;
- (b) the ABS' response when problems emerged; and
- (c) privacy concerns as to the collection, retention and use of names.

1.3 In the aftermath of the Census, the Government instigated an inquiry into the preparedness and information security aspects of the Census, while the Senate instigated a much broader inquiry.

1.4 The Committee, supported by the Secretariat and submissions from the public, private, not-for-profit sectors and a number of individuals, has produced a comprehensive report and made a number of sensible recommendations.

1.5 Whilst we broadly support the recommendations of the Committee we believe those recommendations do not go far enough to resolve key elements of the privacy concerns that have been raised.

It's all in the Name

1.6 A lot of concern centred about the collection of names by the ABS, particularly when coupled with plans by the ABS to link Census data with other administrative data sets and to create a Statistical Longitudinal Census Dataset (SLCD).

1.7 As the Committee report indicates there has been inadequate consultation over the expanded information gathering and use of that information for Census 2016. We consider the process to have been woefully inadequate, lacked robustness and independent assessment. This in turn has shaken public confidence in the Census. There is, at the very least, ambiguity as to whether the ABS has the power to demand the provision of a person's name for the Census.

1.8 The issue of the necessity to provide a name needs to be resolved definitively to avoid the same controversy arising for future Censuses. There a number of ways in which this could occur:

- (a) the ABS could state that the provision of names in the Census is voluntary;
- (b) a test case could be run to have the matter settled judicially; or

- (c) Preferably, with a legislative amendment to the Census and Statistics Act 1905, to make clear that the provision of a person's name is voluntary.

Recommendation 1

1.9 There should be a legislative amendment to the *Census and Statistics Act 1905* to make clear that the provision of a person's name is voluntary.

Changes, Damned Changes and Statistics

1.10 The Committee examined issues associated with the ABS linking the Census data with other administrative data sets and plans to create a SLCD.

1.11 Was the Parliament properly informed of the changes the ABS was intending? The Committee noted that:

Under section 6(3) of the Australian Bureau of Statistics Act 1975 the ABS must lay before both houses of Parliament 'each new proposal for the collection of information for statistical purposes' before its implementation ... The ABS tabled in the Senate 'Proposal No. 6 of 2016: 2016 Census of Population and Housing, and Post Enumeration Survey' (Proposal) on 17 March 2016. The Proposal made no mention of names and addresses being retained, nor did it mention that this represents a break from past censuses. The ABS appears to have been firmly of the belief that the changes around name and address information were an incremental change that did not require parliamentary oversight.

1.12 In dealing with this issue, the Committee went on to recommend that the ABS 'update its internal guidelines to make clear that consultation requires active engagement with the non-government and private sector.' It made no recommendations with respect to Parliamentary oversight.

1.13 The changes sought by the ABS are so significant that they must be brought before the Parliament for proper consideration as to the concerns and merits associated with them. Crikey's Bernard Keane summed it up when he said this Census has gone from "snapshot to surveillance".

Recommendation 2

1.14 Prior to any linking of Census data to other administrative data sets or to the adoption and implementation of SLCD, such changes must be brought to the Parliament for its consideration and approval.

Confidence and Trust

1.15 The Census is an important tool for good government.

1.16 Because of the intrusive nature of the Census the public must have absolute confidence and trust in those charged with its execution. That trust and confidence has been damaged as a result of the 2016 Census and the Government must act definitively to restore it.

1.17 The additional recommendations that we have made will go a long way to restoring that confidence and trust.

Senator Nick Xenophon
Senator for South Australia

Senator Stirling Griff
Senator for South Australia

Additional Comments by the Australian Greens

Introduction

1.1 The chapter of the committee report devoted to privacy concerns mentions the 2006 efforts by the ABS to move to retention of name and address data and the creation of a 'Longitudinal Data Set', and notes the failure of the ABS to reconcile the differences between the thorough Privacy Impact Assessment (PIA) conducted by Pacific Privacy Consulting in 2005 and the internal PIA conducted by the ABS a decade later. The earlier PIA noted that the longer a longitudinal record is retained, the more possible individual identification becomes.

1.2 Given the identified flaws in the 2015 PIA, including that the committee found no evidence that the ABS consulted with community groups, non-government organisations or privacy advocacy groups, any changes to the ongoing management of census data justified by this PIA should be postponed until a more substantial PIA, along the lines laid out in the committee report, is conducted. If the changes again fail to withstand such scrutiny, they should not be implemented.

1.3 Such a process will also serve to commence the rehabilitation of the ABS in the eyes of the public, and begin to restore trust in the institution.

Recommendation 1

1.4 A new independent Privacy Impact Assessment is performed on the changes to the census within the next 6 months, the outcome of which must determine the acceptability of the changes made to the management of census data after the 2016 census.

**Senator Richard Di Natale
Leader of the Australian Greens**

Appendix 1

Submissions and additional information received

Submissions

<i>Submission Number</i>	<i>Submitter</i>
1	Dr Robert Merkel
2	Dr David Glance
3	Mr Christopher Biggs
4	Mr Adam Gardner
5	Mr Michael Ryan
6	Ms Rebecca Flynn
7	Name Withheld
8	Australian Institute of Family Studies
9	Prof Ian Ring
10	Ms Kate Galloway
11	Name Withheld
12	Name Withheld
13	Mr Evan Scott
14	Name Withheld
15	Name Withheld
16	Ms Annette Riley
17	Name Withheld
18	Name Withheld
19	Name Withheld
20	Name Withheld
21	Name Withheld
22	Mr Johann Trevaskis
23	Mr John Denham
24	Salinger Privacy
25	Ms Rebecca Zuesse
26	Executive Council of Australian Jewry
27	Mr Gary Lord
28	Mr Mark Colyvan
29	Community and Public Sector Union (CPSU)
30	Lockstep Group
31	Special Adviser to the Prime Minister on Cyber Security
32	ARC Centre of Excellence for Children and Families over the Life Course
33	Dr David Lucas
34	Institute of Public Affairs
35	Ms Tess Deyl
36	Name Withheld
37	Mr Bill McLennan
38	Australian Bureau of Statistics
39	ID Consulting Pty Ltd

40	School of Demography, Australian National University
41	Dr Liz Allen
42	Name Withheld
43	Dr William Pettersson
44	Australian Catholic Bishops Conference Pastoral Research Office
45	Name Withheld
46	Name Withheld
47	Emeritus Professor Terence Hull
48	Castan Centre for Human Rights Law, Monash University
49	Name Withheld
50	Volunteering Tasmania
51	Digital Rights Watch
52	Name Withheld
53	Mr Adam Roth
54	Australian Population Association
55	Online Hate Prevention Institute
56	Science Party
57	ANU Centre for Social Research and Methods
58	Name Withheld
59	Name Withheld
60	Mr Ian Brightwell
61	Name Withheld
62	Pirate Party Australia
63	Department of Social Services
64	Name Withheld
65	Mr Justin Warren
66	Dr Cassandra Cross
67	Ms Kathryn Miller
68	Office of the Australian Information Commissioner
69	National Catholic Education Commission
70	Interlime
71	Australian Institute of Health and Welfare
72	Electronic Frontiers Australia
73	Name Withheld
74	Australian Privacy Foundation
75	Dr Monique Mann & Dr Matthew Rimmer
76	Vision Australia
77	Mr David Glynne Jones
78	Mr Stephen Howell
79	Ms Michelle Worthington & Mr Daniel Connolly
80	Ms Andrea Dunlop
81	Professor Richard Madden
82	Confidential
83	Confidential
84	Confidential
85	Ms Rosie Williams
86	Mr Chris Henseleit
87	IBM Australia Limited
88	Nextgen Group Holdings Pty Ltd
89	Vocus Communications
90	Name Withheld

Answers to questions on notice

1. Answers to questions on notice received from the Australian Bureau of Statistics on 21 September 2016.
2. Answers to questions on notice received from the Australian Bureau of Statistics on 18 October 2016.
3. Answers to questions on notice received on 7 November 2016 from the Australian Bureau of Statistics from a public hearing held in Canberra on 25 October 2016.
4. Answers to questions on notice received from IBM Australia from a public hearing held in Canberra on 25 October 2016.

Appendix 2

Public hearings and witnesses

CANBERRA, 25 OCTOBER 2016

BOOTH, Dr Heather, Associate Professor, School of Demography, Australian National University

CARMICHAEL, Dr Gordon Alexander, Associate Professor (Adjunct), School of Demography, Australian National University

CLARKE, Dr Roger, Board Member, Australian Privacy Foundation

GRAY, Dr Edith, Fellow, School of Demography, Research School of Social Sciences, Australian National University

KALISCH, Mr David, Australian Statistician, Australian Bureau of Statistics

LANE, Ms Katherine, Vice-Chair, Australian Privacy Foundation

MacGIBBON, Mr Alastair, Special Adviser to the Prime Minister on Cybersecurity, Department of Prime Minister and Cabinet

McLENNAN, Mr Bill, Private Capacity

PALMER, Mr Jonathan, Deputy Australian Statistician, Australian Bureau of Statistics

PILLAY, Ms Permenthri, Partner, Australia/New Zealand Public Sector Leader for Global Business Services, IBM Australia

PURCELL, Mr Kerry, Managing Director, IBM Australia and New Zealand

SHALLCROSS, Mr Michael, Distinguished Engineer for Global Technology Services, IBM Australia

SMITH, Dr Leonard Robert, Visiting Academic, School of Demography, Australian National University

SUTTON, Mr Trevor, Deputy Australian Statistician, Statistical Business Transformation Group, Australian Bureau of Statistics

VRIJ, Mr Simon, Director, Capability Driven Acquisition Pty Ltd

