EXPLANATORY STATEMENT

Approved by the Australian Communications and Media Authority

Telecommunications Act 1997

Telecommunications (Customer Communications for Outages) Industry Standard 2024

Authority

The Australian Communications and Media Authority (the **ACMA**) has made the *Telecommunications (Customer Communications for Outages) Industry Standard 2024* (the **Standard**) under subsection 125AA(1) of the *Telecommunications Act 1997* (the **Act**) and in accordance with subsection 5(1) and section 6 of the *Telecommunications (Customer Communications for Outages Industry Standards) Direction 2024* (the **Direction**).

The Minister for Communications (the **Minister**) has the power under subsection 125AA(4) of the Act to direct the ACMA to:

(a) determine a standard under subsection 125AA(1) of the Act that:

(i) applies to participants in a specified section of the telecommunications industry; and

(ii) deals with one or more specified matters relating to the telecommunications activities of those participants; and

(b) do so within a specified period.

The Direction was given to the ACMA by the Minister under subsection 125AA(4) of the Act and commenced on 28 August 2024. Subsection 5(1) of the Direction requires the ACMA to determine an industry standard under subsection 125AA(1) of the Act that:

> deals with information to be provided, or made available, by carriers and carriage service providers relating to major outages that impact a telecommunications network used to supply carriage services to end-users.

The objectives and contents of the standard to be made are set out in section 6 of the Direction. The Standard meets the objectives and content requirements in subsection 5(1) and section 6 of the Direction. Subsection 5(2) of the Direction requires that the standard be determined by 14 November 2024 and commence in full at the earliest practical opportunity and no later than 31 December 2024. The Standard will commence on 31 December 2024.

Purpose and operation of the instrument

Background

On 8 November 2023 the Optus network experienced an outage which had a significant impact on a wide range of Australians. The outage also affected emergency services, government services, businesses and vulnerable people.

In response, the Government announced it would commence a post-incident review of the outage. On 21 March 2024 the Review into the Optus Outage of 8 November 2023, undertaken by Mr Richard Bean (Optus Outage Review) was released.

One of the recommendations of the Optus Outage Review was that the ACMA develop a standard or determination requiring carriers to communicate specific information to customers during and about outages – including an explicit focus on communications between the affected network provider and its customers as well as other stakeholders. The Direction requires the ACMA to make that standard.

Purpose

The Standard has been made to fulfil the requirements of the Direction.

The Standard imposes obligations on carriers and carriage service providers (**CSPs**) when there has been a major outage. The Standard requires both carriers and CSPs to notify and communicate information about major outages to various persons including, in the case of a carrier, to other carriers and CSPs, relevant stakeholders and the public. The Standard also requires CSPs to notify and communicate with the public and end-users. The purpose of the notifications and communications is to support those who may be affected by a major outage, particularly end-users.

The Standard seeks to ensure that all notifications and communications about a major outage in a telecommunications network used to supply carriage services will be timely, up to date, accessible (including for customers with a disability or who are culturally or linguistically diverse) and made through a mix of public and direct communication channels. It also seeks to ensure that communications to end-users by CSPs about a major outage will identify, as appropriate, methods for end-users to seek real-time or near real-time assistance.

Operation

Part 1 of the Standard sets out information about the commencement, purpose and application of the Standard. The Standard applies to the section of the telecommunications industry consisting of carriers whose telecommunications networks are used to supply carriage services to end-users, and carriage service providers that supply carriage services to end-users. This Part also includes the definitions for terms used within the Standard.

Part 2 outlines requirements for carriers and CSPs in relation to notifications, communications and assistance requirements. The obligations in this Part apply after a carrier detects a major outage, or after a carrier or CSP receives a notification from a carrier about a major outage.

Division 1 of Part 2 outlines the persons that a carrier or CSP is required to notify or communicate to in relation to a major outage. It also details the information that is required to be included in those notifications and communications and imposes obligations on carriers and CSPs to provide regular updates. Carriers and CSPs are also required to notify and communicate once a major outage has been restored or fully rectified.

Division 2 of Part 2 requires CSPs to provide real-time or near real-time assistance to end-users.

Division 3 of Part 2 provides all CSPs, and all carriers except for the carrier who owns the network that is affected by the outage, an exemption to the requirements in Part 2 in circumstances where the sole or predominant cause of a major outage is a natural disaster.

Part 3 requires carriers and CSPs to have written procedures in place to outline how they will communicate during a major outage. The procedures must be published on the carrier's or CSP's website.

A provision-by-provision description of the Standard is set out in the notes at **Attachment A**.

The Standard is a legislative instrument for the purposes of the *Legislation Act 2003* (the **LA**) and is disallowable.

Documents incorporated by reference

The Standard incorporates or refers to the following Acts and legislative instruments (including by the adoption of definitions), which are available free of charge on the Federal Register of Legislation (http://www.legislation.gov.au):

1. *Acts Interpretation Act 1901* (**AIA**).
2. The Act.
3. The Direction.

4. The LA.

The Acts and the Direction listed above are incorporated as in force from time to time, in accordance with section 10 of the AIA, subsection 13(1) of the LA and section 589 of the Act.

Consultation

Before the Standard was made, the ACMA was satisfied that consultation was undertaken to the extent appropriate and reasonably practicable, in accordance with section 17 of the LA and subsection 125AA(3), and sections 132, 133, 134 and 135, of the Act.

The ACMA consulted with Communications Alliance (being a body that represents the telecommunications industry), the Telecommunications Industry Ombudsman (**TIO**), the Australian Competition and Consumer Commission (**ACCC**), the Australian Communications Consumer Action Network (**ACCAN**) (being a body that represents the interests of consumers), industry stakeholders, consumer groups and the public on the making of the Standard. Between 17 September and 20 October 2024, the ACMA conducted a public consultation process, through the release of a draft Standard and a consultation paper on the ACMA's website.

On 19 September 2024, in accordance with subsection 132(1) of the Act, the ACMA also published a notice in *The Australian* newspaper, being a newspaper circulating nationally. The notice stated that the ACMA had prepared a draft Standard, advised that a copy could be accessed via the ACMA's website and invited interested persons to give written comments by 20 October 2024.

The ACMA informed key stakeholders of the publication of the documents and invited comment on the draft Standard and on the issues set out in an accompanying consultation paper.

The consultation paper sought comment on several key issues included in the draft Standard as well as inviting general comments. The ACMA received 22 submissions from a range of stakeholders including the telecommunications industry, consumer advocates, individual consumers and government agencies.

All non-confidential submissions are, at the time Standard was made, available on the ACMA website.

The submissions provided a broad range of feedback on the draft Standard and the ACMA considered all relevant issues raised by the submissions in the consultation process when making the Standard. Key issues raised by different cohorts of stakeholders included the following:

- **Threshold limit for major outage -** Industry participants' submissions indicated that industry was broadly comfortable with the threshold for major outages however some had concerns with the technical meaning of what constituted an outage. ACCAN, the TIO and some members of the public submitted that the threshold of 500,000 impacted users was too high for major outages. It was noted that larger communities and capital cities such as Darwin and Hobart would not be captured by the definition which some submissions considered to be unacceptable. However, it was noted that those communities would be captured if all services provided using a carrier's network were not functioning in that state or territory. Submissions also argued that the impact to end-users is materially the same regardless of the size or cause of the outage, and that the impact to a community of an outage is significant, especially where a community relies on only one telecommunications service provider and can be 'cut-off' from essential telecommunications services. Some submissions considered that the proposed 30 minute duration for a major outage to invoke the obligations under the Standard was too short.

  In response to these submissions:

  - Changes were made to the definition of 'major outage'. The changes include a reduction to the threshold of an outage from 500,000 services to 100,000, and an increase to the duration of a major outage from 30 minutes to 60 minutes.

- **Outages caused by natural disasters** -While submissions from industry participants generally supported the exclusion of major outages that are caused by natural disasters, some consumers, the TIO, ACCAN,

the ACCC and other government agencies submitted that notification and communications obligations in relation to outages caused by natural disasters needed to be included in the Standard. The ACMA met with some state government agencies that had submitted that the notification and communication requirements should apply to all telecommunications outages, regardless of the size or cause of the outage. Those agencies proposed that the application of the standard should be broad based, and not only apply to outages caused by telecommunications companies themselves (for example, by technical faults within the telecommunications network, facilities and systems), but should be applied for any outages experienced by end-users, such as those caused by natural disasters, or any level of storm or electricity supply outage. Submissions argued that the impact to end-users is materially the same regardless of the cause of the outage.

In response to these submissions:

- The ACMA has included an exemption from the notification and communication requirements where a major outage has been caused by a natural disaster. The exemption applies to the notification requirements for carriers and CSPs, but still requires a responsible carrier (the carrier who owns the network that is affected by the outage) to provide information on its website. The ACMA may reconsider this exemption when it determines a standard under subsection 125AA(1) of the Act in relation to significant local outages which, in accordance with the Direction, is required to be determined by 30 April 2025.

- **Implementation timeframe** - Industry participants raised concerns about the timing for the implementation of the Standard being 31 December 2024. Participants noted that there are network embargoes put in place over the Christmas fire and storm season until the end of January prohibiting any changes or upgrades to systems. This would prevent carriers and CSPs from being able to implement system changes that would enable them to give effect to and comply with the obligations in the Standard. The Direction requires that the standard required by subsection 5(1) of the Direction is to commence in full at the earliest practical opportunity and no later than 31 December 2024. Consequently, the ACMA is required to commence the provisions in the Standard by that date.

- **Arrangements for carriers without end-users vs CSPs -** Several submissions raised concerns that the requirements apply to carriers that do not have end-users, and sought clarity on the requirements that would potentially apply to such carriers (for example carriers that only provide backhaul services, either domestically or via international submarine cables and sell capacity to other carriers or carriage service providers, but do not directly supply carriage services to end-users). These submissions advocated that it would be unnecessary for these types of carriers to provide information to end-users, as end-users that ultimately rely on their services (through contractual arrangements with other carriers and carriage service providers to provide telecommunications services) would not look to such a carrier for information, as they are not aware of that carrier's role in the supply chain.

- Concerns were also raised about where the responsibility and capability lies in determining the scale of an outage. CSPs argued that, given they do not own the network, they are unable to identify the number of services in operation that are affected by an outage as that information is held by the carrier – the owner of the network. Some CSPs also argued that the notification requirements for smaller CSPs should not be the same as for the larger CSPs and carriers, given the significantly lower resources they work with.

  In response to these submissions:

  - Changes were made to the Standard to separate the notification and communication obligations on carriers and CSPs. The changes now require carriers to notify and communicate with carriers, CSPs, the public and relevant stakeholders. CSPs are required to notify and communicate with the public and end-users. The changes take into account the fact that CSPs do not own the networks and so cannot detect the nature and cause of an outage. The changes also reflect that carriers do not have direct relationships with the end-users of CSPs to which they supply carriage services.

- **Accessibility -** ACCAN submitted accessibility requirements for vulnerable end-users were inadequate and did not meet the objective of the Minister's Direction. The ACMA revised the Standard to address these concerns.
- **Notification frequency -** Carriers advised their systems will need to be updated to send mass volumes of SMS notifications and email as their current systems are not adequate. Carriers also advised that notifications every two hours would be too frequent for long duration outages – especially if applied to natural disasters that may last days or weeks. Submissions argued that SMS notifications risk clogging mobile networks when they are recovering from outages, especially where they were staged every 2 hours but could not be sent due to the network outage. This could give rise to potential confusion for end users when notifications were received, and the information contained therein may not be accurate or up to date.

  In response to these submissions:

  - Changes were made to the Standard so that update communications and notifications are to be made or sent if there is a material change to the major outage, or, if there is no material change, as frequently as the carrier or CSP considers necessary and at least every 6 hours for the first 24 hours after the major outage, and once every 24 hours thereafter, until the major outage is rectified.

Regulatory impact assessment

The ACMA prepared an Impact Analysis (**IA**) included at **Attachment C**. The Office of Impact Analysis (**OIA**) assessed the IA as compliant with good practice (OIA reference number: 05109).

Statement of compatibility with human rights

Subsection 9(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* requires the rule-maker in relation to a legislative instrument to which section 42 (disallowance) of the LA applies to cause a statement of compatibility with human rights to be prepared in respect of that legislative instrument.

The statement of compatibility with human rights set out in **Attachment B** has been prepared to meet that requirement.

Attachment A

Notes to the *Telecommunications (Customer Communications for Outages) Industry Standard 2024*

Part 1 – Preliminary

Section 1 Name

This section provides for the industry standard to be cited as the *Telecommunications (Customer Communications for Outages) Industry Standard 2024* (the **Standard**).

Section 2 Commencement

This section provides for the Standard to commence on 31 December 2024.

Section 3 Authority

This section identifies the provision that authorises the making of the Standard, namely subsection 125AA(1) of the *Telecommunications Act 1997* (the **Act**) and notes that it has been determined in accordance with subsection 5(1) and section 6 of the *Telecommunications (Customer Communications for Outages Industry Standards) Direction 2024* (the **Direction**).

Section 4 Application

This section provides for the Standard to apply to certain participants in the telecommunications industry, being carriage service providers (**CSPs**) that supply carriage services to end-users, and carriers whose telecommunications networks are used to supply carriage services to end-users. The section also provides that the Standard is intended to give effect to the objectives set out in subsection 6(1) of the Direction and address the matters set out in subsection 6(2) of the Direction as they relate to those carriers and CSPs.

Section 5 Definitions

This section defines key terms used in the Standard.

In particular, 'major outage' is defined to mean any unplanned adverse impact to a telecommunications network used to supply a carriage service to end-users that is expected to be of a duration of, or longer than 60 minutes, and:

- results in an end-user being unable to establish and maintain a carriage service; and
- affects, or is likely to affect either 100,000 or more services in operation or all carriage services supplied using the telecommunications network in a State or Territory.

An 'unplanned adverse impact' could include a situation where services are degraded to the extent that an end-user cannot use the core aspect of the service. For instance, for a voice service, this would mean being unable to make and maintain a call, and for a data service, it would mean being unable to receive or send data (such as being unable to access the internet).

Some other expressions used in the Standard, such as carrier, carriage service provider and telecommunications network, are defined in the Act.

Section 6 References to other legislative instruments

This section provides that in the Standard, unless the contrary intention appears, a reference to any other legislative instrument is a reference to that other legislative instrument as in force from time to time.

Part 2 – Notification, communication and assistance requirements

Division 1 Notification and communication requirements

Subdivision 1.1 Carriers

Section 7 Application

This section provides that Subdivision 1.1 applies to responsible carriers and a carrier who is not a responsible carrier but has received a notification under Part 2 from a responsible carrier. A 'responsible carrier' is the carrier that detects a major outage affecting a telecommunications network that it owns (see section 5). This section clarifies that reference in Subdivision 1.1 to 'carrier' is a reference to both a responsible carrier and a carrier that has received a notification under Part 2, from a responsible carrier.

Section 8 Requirement to notify other carriers and carriage service providers

This section applies to a carrier that detects, or is notified of, a major outage affecting the responsible carrier's network (referred to as the ***first carrier***).

Where the first carrier has a commercial arrangement for the supply of carriage services with another carrier, and/or a CSP, the first carrier must, as soon as practicable, notify that carrier and/or CSP if:

- where the arrangement is with a carrier, and that carrier's network is used to supply carriage services to end-users that may be affected by the outage; or
- where the arrangement is with a CSP, and the end-users of carriage services supplied by the CSP may be affected by the outage.

The notification must include the information in subsection 13(1).

Section 9 Requirement to communicate with the public

This section sets out the minimum requirements for a carrier to communicate with the public as soon as practicable after it detects, or receives a notification about, an outage. The carrier must communicate with the public the information set out in subsection 13(1) using both the carrier's website, and either the carrier's primary social media account or one or more types of 'other media' (as defined in section 5). Section 9, and other sections of the Standard require a carrier to make information available on their website. In practice, this means the carrier will need to ensure that their websites are available to the public during a major outage, for example by having backup hosting arrangements in place to ensure that the website is available even if normal hosting arrangements are impacted by the outage.

Section 10 Requirement to communicate with relevant stakeholders

This section requires a responsible carrier to communicate the information in subsection 13(1) to relevant stakeholders as soon as practicable after it detects a major outage. See section 5 for definition of 'relevant stakeholders'. The responsible carrier must also keep stakeholders updated about the outage (at the times specified in subsection 14(3)), and notify them of the restoration of services or rectification of the outage.

Subdivision 1.2 Carriage service providers

Section 11 Application

This section provides that Subdivision 1.2 applies to a CSP that has received a notification about a major outage under section 8.

Section 12 Requirement to notify and communicate with end-users and the public

This section requires that, as soon as practicable after receiving the notification about the major outage from a carrier, a CSP must attempt to notify each of its end-users affected or likely to be affected by the major outage, and communicate with the public about the major outage. The communication and notification must include the information in subsections 13(1) and (2).

Section 12 also requires a CSP to make information available on their website. In practice, this means the CSP will need to ensure that their websites are available to the public during a major outage, for example by having backup hosting arrangements in place to ensure that the website is available even if normal hosting arrangements are impacted by the outage.

Paragraph 12(1)(a) (together with its references to subsections (2) and (5)) requires that the notification to each end-user affected or likely to be affected by the major outage, must be in an easily accessible form, and must be provided using at least one of the following methods of communication:

(a) an application that the carriage service provider makes available to its end-users to subscribe to, which relates to the carriage service it provides to the end-user;
(b) email; or
(c) SMS.

Paragraph 12(1)(b) (together with its reference to subsection (3)) requires the CSP to communicate information to the public about the major outage using a minimum of three communication channels including both the CSP's website and call centres, and either the CSP's primary social media account or one or more types of other media (as defined in section 5). In regard to call centres, it is not expected that a CSP will make outbound calls to inform customers during an outage, but that callers seeking information will be provided with relevant and up-to-date information by the CSP through a call centre. Any communication made under paragraph 12(1)(b) must be in an easily accessible form, and the CSP must take reasonable steps to select the channel of communication that it considers is the most likely to reach the public, based on the CSP's understanding of the major outage (see subsection 12(4)).

Subsection 12(5) provides that if the CSP supplies a carriage service to a person that is not an individual (referred to as the relevant customer in the provision) - for example, a government entity or enterprise customer that obtains carriage services for its staff - the relevant customer is taken to be the end-user for the purposes of the obligation in paragraph 12(1)(a). This means that the CSP need only attempt to notify the relevant customer. Using the same example, the CSP could notify the government or enterprise entity account holder, rather than each of the entity's staff.

Subdivision 1.3 Contents and timing of notifications, communications and updates

Section 13 Contents of a notification or communication

Section 13 sets out minimum content requirements for any notification or communication by a carrier or CSP under Subdivision 1.1 or 1.2 of the Standard.

Subsection 13(1) lists the type of information to be included in the notification or communication and stipulates that a carrier or CSP must include as much of that information about the major outage as is available to them at the time of notifying or communicating. This takes account of the fact that some of the prescribed information under 13(1) may not be available at the time of notification or communication. The information specified in subsection 13(1) is information about the:

(a) scale or suspected scale of the major outage;
(b) the cause or likely cause of the major outage – unless the carrier or CSP has reasonable grounds to believe that disclosing this information could compromise its telecommunications network security or national security;
(c) the geographic areas impacted or likely to be impacted by the major outage;
(d) the types of carriage services impacted or likely to be impacted by the major outage;
(e) the estimated timeframes for updates in relation to the major outage (section 14 deals with the requirements to provide updates); and
(f) the estimated timeframe for rectification of the major outage.

Subsection 13(2) requires a CSP to provide details about how end-users can obtain additional information or assistance during the major outage. Paragraph 13(2)(c) provides that, where available, the notification or communication must include details about easily accessible contact channels for use by an end-user who requires urgent assistance during the major outage, using real-time or near-real time communications (section 16 deals with requirements to provide real-time or near real-time communications). Customers requiring urgent assistance in the context of this Standard can include Priority Customers, as defined in Industry Code C609:2007 Priority Assistance for Life Threatening Medical Conditions.

Section 14 Requirement to provide regular updates – carriers and carriage service providers

This section applies to communications with other carrier, CSPs, end-users and the public following the initial communication or notification by a carrier or CSP under section 8, subsection 9(1), and paragraphs 12(1)(a) and 12(1)(b). The section imposes requirements on carriers and CSPs following the initial notification or communication to provide regular updates to other carriers, CSPs, end-users and the public throughout the major outage, and stipulates the timing for updates.

If there is a material change, the carrier or CSP must provide an update to:

(a) in the case of a carrier – carriers or CSPs notified under section 8, and the public; or
(b) in the case of a CSP – the end-user and the public.

If there is no material change to any information specified in subsection 13(1), an update must be sent by the carrier or CSP to the persons listed in (a) and (b) above, noting that there has been no change, as frequently as is it considers necessary and at the least:

- once every six hours within the first 24 hours of the outage; and
- after these first 24 hours, once during each subsequent 24-hour period, until the major outage is rectified.

Subsection 14(4) requires that the updates be made or sent in the same manner as the previous notification or communication provided to the person.

Section 15 Requirement to notify rectification of major outage – carriers and carriage service providers

Section 15 imposes requirements on carriers and carriage service providers to notify other carriers and CSPs, end-users, and the public, regarding the restoration of all services affected by a major outage or the rectification of a major outage.

The notification or communication of the restoration or rectification must occur as soon as practicable after the carrier or carriage service provider becomes aware that services affected by the major outage have been restored or the major outage has been rectified.

Subsection 15(3) provides that a notification or communication provided to a person under subsection 15(2) must be provided in the same manner as a notification or communication previously provided under section 8, 9 or 12 to the person.

Division 2 Real-time or near real-time assistance

Section 16 Requirement to provide real-time or near real-time assistance – carriage service provider

This section sets requirements to provide real-time or near real-time assistance to end users during major outages.

Subsection 16(1) requires a CSP who is required to comply with section 12, to, as far as is reasonably practicable, make available to its end-users one or more contact methods to enable the end-user to seek assistance from the CSP using real-time or near real-time communications.

Subsection 16(2) notes that a contact method for real-time communications may include a phone number; and a contact method for near real-time communications may include live chat.

Subsection 16(3) provides that the CSP must ensure that any contact method used to comply with subsection 16(1) is easily accessible, resourced adequately (for example, in the case of a call-centre), capable of responding immediately to requests for urgent assistance from end-users, and does not use artificial intelligence. Artificial intelligence takes its ordinary meaning. The Macquarie Dictionary defines ‘artificial intelligence’ as the ability of a computer or other device or application to function as if possessing human intelligence and the branch of computer science which deals with the design and use of machines that have this ability. Requests for urgent assistance may include requests from customers supplied with Priority Assistance services under Industry Code C609:2007 Priority Assistance for Life Threatening Medical Conditions.

Division 3 Exemption

Section 17 Major outage during natural disasters

This section deals with cases where the sole or predominant cause of the major outage is a natural disaster.

Natural disaster is a defined term that is intended to cover situations where the nature of the emergency event is such that multiple agencies, which may include emergency services, government agencies and essential service providers, are involved in responding to the affected community.

Subsection 17(2) provides that a carrier (other than the responsible carrier) or a carriage service provider is not required to comply with any of the requirements in Divisions 1 or 2 in relation to the major outage.

Subsection 17(3) provides that the responsible carrier is only required to comply with subsection (4) in relation to the major outage.

Subsection 17(4) provides that the responsible carrier must, as soon as is practicable after the carrier detects the major outage, publish as much of the information in subsection 13(1) as the carrier has available, on its website.

Part 3 – Written procedures for communicating during a major outage

Section 18 Written procedures regarding communications during major outages – carriers

Section 18 imposes obligations on carriers who own a telecommunications network that is used to supply carriage services to an end-user to have written procedures in place on communicating major outages with the public, other carriers, carriage service providers and relevant stakeholders during a major outage. The carrier is required to publish these written procedures on the carrier's website, and they must be in an easily accessible form. The carrier must comply with the written procedures if there is a major outage, except to the extent that the procedures are inconsistent with the requirements in Part 2, in which case, those requirements prevail.

Section 19 Written procedures regarding communications during major outages – carriage service providers

Section 19 requires CSPs that supply carriage services to end-users to have written procedures in place that outline how they will communicate with end-users and the public during a major outage, including how they will manage real time and near real time communications with end-users who require urgent assistance during the major outage. The CSP is required to publish these written procedures on its website in an easily accessible form. The CSP must comply with the written procedures if there is a major outage, except to the extent that the procedures are inconsistent with the requirements in Part 2, in which case, those requirements prevail.

Attachment B

Statement of compatibility with human rights

Prepared by the Australian Communications and Media Authority under subsection 9(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011*

Telecommunications (Customer Communications for Outages) Industry Standard 2024

Subsection 9(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* requires the rule-maker in relation to a legislative instrument to which section 42 (disallowance) of the *Legislation Act 2003* applies to cause a statement of compatibility with human rights to be prepared in respect of that legislative instrument.

The statement of compatibility set out below has been prepared to meet that requirement.

Overview of the Standard

The *Telecommunications (Customer Communications for Outages) Industry Standard 2024* (the **Standard**) has been made under subsection 125AA(1) of the *Telecommunications Act 1997.* It is drafted to meet the requirements and objectives in subsection 5(1) and section 6 of the *Telecommunications (Customer Communications for Outages Industry Standards) Direction 2024* (the **Direction**). In broad terms, those requirements and objectives are to ensure, during a major outage, that carriers and carriage service providers (**CSPs**) communicate and notify certain persons in a timely manner and continue to provide up-to-date information to those persons in relation to the major outage.

The Standard applies to carriers and CSPs in the event of a major outage, and imposes minimum content requirements for communications and notifications to other affected carriers and CSPs, end-users, relevant stakeholders and the public. The Standard also requires that the forms of communicating, notifying or informing to the public and end-users are in an easily accessible form, including for persons with a disability, from a culturally or linguistically diverse background, or with other special needs.

Human rights implications

The ACMA has assessed whether the Standard is compatible with human rights, being the rights and freedoms recognised or declared by the international instruments listed in subsection 3(1) of the *Human Rights (Parliamentary Scrutiny) Act 2011* as they apply to Australia.

Having considered the likely impact of the Standard and the nature of the applicable rights and freedoms, the ACMA has formed the view that the Standard engages the following rights or freedoms:

- The right to freedom of expression in Article 19(2) of the *International Covenant on Civil and Political Rights* (**ICCPR**), which states:

  2. Everyone shall have the right to freedom of expression; this right shall include freedom to seek, receive and impart information and ideas of all kinds, regardless of frontiers, either orally, in writing or in print, in the form of art, or through any other media of his choice.

- The following rights for persons with disabilities under the *Convention on the Rights of Persons with Disabilitie*s (the **CRPD**):

  - *to access, on an equal basis with others, information and communications (Article 9); and*
  - *the right to freedom of expression and opinion, including the freedom to seek, receive and impart information and ideas on an equal basis with others and through all forms of communication of their choice (Article 21).*

Right to freedom of expression

The ACMA considers that the Standard engages the right to freedom of expression, in so far as that right includes the right of certain classes of persons, such as end-users of telecommunications services and the public to receive information relating to major outages.

Parts 2 and 3 of the Standard impose requirements on carriers and CSPs to provide information in a number of forms to certain persons including end-users and the public. For example, Division 1 of Part 2 of the Standard requires carriers that detect a major outage on their network, or have been notified of a major outage that affects their network, to communicate certain information about the outage with the public. Subdivision 1.2 of Part 2 of the Standard requires CSPs who have been notified of a major outage affecting the carriage service they provide to end-users, to notify those end-users and the public about the major outage. Part 3 requires carriers and CSPs to maintain and publish their procedures for communicating information about major outages, including with the public and end-users.

The obligations in Parts 2 and 3 of the Standard are intended to aid and inform end-users and the public in cases where there is a major outage that affects a telecommunications network. The information is intended to enable end-users to better understand the impact of a major outage and provide those end-users with communication options that might better allow those affected end-users to make alternative arrangements in their personal and professional lives during or following a major outage.

The ACMA considers that Parts 2 and 3 of the Standard afford protections to end-users and the public and are directed at promoting the rights of persons to receive information about the nature and scale of an outage that affects their services. Accordingly, the ACMA considers that the Standard does not cause any limitation or interference with the right to freedom of expression.

Rights for persons with disabilities

A number of provisions in the Standard positively engage and support the rights of people with disabilities (among others) to receive information on an equal basis with others, through the forms of communication delivered to them consistent with Articles 9 and 21 of the CRPD.

For example, section 9 and subsections 12(2) and 12(3) of the Standard contain requirements for communications and notifications of information to be in an easily accessible form, which is defined in the Standard as a form of communicating, notifying or informing that is easy to understand and accessible, including to a person with a disability. Similar requirements are imposed with respect to providing regular updates to the public and end-users, and to any information about communication processes made available on a CSP's website.

Further, section 16 requires CSPs, where practicable, to provide alternative and easily accessible contact channels that enable end-users to contact the CSP using real-time and near-real time communications if they require urgent assistance during a major outage.

Conclusion

The Standard is compatible with human rights including the right to freedom of expression and rights for persons with disabilities. These rights are positively engaged by providing consumer protections and safeguards through requirements on CSPs and carriers to make information available about major outages to consumers and the public on an equal basis.

Australian Government | acma Australian Communications and Media Authority

Attachment C

Improving telco communications to stakeholders during outages

Impact analysis

NOVEMBER 2024

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Executive Summary

The Optus outage of 8 November 2023 exposed the importance of customer communication during and in relation to outages. The outage had a significant impact on a wide range of Australians, affecting emergency services, government services, businesses and vulnerable people. Customers experienced delays in receiving advice or a detailed explanation about the cause and impact of the outage, or timeframes for rectification.

The need for policy intervention arises as incentives (including maintaining a good relationship with their customers) have not proved strong enough for industry to deliver on the reasonable expectations of consumers to be kept informed during telco outages. Under the current regulatory framework there are no mandatory requirements for the way in which telecommunications providers communicate with customers in relation to outages.

The Government's final report into the Review of the Optus Outage published on 30 April 2024 (the Review) found that communication by Optus with its customers during and in relation to the outage was inadequate, noting specifically a lack of timely and clear information which caused considerable distress. The Review recommended that the Australian Communications and Media Authority (ACMA) develop a standard or determination requiring carriers to communicate specific information to customers during outages – including an explicit focus on communications between the affected network provider and its customers as well as other stakeholders (Recommendation 10).

On 21 August 2024, the ACMA was directed[1] by the Minister for Communications to determine a standard under the *Telecommunications Act 1997* (**Telco Act**) in response to Recommendation 10 of the Review. The Standard is to impose obligations on carriers and Carriage Service Providers (**CSP**s) to communicate certain information to end-users relating to both major outages and signification local outages that impact a telecommunications network used to supply carriage services to end-users. The obligations in relation to 'major outages' is to be determined by 14 November 2024 and commence in full by 31 December 2024. The ACMA must also make an Industry Standard in relation to 'significant local outages' to be determined by 30 April 2025 and commence in full by 30 June 2025.

The objective of the Minister's Direction is that communications with end-users during or in relation to a major outage or significant local outages will be timely, up-to-date, and accessible through a mix of public and direct communications channels; consumers will be able to contact their provider in real-time or near real-time; carriers will share outage information, and telcos will be transparent about their communications processes.

On 17 September 2024 the ACMA published a draft proposed Standard in line with the Direction inviting feedback from stakeholders by 20 October 2024. The ACMA received 22 submissions from stakeholders to the consultation. Feedback ranged from the need to refine the definitions of the different outages and concerns about the notification requirements during outages, to concerns about the draft proposed Standard excluding outages caused by natural disasters. All submissions were duly considered and informed decisions on refining the draft Standard.

This impact analysis considers four separate options to address the policy problem:

1. Status Quo – industry self-regulation
2. Direct Regulation – impose a Standard
3. Direction Regulation – Determination
4. Co-regulation – develop a code of practice.

Based on the analysis outlined further in this Impact Analysis, the recommended outcome is that **Option 2** be implemented, which is in line with the Minister's Direction. While primarily the ACMA is

[1] Federal Register of Legislation - Telecommunications (Customer Communications for Outages Industry Standards) Direction 2024 – accessed 30/10/2024.

bound to comply with the Minister's Direction, this recommendation is based also on the overall net benefit calculation as compared to Option 1, Option 3 and Option 4.

Introduction

At around 4:05am AEDT on 8 November 2023, the Optus network suffered a major outage affecting fixed-line and mobile services nation-wide. Services were restored gradually from approximately 10:40am, with the majority of services restored by 4pm that day.[2]

The Optus outage had a significant impact on a wide range of Australians, affecting emergency services, government services, businesses and individuals, including those experiencing vulnerability.

The Optus outage exposed the importance of customer communication during and in relation to outages. In particular, customers experienced delays in receiving advice or a detailed explanation about the cause and impact of the outage, or timeframes for rectification. Customers' dissatisfaction with Optus' communications and messaging during the outage was widely reported in the media and conveyed in submissions to the Review into the Optus Outage of 8 November 20223 – Final Report, undertaken by Mr Richard Bean (Optus Outage Review) and in correspondence to the government.

Australians rely heavily on telecommunications services for health and safety, work, business activities, education and social interaction. The disruption that an unplanned outage (hereafter outage) brings to people's lives is understandably frustrating at best, and harmful at worst.

The causes and responses to the actual outage are being considered through other processes. The issue for consideration here is the communications about the outage by Optus to its customers and those of its resellers. There is a strong and reasonable demand for service providers to communicate with customers in a timely manner about outages. This enables consumers to make alternative arrangements should they need to and helps alleviate the uncertainty that develops without this information.

There are currently no mandatory requirements for the way in which telecommunications providers communicate with customers in relation to outages. Industry Guideline - Emergency Communications Protocol (G663:2022) provides flexibility for individual providers to determine the level and methods of engagement, the timing and the types of information they communicate with customers and the public. The Guideline is not enforceable and currently, each provider has its own approach to communications during outages.

On 9 November 2023 the Australian Government announced that it would undertake a post-incident review into the outage. The Optus Outage Review recommended that the ACMA develop a standard or determination requiring carriers to communicate specific information to customers during and about outages – including an explicit focus on communications between the affected network provider and its customers as well as other stakeholders (Recommendation 10).

On 21 August 2024, the ACMA was directed by the Minister for Communications to determine a standard under subsection 125AA (1) of the Telco Act that deals with information to be provided or made available by carriers and CSPs relating to major outages, and significant local outages, that impact a telecommunications network used to supply carriage services to end-users. The Standard in relation to major outages is to be determined by 14 November 2024 and commence in full no later than 31 December 2024. The Standard

[2] https://www.aph.gov.au/DocumentStore.ashx?id=2ed95079-023d-49d5-87fd-d9029740629b&subId=750333, accessed 21 August 2024.

in relation to significant local outages is to be determined by 30 April 2025 and commence in full no later than 30 June 2025.

What is the policy problem?

The November 2023 Optus outage and its impacts

At around 4:05am AEDT on 8 November 2023, the Optus network suffered a major outage affecting fixed-line and mobile services nation-wide. Services were restored gradually from approximately 10:40am, with the majority of services restored by 4pm that day.[3]

Optus is the second largest telco provider in Australia, delivering more than 10 million services across a range of telecommunications products and services, including mobile and fixed-line telephony and internet services to consumers and enterprises. The outage had major impacts, disrupting Optus fixed-line and mobile services, and preventing some end-users from accessing Triple Zero.

Aside from media coverage and information gleaned from the Review and from the Senate Standing Committee on Environment and Communications References Committee into the Optus Outage, the impact specific to each stakeholder cohort has been difficult to quantify. This is due to a lack of available data from the telecommunication industry or the business sector in relation to the impact of outages, the number of outages caused annually and the types and causal nature of the different outages around Australia.

Based on available data and information reported widely, the outage impacted a wide range of Australians, affecting emergency services, government services, and individuals, including those experiencing vulnerability. For individuals, some will experience minimal inconvenience and others significant. For example, an individual that is reliant on a telecommunications connection to work from home may experience significant impact and inconvenience, which will have a cost. The same applies to small business, government and large enterprise customers of telecommunications services – the impacts will vary from minimal, through to the inability to deliver some or all services or products that the business provides,

The outage also affected businesses that rely on Optus for telecommunications services. Three of Australia's largest banks were unable to make or receive calls from their call centres and their customers were unable to receive transaction verification text messages. Train services in Melbourne were severely delayed, and some important services such as hospitals were unable to make or receive calls. Many other large and small businesses were unable to process transactions because EFTPOS machines that used Optus SIM cards were offline. Customers of Optus' resellers such as Amaysim and Dodo were also impacted as they rely on the Optus network for their customers' own communications.[4]

The Telecommunications Industry Ombudsman's (TIO) submission to the Senate Standing Committee on Environment and Communications References Committee into the Optus Outage advised that, as of 14 November 2023, it was experiencing a 30% increase in contacts to its office above usual volumes as a result of the outage. By the end of 2023, the TIO had received 919 complaints from consumers who were impacted by the Optus Outage, with 20 percent of those from small businesses. Harms consumers reported to the TIO included being unable to:

- work due to the lack of internet and phone connection
- make sales or otherwise operate their small business

[3] https://www.aph.gov.au/DocumentStore.ashx?id=2ed95079-023d-49d5-87fd-d9029740629b&subId=750333, accessed 21 August 2024.

[4] https://web.archive.org/web/20231108030028/https:/www.afr.com/technology/chaos-as-optus-crashes-nationwide-20231108-p5eid1, and https://www.abc.net.au/news/2023-11-09/how-the-optus-outage-played-out/103079768, accessed 21 August 2024

- pay for food, bills and other essentials
- attend, make or reschedule medical or other appointments
- contact friends, family and support services
- study for exams or assignments at school or university
- get information or a response from Optus about the outage and when it would be resolved.

Most consumers sought outcomes including credits, a refunded or discounted service, financial compensation, exiting a contract early, or apologies from the telco.[5]

Optus' communications about the outage

There was widespread confusion and frustration amongst Optus customers as the outage progressed, with only limited information being made available about the cause of the outage and its expected resolution. Being unable to contact the company via the usual means, many customers resorted to gathering at Optus stores.

Optus did undertake some communications activities, including media statements, interviews and social media posts. However, the Optus Outage Review found this to be inadequate. The Review received submissions from personal and business customers expressing their dissatisfaction with Optus' handling of communications about the outage. A large number of letters and emails were also sent to the Minister for Communications by members of the public, universally expressing dissatisfaction with communications from Optus.[6]

There was also widespread media coverage raising concerns about the lack of communication by Optus of the cause of the outage, its impact and rectification timeframes. This included confused communications from Optus in regard to the ability to access Triple Zero services during the outage.

Optus did not follow the voluntary industry guideline or other existing protocols outlined below about communications with stakeholders during the outage.

Existing arrangements

The key instrument that currently details how telecommunications providers should communicate with stakeholders in the event of a major outage is the Communications Alliance Emergency Communications Protocol – Industry Guideline G663:2022 (the **Guideline**).[7]

The Guideline identifies that the relevant stakeholders are consumers, the emergency call person (Telstra for 000/112), emergency service organisations, Government, regulatory bodies, telecommunications dependencies (e.g. utilities and data centre providers) and telecommunications suppliers, and industry bodies. When a carrier or carriage service provider (**CSP**) becomes aware of a major disruption, it determines the most suitable mechanism for relaying information to stakeholders, based on a severity matrix included in the Guideline.

[5] https://www.aph.gov.au/DocumentStore.ashx?id=bb403a80-115f-44d6-818a-5900073c38f4&subId=750366 and https://www.tio.com.au/sites/default/files/2024-02/Data%20Insights%20Q2%202023-24.pdf, accessed 21 August 2024

[6] https://www.infrastructure.gov.au/sites/default/files/documents/review_into_the_optus_outage_of_8_november.pdf, accessed 21 August 2024.

[7] Communications Alliance - G663:2022 Telecommunications – Emergency Communications Protocol (commsalliance.com.au), accessed 27 August 2024.

Importantly, the Guideline states that above all a provider's priority lies with restoring and maintaining communications capabilities of its customers to the best of its abilities. The Guideline notes that, where appropriate, the public will be informed about how to obtain further information on the impacts of an outage. This may be via a variety of radio networks, emergency warnings from broadcasters and via public media announcements, stakeholder websites and social media channels. The parties are expected to work together to ensure information communicated to the public is clear and promotes community confidence in the telecommunications sector.

The Guideline is limited, and compliance is voluntary. It therefore operates entirely at the providers' discretion.

The three main carriers (Optus, Telstra and TPG Telecom) also support the Triple Zero Disruption Protocols (TZDPs). The TZDPs were developed after a disruption to the Telstra network on 3 and 4 May 2018 resulted in some Triple Zero calls not being successfully carried to the Emergency Call Person (Telstra) or Emergency Service Organisations (police, fire, ambulance).

The TZDPs are 'endorsed' by carriers, the Australian Government (DITRDCA and ACMA) and ESOs through arrangements under DITRDCA's Triple Zero Coordination Committee (TZCC). The TZDP's include pre-scripted media messaging that can be used by carriers and CSPs during a disruption to services. The TZDPs pre-scripted media messaging was not utilised during the Optus outage, nor were arrangements that would enable any CSP to convene a partner bridge teleconference that would allow the impacted CSP to update participants in the eco-system including the ECP, ESOs and other CSPs.

Areas for improvement and change

The Final Report of the Department's Review into the Optus Outage was published on 30 April 2024. It found that communication during the Optus outage was inadequate, stating:

Consumer advocates assert the need for clear communication guidelines, or indeed enforceable rules, for telecommunications providers to follow in response to unplanned outages. They consider Optus' communications with its customers during the outage were not adequate, with the lack of timely and clear information causing considerable distress. They have also noted that when an outage like this occurs, it has a greater impact on the more vulnerable members of our communities who already face challenges in accessing communications services, including those living with disabilities or on lower incomes, as well as those living in regional, rural or remote areas.

The communication failure demonstrated during the Optus outage supports the need for more clearly defined and enforceable obligations on the telecommunications industry.

Why is government action needed?

Customers' dissatisfaction with Optus' messaging during the outage highlighted a disparity between community sentiments about the importance of customer communications during outages and the priority that telcos place on those communications.

The Final Report of the Department's Review noted:

> *There are currently no set requirements for the way in which service providers communicate with their customers. Each provider has its own approach. Competitive pressures alone do not appear to be improving consumer communications and consumer outcomes through the course of recent crises.*
>
> *The combination of the delays in advising customers, the lack of detailed answers and explanations as to the cause and impact of the outage across the day and the absence of timeframes regarding its rectification, call into question the adequacy of the current voluntary communication guidance.*
>
> *In response, mandatory communication requirements should be established requiring providers to take specified steps during major outages.*[8]

Part of the underlying problem of the existing guidelines being largely ineffective can be attributed to the lack of communication among industry during the outage. The Department's Review identified that Optus and Telstra each held information about what was occurring as the outage unfolded on the day, however neither entity had full visibility of the scale and nature of the outage. Optus had the capacity to initiate a partner bridge (a requirement set out in the TZDPs) to discuss the outage with other carriers, emergency service organisations and the emergency call person, but this did not occur (likely because Optus staff did not necessarily have alternative telecommunications services they could use).

The report concludes that this failure to communicate between carriers and CSPs 'significantly hampered the dissemination of accurate and timely advice to the community'.

It is unclear from the Government's Review why this did not occur and whether there were any systemic constraints on communications at play (such as skills and available resources).

It is possible (and indeed likely given the commercial incentive to maintain a good relationship with consumers) that based on hindsight CSPs have put in place additional communications methods following such a large-scale outage. However, evidence suggests there is minimal likelihood that any additional measures would be followed in the future. Available ACMA data indicates that on average, one major network outage will occur annually in Australia.[9] In the past, these outages have prompted the development of Protocols and Guidelines to enable better communications among the telecommunications community to aid the management of the outages. For example, the TZDPs were developed following the Telstra outage of 4 and 26 May 2018.[10] Despite these efforts, the protocol was not followed by Optus during the November 2023 outage.

[8] https://www.infrastructure.gov.au/sites/default/files/documents/review_into_the_optus_outage_of_8_november.pdf, accessed 21 August 2024

[9] See Attachment 1

[10] Investigation Report into the Triple Zero Service disruptions of 4 & 26 May 2018

The objective of government action as is stipulated in the Direction is to place clear obligations on carriers and CSPs to prioritise customer communications during outages and to ensure that:

- communication with end-users in relation to outages will:
    - be timely and up-to-date
    - accessible and made through a mix of public and direct communication channels
    - identify, as appropriate, methods for end-users to seek a real-time or near real-time update or assistance
    - inform end-users and the public about the status, scale, cause, and estimated timing for rectification of the outage
    - provide prompt notification when services are restored.
- carriers and CSPs share information about outages with each other and relevant stakeholders to enable effective communication with end-users affected by the outage.
- carriers and CSPs make information about their process for communicating about outages publicly available and easily accessible.[11]

Potential barriers and risks associated with government intervention to achieve the stated objectives are expected to be moderate. The telecommunications sector may be concerned about additional regulatory responsibilities noting that the notifications requirements imposed in the proposed regulation may require significant additional costs or changes to systems. This risk however is mitigated by the fact telcos are already capable of communicating with customers and the general public through various established channels. The industry will be able to use some of these same channels to meet the new requirements.

Success will be measured by the following:

- Carriers and CSPs having written procedures in place, and available on their website, which outline how they will communicate with end-users, the public, other carriers and CSPs during major or significant local outages.
- Carriers and CSPs complying with their written procedures and the requirements of the Industry Standard.
- Feedback from end-users, consumer groups and community organisations that consumers have been notified of outages as required.
- Reduced complaints to the TIO from customers of telcos that have experienced an outage.

[11] https://www.legislation.gov.au/F2024L01060/asmade/text, accessed 27 August 2024.

What policy options are you considering?

The following four options have been considered based on the options available to the ACMA to undertake regulatory intervention with existing powers.

Option 1 – Status quo

Under this option the government retains the status quo, refraining from introducing new regulation and relying on the current Guideline.

This means that carriers and CSPs would continue to use their own discretion to determine the severity of an outage and, based on that assessment, to decide what information to provide their customers, when to provide it, and by what mechanism. Customers of different telcos would experience different levels of interaction depending on how each telco applies the principles of the Guideline to the circumstances of the outage. While these differences are not inherently problematic, the adequacy and timeliness of the interactions and communication may vary and, in some cases, be inadequate.

No compliance requirements or enforcement options would apply. It is not possible for the ACMA to take action for non-compliance of an Industry Guideline, no matter how significant.

Under this option the distress experienced by Optus customers during the November 2023 outage caused by inadequate messaging may recur in the event of future network outages. The TIO's resources may also be stretched by a spike in complaints from dissatisfied telco customers who may be more likely to complain due to a lack of clear and timely information about an outage.

The ACMA *must* determine an industry standard if directed by the Minister. Retaining the status quo is therefore not a live option.

Option 2 – Direct regulation (Industry Standard)

The final report of the Department's Review made 18 recommendations to address structural issues within the broader telecommunications ecosystem highlighted by the Optus outage. Notably, recommendation 10 states:

> *The ACMA should develop a standard or determination requiring carriers to communicate specific information to customers during and about outages. The Communications Alliance Emergency Communications Protocol – Industry Guideline G663:2022 or one or more of the carriers' existing internal communications protocols could be used as a base but there needs to be an explicit focus on communications between the affected network provider and its customers as well as other stakeholders.*[12]

The Government accepted all 18 recommendations in its response, stating in response to recommendation 10:

> *The Government acknowledges the public's considerable dissatisfaction with Optus' communications on the day of the outage. The strong reliance on communications services for health and safety, work, business activities, and education. The disruption an outage brings to people's lives is understandably frustrating and there is a strong, and*

[12]https://www.infrastructure.gov.au/sites/default/files/documents/review_into_the_optus_outage_of_8_november.pdf, accessed 27 August 2024.

reasonable demand for service providers to communicate with customers in a timely manner about outages. This enables consumers to make what alternative arrangements they can and helps alleviate the uncertainty that develops without this information.

The Government will direct the ACMA to develop an industry standard requiring telecommunications providers (carriers and carriage service providers) to communicate specific information to customers, during and about outages. The Government's expectation is that this standard should be in place within twelve months of commencement of drafting. [13]

Accordingly, on 21 August 2024, the Minister for Communications directed the ACMA to make an industry standard under subsection 125AA (4) of the Telco Act that deals with information to be provided, or made available, by carriers and carriage service providers relating to major outages that impact a telecommunications network used to supply carriage services to end-users (the **Direction**).[14]

The ACMA *must* determine an industry standard if directed by the Minister. The other three options are therefore not live options.

Implementing the Direction

The Direction provides the legal authority to make a new industry standard under section 125AA of the Telco Act.

An industry standard applies to participants in a particular section of the telecommunications industry; and deals with one or more matters relating to the telecommunications activities of those participants. The Direction specifies that the Standard is to apply to carriers and CSPs.

The Standard must require carriers and CSPs to ensure that communications with end-users during or in relation to a major outage or a significant local outage will be timely, up-to-date, and accessible through a mix of public and direct communication channels. The Standard must also identify methods for consumers to contact their provider in real-time or near real-time.

Outlined within the Direction are objectives the Standard must give effect to (clause 6(1)) and a range of matters that the Standard may include (clause 6(2)). To fulfill these objectives, rules addressing the matters in clause 6(2) are necessary. While the Direction's content in clause 6(2) is detailed, indicating an intention for rules, the ACMA retains some flexibility in drafting rules on various aspects, such as the:

- definition of any terms considered appropriate or necessary (such as major outage and significant local outage)
- frequency and channels of communications
- content of communications.

Supported by the findings of the Department's Review, there is a case for addressing gaps and deficiencies in the voluntary Guideline related to how CSPs and carriers engage with end-users during outages.

[13] https://www.infrastructure.gov.au/department/media/publications/australian-government-response-bean-review-final-report-review-optus-outage-8-november-2023-april, accessed 27 August 2024.
[14] https://www.legislation.gov.au/F2024L01060/asmade/text, accessed 27 August 2024.

The Telco Act contains mandatory consultation requirements including relating to the making of the Standard, which are set out in subsection 125AA (3) and sections 132, 133, 134 and 135 of the Telco Act. Before making the Standard, the ACMA must:

- publish a public notice in a newspaper circulating in each State and Territory (it is considered that publication in The Australian would satisfy this requirement)
- publicly consult for a period of at least 30 days after the publication of the notice.

consult with the Australian Competition and Consumer Commission, the TIO, the Information Commissioner, a body the ACMA is satisfied represents the telecommunications industry and at least one consumer body. These mandatory consultation processes were adhered to and based on feedback received (explored below under Question 5) the ACMA has chosen to focus the current proposed Standard on major outages (to be determined by 14 November 2024) and adopt the longer timeframe set out within the Direction to determine the Standard in relation to significant local outages (by 30 April 2025). As such, Option 2 is confined to the development of a Standard in relation to major outages only.

Option 3 – Direct regulation (amend the Emergency Call Service Determination)

Recommendation 10 from the Department's Review included the option for the ACMA to develop a determination requiring carriers to communicate specific information to customers during and about outages, instead of an Industry Standard.

Under section 147 of the Telecommunications (Consumer Protection and Service Standards) Act 1999 (the **TCPSS Act**), the ACMA must make a determination imposing requirements on any or all of carriers, CSPs and emergency call persons in relation to emergency call services. This Determination is the Telecommunications (Emergency Call Service) Determination 2019 (the **ECSD**).[15]

The ECSD currently includes the following definition of a *significant network outage*:

> *an unscheduled network failure that adversely affects the carriage of emergency calls over that network in a significant way, having regard to:*
>
> *(a) the number of customers impacted by the outage;*
> *(b) the likely amount of time it will take to restore carriage services disrupted by the outage; and*
> *(c) the availability of other carriage services that can be used by affected customers to make and receive calls.*

In the event of a significant network outage, the ECSD requires:

- carriers and CSPs to, as soon as possible after becoming aware of the outage, notify the emergency call persons and CSPs that utilise that network about the outage
- CSPs to conduct welfare checks on an end-user who made an unsuccessful emergency call during the outage using a service supplied by the CSP.

Under this option, the ACMA would achieve the objectives of government action by amending the ECSD to:

- more explicitly define a significant network outage or add new definitions to capture major outages

[15] https://www.legislation.gov.au/F2019L01509/latest/text

- add requirements to communicate with customers, including specifying the frequency and methods of communication
- expand requirements for carriers and CSPs to share information about outages with each other.

An amended ECSD could include substantially similar requirements as an Industry Standard. We note that, in accordance with section 147 of the TCPSS Act, requirements in the ECSD could only apply to outages that adversely affect the carriage of *emergency calls* over telecommunications networks. Requirements on CSPs and carriers can only be made in relation to the provision of the Emergency Call Service. Therefore, amending the Determination under section 147 of the TCPSS Act allows limited scope in defining the nature of outages and impacts on end-users, and is not fit-for-purpose. In comparison, an Industry Standard under section 125AA of the Act is less limited in scope because it is able to deal broadly with matters relating to telecommunications activities.

In any event, the ACMA *must* determine an industry standard if directed by the Minister. Amending the ECS Determination is therefore not a live option.

Option 4 – Co-regulation (Industry Code)

Under section 118 of the Act, the ACMA can request a body or association that represents a section of the telecommunications industry to develop an industry code that applies to participants in that section of the industry. The ACMA can make such a request if the development of the code is necessary or convenient in order to provide appropriate community safeguards or otherwise deal with the performance or conduct of participants in that section of the industry.

Under this option, the ACMA would request Communications Alliance to develop a code that places obligations on carriers and CSPs in relation to customer communications during major outages. The drafting of the code would be determined by Communications Alliance. While the ACMA can provide feedback on the draft code, it cannot dictate the wording of the clauses or definitions. This makes an industry code a less precise instrument for achieving the objectives of government action.

Development of an industry code can also be a slower process than other direct regulation options, as the Telco Act specifies that an industry body must have at least 120 days to develop the industry code. If the ACMA pursued this option now, an industry code may not be developed until March 2025 at the earliest. This would present a risk to the community that appropriate safeguards are not in place for consumers impacted by major outages.

Additionally, there are already existing protocols and guidelines developed by industry that deal with how telecommunications providers should communicate with stakeholders in the event of a major outage. As shown in the Department's Review, these protocols proved to be largely ineffective during the Optus outage.

We note that, unlike an industry guideline, once a provider has decided to participate in developing an industry code and it is registered by the ACMA, the, industry code is enforceable. However, breaches of an industry code require the ACMA to direct a carrier or CSP to comply with the code and identify further non-compliance before it can access the full range of its stronger enforcement actions.

As part of the development of the Ministerial Direction, the ACMA understands that the DITRDCA considered industry self-regulation options, but determined they provided insufficient safeguards for consumers during outages. This was specifically demonstrated within the Review which pointed to the need for provisions that can immediately come into

effect to promote compliance that provides assurance of end user access to information about outages.

Given the immediacy of action required, with the Minister's direction stipulating a Standard be determined by 14 November, amending the Code is not the preferred option.

The ACMA *must* determine an industry standard if directed by the Minister. Co-regulation is therefore not a live option.

International experience

In examining the regulatory landscape surrounding customer communications during outages within the telecommunications sector, the ACMA investigated measures adopted by other countries and sectors to address similar challenges.

Canada adopts an Emergency Network Outage Communications Protocol which deals with mandatory reporting and notification of outages to the Canadian Radio-Television and Telecommunications Commission (CRTC). The Protocol forms part of a MOU (Memorandum of Understanding on Telecommunications Reliability)[16] entered into by 12 Canadian telcos in September 2022 following a major outage by Canadian telco, Rogers, in July 2022. As part of the MOU, telcos agreed to inform the public and governmental authorities about key network outage information in accordance with their respective action plans.

In February 2023, a public consultation was held[17] by the CRTC, which called for comment on the development of a regulatory framework to improve network reliability and resiliency and mandatory notification and reporting about major telecommunications service outages. Comments were sought on proposed requirements for carriers to report to CRTC and relevant authorities when a major outage is detected, however no rules have yet been made by CRTC.

The UK's regulatory framework, overseen by the UK regulator Ofcom, is set out under the Communications Act 2003. Under that Act, telco companies are subject to an overarching obligation to protect the security of the network or services they provide. This includes taking steps to ensure that the impact of any security incidents on customers is prevented.[18] In the UK framework security incidents includes any network outage. Ofcom has established numerical reporting thresholds for outages on fixed and mobile networks that require reporting for outages of 100,000 services offered to retail customers of one hour or more, or 10,000 services for eight hours or more. However, where an outage impacts access to emergency services, telcos must report outages impacting 1,000 or more customers for one hour or more, or an outage affecting 100,000 services for any duration. Considering the identified gaps in existing rules, the minister directed the ACMA on 21 August 2024 to make an industry standard requiring CSPs and carriers to communicate information to customers during and about major outages in a clear and timely manner.

[16] Memorandum of Understanding on Telecommunications Reliability accessed 31/10/2024.
[17] Consultation on notification and reporting about major telecom service outages | CRTC accessed 31/10/2024.
[18] Telecoms companies have 24 hours to report major security breaches or outages, says Ofcom accessed 31/10/2024.

What is the likely net benefit of each option?

The reform options that are set out in the previous section are summarised below, with the key differences to the regulatory framework highlighted. The impact of these differences has been examined to gauge the relative benefits and costs of each option.

In the previous section, four options were identified and have been considered.

Option 1 – Status Quo (base case)

Option 2 – Direct regulation (industry standard)

Option 3 – Direct regulation (amend the Emergency Call Service Determination)

Option 4 – Co-regulation (Industry Code)

Option 2

Option 2 is the implementation of the direction made by the Minister. The code would impose establishment and ongoing costs on the ACMA, and on both Carriers and Carriage Service Providers.

Option 3

Option 3 is similar to Option 2 in that it relates to direct regulation but focuses on the Emergency Call Service Determination (ECSD). As described in the previous section, this determination only relates to outages that affect emergency calls over telecommunications networks.

Following consultation with stakeholders, the ACMA considers that this option would have similar establishment costs to Option 2 but would have lower benefits. The lower benefits would arise from outages that impact data networks being excluded from the determination.

An amended ECSD could include substantially similar requirements as an Industry Standard. We note that, in accordance with section 147 of the TCPSS Act, requirements in the ECSD could only apply to outages that adversely affect the carriage of emergency calls over telecommunications networks. However, in practice this would capture almost all outages.

In comparison, an Industry Standard under section 125AA of the Act is less limited in scope because it is able to deal broadly with matters relating to telecommunications activities.

Option 4

As noted in the previous section, under Option 4, the ACMA would request the Communications Alliance to develop a code that places obligations on carriers and CSPs in relation to customer communications during major outages. Through this process the code would be developed by industry players, with Government only providing an advisory role during its development. Once a code is agreed by industry and proposed, the ACMA may choose not to register it.

This process has several implications:

The timeframe for developing the code would be significantly longer than implementing the direction made by the Minister. The timeframe for developing the code is estimated to be around six to twelve months.

Option 4 would involve higher development costs, as it would involve extensive negotiation between industry participants.

The final implementation approach for option 4 is largely unknown. It may be cheaper to implement but may not be effective in addressing the policy problem.

There is also a realistic chance that industry would propose a code that the Government does not consider is sufficient, and so does not endorse.

It is important to note that there are existing protocols and guidelines, developed by industry, that frame how telecommunications providers should communicate with stakeholders in the event of a major outage. However, the Departmental Review found these industry-led arrangements were ineffective during the Optus outage. For this reason, the ACMA considers that industry co-regulation has been attempted and has proven ineffective.

Summary of options considered qualitatively

The points made above are summarised in Table 1 below. A comparison of Options 2, 3 and 4 highlights that the costs are anticipated to be similar between these options, while the benefits are expected to be lower for Options 3 and 4 compared to Option 2. In addition, Option 3 does not fully address the policy problem identified, while Option 4 risks not addressing the problem (depending on the effectiveness of the proposed industry code). Further, Option 4 would delay the implementation of any reforms while the code is being developed.

Summary comparison of the costs and benefits of each reform option against option 2

Option	Description	Costs	Benefits	Comment
1	Status Quo (base case)	Reference case – so costs and benefits are $0		
2	Direct regulation (industry standard)	Costs are considered in detail below	Benefits are considered in detail below	
3	Direct regulation (amend the Emergency Call Service Determination)	Costs are anticipated to be similar to Option 2	Benefits would be lower than Option 2, as it would not affect data outages.	Does not fully address the policy problem, as it would not impact data outages.
4	Co-regulation (Industry Code)	Higher development costs. Implementation costs are unknown, but if the code is effective, then it is likely the substantive compliance costs would be similar to Option 2.	If the Co-regulation were fully effective, then the benefits would be similar to Option 2. Risk that the code proposed by industry does not address the policy problem – so the benefits are reduced.	Would delay the implementation of any changes.

Options considered quantitatively

As discussed above, Option 2 is considered quantitatively against Option 1 (the base case).

Option 1 – Status Quo (base case)

Option 2 – Direct regulation (industry standard)

Figure 1: The other reform options (Option 3 and Option 4) are not considered quantitatively as they are considered to be less suitable for the reasons set out above.

By assessing the quantifiable costs and benefits of reform Option 2 over a ten-year period, Option 2 is expected to be net beneficial. As the exact value of the benefits are not able to be estimated with precision, a range within low and high bounds was identified.

Table 2 summarises the comparison of the quantified costs and benefits for Option 2 relative to Option 1 (the status quo).

Table 2: Summary of expected benefits relative to the status quo[1]

	Option 2
Total costs (NPV)	$117,043,000
Low annual benefit estimate	$2,794,260
High annual benefit estimate	$54,288,480
Likelihood that the benefits outweigh the costs	79%

Based on 10-year analysis using a 7% discount and providing the results in 2024 values.

Details of the costs and benefits for each option are presented in the next sections.

Discussion of the economic impact of an outage to one provider

Figure 2: As noted earlier in this document, the impacts of outages on customers include an inability to:

- work due to the lack of internet and phone connection
- make sales or otherwise operate their small business – would include business to business interactions, such as wholesale supplies.
- pay for food, bills and other essentials
- attend, make or reschedule medical or other appointments
- contact friends, family and support services
- study for exams or assignments at school or university
- get information from the carriage service provider about the outage and when it would be resolved.

Estimating the economic loss arising from a network outage for a business is challenging. There are limited studies that have estimated the value of an outage in recent years as telecommunications have become more important for business functions.

Some of the studies that do estimate the value of lost telecoms connectivity are relatively old,[19] while others focus on the loss of turnover[20] rather than economic loss – which is needed for a cost benefit analysis.

The impact of a telecommunications outage is different from other utilities, such as electricity. The effect of an electricity outage is to all residents and businesses within a region, whereas a telecommunications outage may affect one household or business, but not a neighbouring one.

In contrast, the outage of a single network will impact some residential properties, some users and some businesses – but not others.

Estimate of the loss from the Optus outage

Following the Optus outage, a telecommunications academic made a high-level estimate of the outage having a total impact of $2 billion.[21] This estimate is based on the following inputs:

400,000 business customers

an average impact of $5,000 per business.

These inputs are multiplicative, so give $2 billion as the estimate of the impact on turnover. The economic loss would be a portion of the impact on turnover and could be estimated through the percentage of value added.

The $2 billion estimate can be sense checked against Australian Bureau of Statistics data[22] on total income for various industry sectors and industry value added.

While a broad range of industries would be impacted by a telecommunications outage, the industries that may be most heavily impacted would be:

Wholesale trade - particularly where it is reliant on business-to-business communications and/or rapid delivery

Retail trade – customer facing businesses

Information media and telecommunications

Professional, scientific and technical services.

This data is summarised in Table 3, both for the full year and an estimate of a single day (assuming all businesses operate five days a week only).

[19] Lyons S, Morgenroth E, Tol RSJ, *Estimating the value of lost telecoms connectivity* in Electronic Commerce Research and Applications. Volume 12, Issue 1, January–February 2013, Pages 40-51 https://www.sciencedirect.com/science/article/abs/pii/S1567422312000452

[20] https://blog.cspire.com/how-much-does-an-internet-outage-cost-your-business

[21] Associate Professor Mark Gregory, Submissions – Parliament of Australia (aph.gov.au)

[22] www.abs.gov.au/statistics/industry/industry-overview/australian-industry/latest-release#data-download

Table 3: Australian Bureau of Statistics data on Total income and Industry value added for selected industry sectors

Industry	Total income ($ millions)	Industry value added ($ millions)
Wholesale trade	$770,448	$102,976
Retail trade	$616,848	$117,479
Information media and telecommunications	$114,306	$46,023
Professional, scientific and technical services	$374,783	$184,220
Total	**$1,876,385**	**$450,698**
Per business day	$7,506	$1,803

The total income for these sectors in 2022-23 was $1.876 Trillion, with value added estimated at $451 million. Based on 250 business days per year[23] this would equate to $7.506 billion in turnover for the day. The estimate of $2 billion would imply that 27% of all businesses in these industries lost one day of trade, and potentially indicates that the estimate is high, but not by a gross margin.

However, the impact to the economy as a whole is quite complicated, as an outage of this kind would impact different businesses in different ways – some examples are shown in Table 4.

Table 4: Examples of different impacts of an outage

Impact on trade	Example	Outcome
Retail trade would be undertaken, and payment would be made later	A mechanic servicing your car may complete the job and seek payment later	No loss of trade, payment is delayed. Minimal lost time to chase payment later
Trade would be moved to another day	If your usual barber/hairdresser is unable to take payment, you may choose to delay your haircut to another day	No overall loss of trade. Business activity is shifted in time, but not lost
Trade is transferred to another business	If a petrol station is unable to take payment most customers will obtain petrol at the next service station that is not impacted	No economic loss to the economy, but some businesses lose while others win
Trade is reduced and not recovered later	If there are limited choices, a customer may go without a coffee rather than find an alternative. They may be unlikely to have additional coffee tomorrow	Loss to the economy

[23] 250 days is based on 52 weeks and 5 working days but excluding 10 public holidays.

Impact on trade	Example	Outcome
Service industry carries on work from alternative locations	Some service industries would be able to operate by encouraging staff to work from home, or any location with an operating telephone or internet service	Negligible loss

As the distribution of the impacts shown in Table 4 above are hard to determine, the total economic loss of an outage is also difficult to measure.

Wasted time for customers and business staff

One of the losses that is consistent across each of the impacts above is that there is some wasted time for customers and business staff under each outcome.

It is important to note that there will be a large distribution in the loss of time to staff and customers ranging from no loss at all to a large loss of time (e.g., travel to work and then find there is no internet could waste multiple hours). This lost time will occur to both direct customers of the telecommunications company experiencing the outage, and customers of affected businesses.

Reduction of loss

Figure 3: Improved information from Carriage Service Providers about an outage and when it would be resolved would allow customers to plan their day and identify “work arounds” and strategies that minimise the impacts, such as:

Find and relocate to a location with internet to work or study

Get cash out to make purchases

Use a backup form of communication to contact staff, customers, support services and family

Send staff home if no solution is available or advise them not to come in

Reschedule appointments, meetings and events that cannot be overcome.

Calculating the benefits of improved information about outages

Based on the impact of an outage in lost or wasted time and reduction of loss, a key benefit of an intervention that achieves the reform objectives is the reduction in wasted time for individuals impacted by the outage. Some will be direct customers of the affected telecommunications company while others will be employees of impacted businesses and their customers. The annual benefit can be estimated using the equations below:

Individuals

Number of impacted individuals (F)	X	Reduction in Lost time (C)	X	Value of Lost time (D)	X	# Outages per year (E)

Customers and employees of impacted businesses

Number of impacted businesses (A)	X	Number of customers and employees (B)	X	Reduction in Lost time (C)	X	Value of Lost time (D)	X	# Outages per year (E)

Identification of stakeholders and impacts

Figure 4: The following Government stakeholders were identified:

- ACMA develop and implement the reforms.

Figure 5:

Figure 6: The following industry stakeholders were identified:

- Carriers
- Carriage Service Providers
- Other industry (businesses potentially affected by outages)

Figure 7: Two stakeholder groups within the broader public were identified:

Members of the public on the effected network

- Broader public.

A collated summary costs and benefits arising from Option 2 for each stakeholder group is set out in Table 5.

Table 5: Collated summary of costs and benefits arising from Option 2 for each stakeholder group

	Costs	Benefits
Government (the ACMA)	Implement reforms Ongoing costs	Improved communications arrangements delivered to end-users Reputation of government
Carriers	Costs to prepare processes Implement protocols if outage occurs	
Carriage Service Providers	Costs to prepare processes Implement protocols if outage occurs	Level playing field due to standardised processes Improved customer satisfaction and confidence in the system
Other industry		

Costs		Benefits
Members of the public on the effected network		Minimise the costs of outages through "work arounds" and strategies that minimise the impacts
Broader public		

Description and valuation of costs

The costs to each of the stakeholder groups are considered in turn below. All costs identified are the marginal value over the base case (option 1).

Government (ACMA)

The costs to the ACMA are itemised in Table 6 and are based on similar reforms.

Table 6: Estimated costs to ACMA

Type	Value and timing	Descriptor
Estimated ACMA cost on communicating and educating the amendments	Yr. 1 $10,000 Yr. 2 onwards $5,000	Based on estimated ACMA staff time spent on communicating – expected greater cost than status quo in the first year the Standard is implemented.
ACMA cost on drafting and preparing the Industry Standard	Yr. 1 $180,000	Based on estimated ACMA staff time to draft and prepare the Standard.
Estimated ACMA compliance and enforcement cost	Yr. 1 $100,000 Yr. 2 onwards $100,000	Based on estimated ACMA staff time to be spent on Standard compliance monitoring and enforcement (estimated cost of conducting 2 investigations per year at a cost of $50,000 each).

Carriers

Through the consultation process, it was indicated that the three Carriers will need to undertake significant systems upgrades to move from monitoring systems to automated reporting.

It is estimated that the cost of this work will be around $5 million to $10 million per company – arising in year 1. There will be ongoing operating and maintenance costs, but these will be significantly lower.

A mid-point value of $7.5 million per company has been used in the analysis, with ongoing costs estimated to be around 10% of the establishment costs.

Carriage Service Providers

Most carriage service providers have processes in place for outages. This means that the impacts of the reforms (both costs and benefits) will be small – not a revolutionary change.

CSPs should have processes in place for outages noting that the:

ECSD imposes requirements on CSPs in the event of a significant network outage to notify ECPs, and to conduct welfare checks on end-users who made an unsuccessful emergency call during the outage using their service.

Triple Zero Disruption Protocols (non-enforceable document) recommends that carriers implement procedures to facilitate notification of disruption to Triple Zero.

Following consultation, it is anticipated that the costs will relate to ongoing staffing to support the required processes, as set out in Table 7.

Table 7: Estimated costs to Carriage Service Providers

Item	Value
Employee costs	$150,000
Average FTE per CSP	0.2
Cost per CSP	$30,000
CSPs affected	350
Total ongoing costs to CSPs	$10,500,000

Description and valuation of benefits

Government (ACMA)

Improved confidence in the industry is a qualitative benefit and has not been estimated for this analysis.

Carriage Service Providers

Improved confidence in the industry is a qualitative benefit and has not been estimated for this analysis.

Other industry / members of the public on the effected network / broader public

Figure 8: Minimise the costs arising from impacts, such as those identified earlier in this document, including the inability to:

- work due to the lack of internet and phone connection
- make sales or otherwise operate their small business – would include Business to business interactions, such as wholesale supplies.
- pay for food, bills and other essentials
- attend, make or reschedule medical or other appointments
- contact friends, family and support services

- study for exams or assignments at school or university
- get information from the carriage service provider about the outage and when it would be resolved.

Reduction of loss

Figure 9: Early information from their carriage service provider about the outage, and when it would be resolved, would allow customers to plan their day and identify “work arounds” and strategies that minimise the impacts such as:

Finding and relocating to a location with internet to work or study

Getting cash out to make purchases

Using a backup form of communication to contact staff, customers, support services and family

Sending staff home if no solution is available or advise them not to come in

Rescheduling appointments, meetings and events that cannot be overcome.

Quantitative estimate of the benefits

The Annual benefit of avoided lost time for customers covering both individuals and businesses =

Individuals	Businesses
Number of impacted individuals (F) X Average reduction in Lost time per customer (C) X Value of Lost time (D) X Number of outages per year (E)	Number of impacted businesses (A) X Number of customers & employees (B) X Average reduction in Lost time per customer (C) X Value of Lost time (D) X Number of outages per year (E)

For simplicity, impacted individuals and the total number of impacted customers and employees can be added to estimate the total number of impacted people.

Number of impacted businesses

Using the Optus outage as an indication of the type of outage that would be impacted, a range of 50,000 businesses to 500,000 businesses was selected – with the expectation that the true number of businesses impacted by an “average” outage would fall within this range.

Number of customers and staff per impacted businesses

The number of business employees can be identified by combining ABS data sources.[24] The average number of employees for each of the identified sectors can be found – giving an average of 9 employees across these sectors.

Table 8: Average employees and average daily sales for selected sectors

	Total sales ($M)	Total count of businesses	Average sales	Total employees	Average employees	Average Daily sales

[24] 8165.0 Counts of Australian Businesses, including Entries and Exits, Jun 2018 to Jun 2022 and www.abs.gov.au/statistics/industry/industry-overview/australian-industry/latest-release#data-download

	Total sales ($M)	Total count of businesses	Average sales	Total employees	Average employees	Average Daily sales
Wholesale trade	770,448	51,144	$15,064,289	597,100	11.7	$60,257
Retail trade	616,848	84,971	$7,259,512	1,479,100	17.4	$29,038
Information media and telecommunications	114,306	13,108	$8,720,323	189,100	14.4	$34,881
Professional, scientific and technical services	374,783	250,213	$1,497,856	1,328,900	5.3	$5,991

As shown in Figure 1 below, this average is distorted by a large number of very small businesses and a small number of very large businesses. In particular, professional services have a very high number of non-employing and micro businesses.

1. **Counts of businesses for each identified sector by employee numbers**

Number of impacted customers

The average number of impacted customers will vary greatly between the business types. Overall, Wholesale trade and Professional, scientific and technical services are likely to be characterised by a small number of high value clients per day. In contrast, retail businesses will be characterised by a very high number of customers per day.

The average number of customers per impacted business can also be estimated by considering the turnover of the business and the average transaction value per customer.

Table 9 below provides the low and high indicative estimates of the number of customers per impacted business based on the number they are likely to see in a day.

Table 9: Indicative estimates of the numbers of customers for each industry segment

Industry sector	Low estimate	High estimate
Wholesale trade	5	15
Retail trade	50	150
Information media and telecommunications	4	10
Professional, scientific and technical services	2	4
Weighted average	23	37

Number of impacted individuals

As noted above, any outage will impact individuals (private customers of the network suffering the outage) as well as business customers and employees. The average number of individuals that are impacted by an outage are difficult to estimate so low and high values of 500,000 and 2 million have been used.

Average reduction in lost time (mins)

The reduction of lost time per impacted person will vary greatly, and are not readily estimated, therefore conservative values of 6 minutes and 20 minutes have been used in the analysis.

Value of lost time

The value of lost time was estimated to be 50% of the median wage.[2] The full-time adult average weekly total earnings is reported to be $1,995.90,[3] giving an hourly employment rate of $53.22 (based on 37.5 hours per week). This gives an hourly rate of $26.61 per hour.

Outages per year

Attachment 1 to this document lists 15 outages over a 13-year period that would be impacted by the proposed reforms. On this basis, it appears likely that there is at least one major network outage per year, especially if the definition of a major network outage was revised down to impacting at least 100,000 services.

The analysis uses conservative estimates of one outage per 2-3 years.

Collated estimates

High and low values for each of these inputs are estimated in Table 10 – giving a range for the likely annual benefits.

There are a number of large uncertainties, and so a low and high estimate for each of the inputs is provided.

Table 10: Low and high estimates of the average annual benefit arising from both businesses and individuals

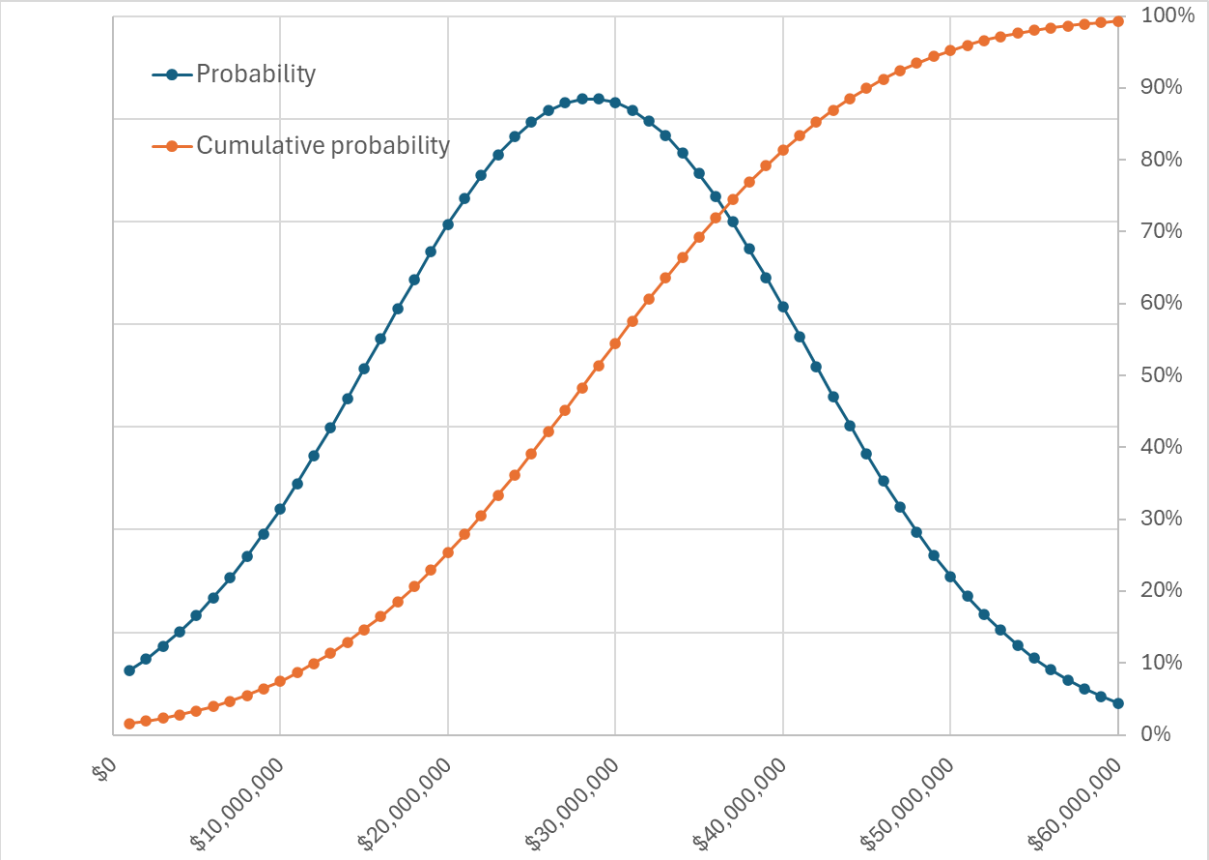
Input	Description	Low	High
A	Number of impacted businesses	50,000	400,000
B	Number of customers per impacted businesses	32 9 employees + 23 customers	46 9 employees + 37 customers
	Number of impacted customers and employees	1,600,000	18,400,000
	Number of impacted individuals	500,000	2,000,000
	Total number of impacted people	2,100,000	20,400,000
C	Average reduction in lost time (mins)	6	20
	Average reduction in lost time (hours)	0.10	0.333333333
D	Value of lost time	$26.61	$26.61
E	# Outages per year	0.5	0.3
	Years per outage	2	3.333333333
	Total value	**$2,794,260**	**$54,288,480**

The analysis gives a broad range of the estimated annual benefit from $2.79 million $54.3 million.

These values can be considered a range, where the true annual benefit figure sits somewhere in the range. The shape of the distribution is not clearly defined. To overcome this uncertainty, the analysis below considers both that the distribution is weighted towards the mid-point – and so may follow a normal distribution or alternatively that it could be a “flat” distribution. Under a flat distribution, all values within the range have an equal likelihood of occurring.

Applying a normal distribution with a mean of $ $28.54 million (the mid of the high and low benefit estimates), and assuming the high and low estimates are two standard deviations from the mean, gives a graph with the shape shown in Figure 2.

2. **Probability distribution of the benefits assuming a normal distribution**



Cost benefit analysis results

Using the data inputs available, the total quantified costs were assessed over the 10-year analysis period are set out in Table 11 below.

Using a discount rate of 7%, the total cost has a present value of $117 million.

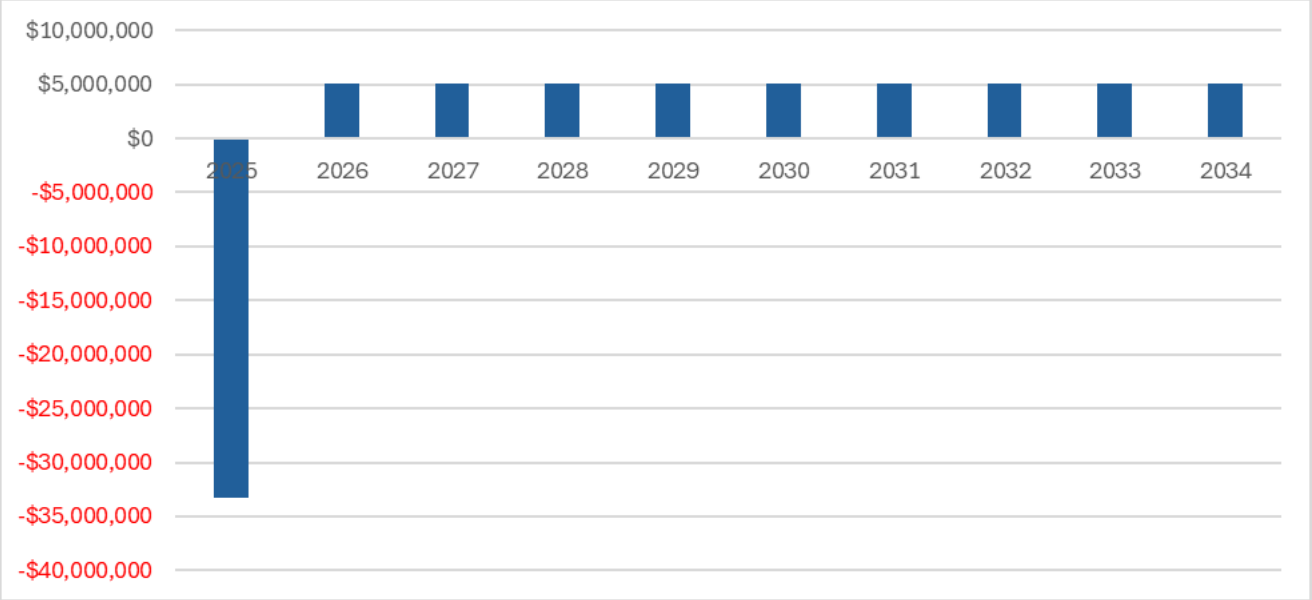
Assuming that the benefits are an annuity that fall in years 2 to 10 inclusive, the “break-even point” can be calculated to be an annual benefit of $ $17,965,000 (rounded to $17.9 million).

The graph of the net benefits, showing the industry significant investment in year 1 and an annuity return in years 2 to 10, is shown in Figure 3.

Table 11: Collated costs over the analysis period

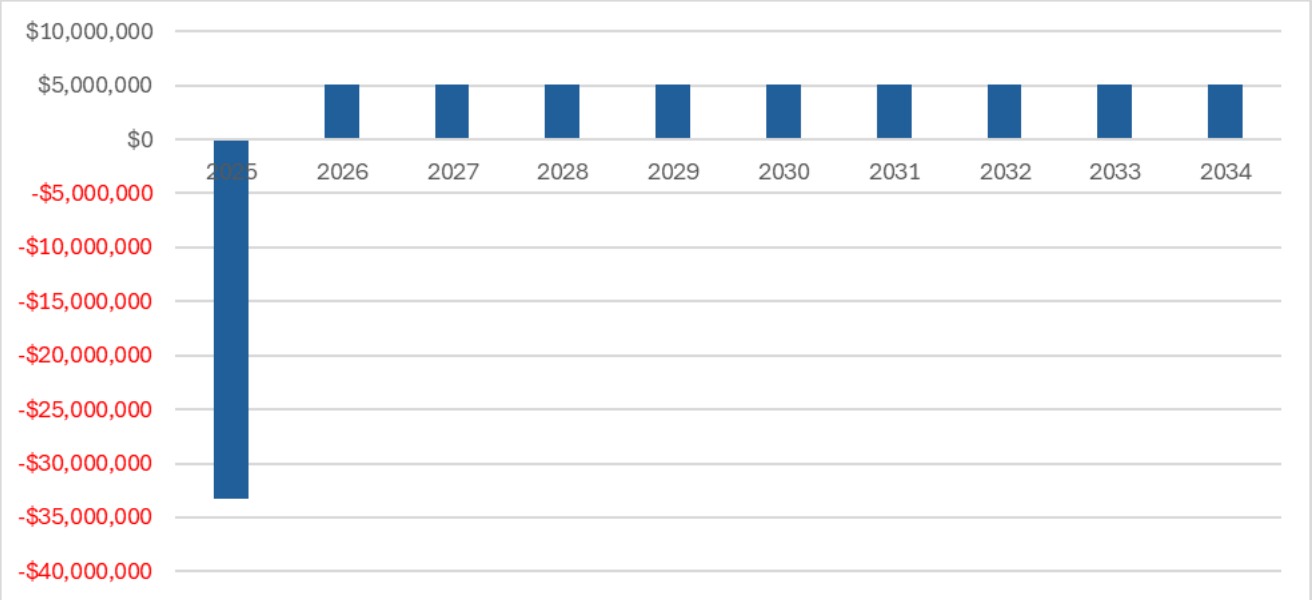
	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
	1	2	3	4	5	6	7	8	9	10
ACMA costs	$290,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000	$105,000
Carrier costs	$22,500,000	$2,250,000	$2,250,000	$2,250,000	$2,250,000	$2,250,000	$2,250,000	$2,250,000	$2,250,000	$2,250,000
CSP Costs	$10,500,000	$10,500,000	$10,500,000	$10,500,000	$10,500,000	$10,500,000	$10,500,000	$10,500,000	$10,500,000	$10,500,000
Total cost	$33,290,000	$12,855,000	$12,855,000	$12,855,000	$12,855,000	$12,855,000	$12,855,000	$12,855,000	$12,855,000	$12,855,000

3. **Graph of the net benefits for each year of the analysis period**



Comparing this break-even point ($17.9 million) to the normal distribution indicates that the

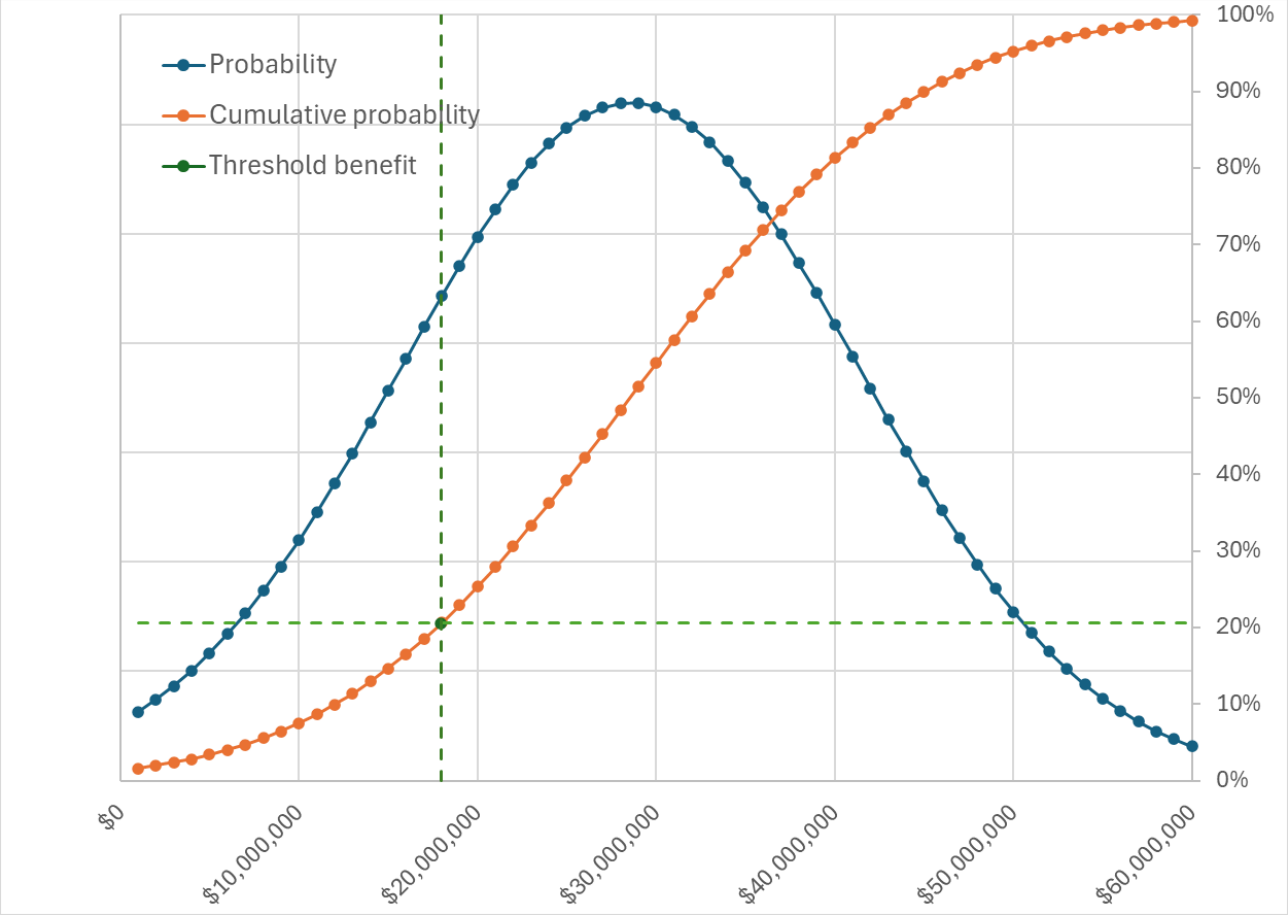
4. **Graph of the net benefits for each year of the analysis period**



Comparing this break-even point ($17.9 million) to the normal distribution indicates that the value has a cumulative probability of 20.6% - as shown in Figure 4 below.

This value indicates that it is 79.4% likely that the benefits would outweigh the costs.

5. **Probability analysis assuming a normal distribution**



Alternatively, if it were assumed that the distribution of the true benefit is flat between the low and high estimates, then it is estimated that it is highly probable (70.5% likely) that the benefits are greater than the threshold required, as set out in Table 12.

Table 12: Flat distribution calculation

Factor	Value
Low estimate of the annual benefit	$2,794,260
High estimate of the annual benefit	$54,288,480
Spread (High – Low)	$51,494,220
Threshold benefit	$17,964,565
Value above the low estimate	$15,170,305
% of the spread above the low estimate	29.46%
Likelihood benefit is greater than the threshold	70.54%

Distribution analysis

Analysis of the costs and benefits indicates that the costs fall predominantly to telecommunications companies (spread between Carriers and Carriage Service Providers). It is anticipated that these costs will be recouped through charges to all customers.

The benefits of the reform will fall to customers of affected networks (both businesses and private customers), as well as the employees and customers of affected businesses. As a result, the benefits will fall broadly across the community and will not be restricted to the direct customers of each network affected by an outage.

Sensitivity analysis

The impact of altering the discount rate is set out in Table 13 below.

Table 13: Sensitivity analysis of adjusting the discount rate

Discount rate	Cost	Annual benefit	Likelihood that benefits outweigh the costs
4%	$128,871,188	$17,332,272	80.80%
7%	$117,043,311	$17,964,565	79.43%
10%	$107,322,251	$18,635,494	77.92%

Due to the form of analysis undertaken, the sensitivity analysis considered the percentage change in costs that would be required for the likelihood of benefits outweighing the costs to drop below 50%. It is calculated that the costs would need to increase by 59% above the current estimates for it to be unlikely that the benefits outweigh the costs.

The sensitivity analyses show that the cost benefit analysis results are not sensitive to changes in the input values or discount rates.

Regulatory burden analysis

Regulatory Burden Measurement was undertaken in line with Australian Government guidance.[8] Regulatory burden identifies the average annual change in regulatory costs and is measured against the status quo.

Regulatory Burden Measurement utilises the same information as the cost benefit analysis but focusses only on the costs that fall to businesses (including government-owned corporations), community organisations and individuals.

The costs are also treated differently, as they are not discounted and focus on the costs that are additional to “business as usual” costs. For this analysis, Option 1 (the base case) equates to the business-as-usual costs. The framework also excludes opportunity costs – although they do not arise in this case.

The Regulatory Burden Measurement framework includes consideration of regulatory compliance costs and provides a simple average of the costs over the first 10 years of the policy intervention.

The framework identifies administrative compliance costs, substantive compliance costs and also delay costs – although delay costs do not arise in this case.

Table 14: Average annual regulatory costs of option 2 (additional to business as usual)

Change in costs ($ million)	Business	Community organisations	Individuals	Total change in costs
Option 2	$14.78	$0	$0	$14.78

The average annual impact of $14.78 million for business arises from substantive compliance costs that fall to Carriage Service Providers and Carriers.

Who was consulted and what did they say?

Consultation on draft standard

The ACMA conducted a full public consultation on the draft industry standard and complied with statutory consultation obligations outlined in subsection 125AA (3) and sections 132-135 of the Telco Act through:

- a public notice published in a national newspaper (The Australian published 19 September 2024)
- public consultation for a period of 30 days (from 17 September 2024 through to close at 5pm on Sunday 20 October).
- consultation with the ACCC, TIO, Office of the Australian Information Commissioner, telecommunications industry bodies, Communications Alliance, and consumer bodies including ACCAN.

The public consultation paper included targeted questions to help inform the ACMA's consideration of the best regulatory option and regulatory amendments to be made.

The ACMA also held bilateral discussions with a number of stakeholders.

Summary of stakeholder feedback

The ACMA received 22 submissions from consumer and industry representatives, government organisations and members of the public. Stakeholders included:

Consumer, Industry and Non-Government

- Australian Communications Consumer Action Network (ACCAN)
- Financial Counselling Victoria
- Internet Association of Australia
- Three members of the public

Industry

- Optus
- Telstra
- TPG Telecom
- NBN Co
- Starlink
- Communications Alliance
- Uniti Group
- Occum Pty Ltd
- Vocus Group
- Symbio

Government

- Department of Infrastructure, Transport, Regional Development, Communications and the Arts
- Department of Primary Industry and Regional Development (DPIRD) (Western Australia)
- Telecommunications Industry Ombudsman (TIO)
- Transport for NSW
- Australian Competition and Consumer Commission

NSW Telco Authority Generally, industry, consumer advocates and government supported the intention of the objectives to ensure that end-users and the public are appropriately informed when there is a major outage or significant local outage.

A number of key themes came through the submissions which are considered in further detail below. Broadly, concerns were raised about:

- The proposed definitions of Major outage and Significant local outage
- Exclusion of outages caused by natural disasters
- Implementation timeframe
- The Standard imposing blanket provisions on all CSPs and carriers and all end-users, resulting in queries about:
    - Arrangements for carriers without end-users
    - Arrangements for CSPs who are unable to identify number of Service In Operation (SIO) affected by an outage
    - Notification requirements for smaller CSPs being the same as the larger CSPs and carriers despite the significantly lower resources they work with
    - The means for notifying and differentiating notification requirements for different end-users
- Unnecessary overlap with some notification provisions
- Inadequate inclusion of accessibility requirements for methods of notification to vulnerable consumers
- Notification frequency

Definitions of major outage and significant local outage

Submissions from all cohorts raised concerns with the definition of major outage and significant local outage proposed by the ACMA.

The definitions set out in the original proposed draft standard for significant local outage and major outage encompassed:

- Major outage – being for a duration of 30 minutes; and affecting either 500,000 or more the carrier's or CSPs services in operation; or all carriage services provided by a carrier or carriage service provider in a State or Territory.
- Significant local outage – being for a duration of longer than 6 hours; and affecting 50,000 or more of the CSPs services in operation.

The original draft standard also excluded outages that were planned and that were caused by natural disasters.

Major outages

Industry was comfortable with the threshold for major outages however had some concerns with the technical meaning of what constituted an outage. ACCAN, the Department, TIO and some members

of the public argued the threshold of 500,000 impacted users is too high for major outages. It was argued that larger communities and capital cities such as Darwin and Hobart would not be captured by the definition, which is unacceptable, although they would be captured if all services provided by a carrier are not functioning in that state or territory. The submissions also argued that the impact to end-users is materially the same regardless of the size or cause of the outage, and that the impact to a community of an outage is significant, especially where a community relies on only one telecommunications service provider and can be 'cut-off' from essential telecommunications services.

Significant local outages

A number of submissions raised complexities in defining significant local outage pointing to the importance of including geographical boundaries into the definitions. Concerns were raised that 50,000 is too high and that smaller communities with a single provider would not be captured. Some argued that the threshold should be defined by 100 services impacted or a population centre or a suburb. There were also concerns raised that the duration is too long at 6 hours and should be 30-60 mins. The TIO recommended that further consultation be conducted with rural and remote working groups to settle on a practical and workable definition.

Outages caused by natural disasters

While industry supported the exclusion of natural disasters, consumers, the TIO, ACCAN, ACCC and other government agencies, argued that outages caused by natural disasters needed to be included in the Standard. The ACMA met with some state government agencies that sought the application of the communications requirements to all telecommunications outages, regardless of the size or cause of the outage. They proposed that the application of the standard should be broad-based, and not only apply to outages caused by telecommunications companies themselves (by technical faults within the telecommunications network, facilities and systems), but should be applied for any outages experienced by end-users, such as natural disasters, or any level of storm or electricity supply outage. Submissions argued that the impact to end-users is materially the same regardless of the size or cause of the outage.

Implementation timeframe

Industry raised concerns about the timing for implementation of the Standard being 31 December 2024. There are embargoes put in place over the Christmas fire and storm season until the end of January prohibiting any changes or upgrades to systems. This would prevent them from being able to implement changes enabling them to give effect to and comply with the obligations in the Standard.

Arrangements for carriers without end-users

Several submissions raised concerns that the requirements apply to carriers that do not have end-users, and sought clarity on the requirements that would potentially apply to such carriers (for example carriers that only provide backhaul services, either domestically or via international submarine cables and sell capacity to other carriers or carriage service providers, but do not directly supply carriage services to end-users).

These submissions advocated that it would be unnecessary for these types of carriers to provide information to end-users, as end-users that ultimately rely on their services (through contractual arrangements with other carriage service providers to provide telecommunications services) would not look to such a carrier for information, as they are not aware of that carrier's role in the supply chain.

Arrangements for carriers vs CSPs

Concerns were also raised about where the responsibility and capability lie in determining the scale of an outage. CSPs argued that, given they do not own the network, they are unable to identify number of services in operation that are affected by an outage as that information is held by the carrier – the owner of the network. Some CSPs also argued that the notification requirements for smaller CSPs should not be the same as the larger CSPs and carriers given the significantly lower resources they work with.

Differentiating between end-users

Some stakeholders argued that notification frequency and type should differ depending on the end-user (for example, small businesses, large enterprises or members of the public).

Accessibility

ACCAN submitted accessibility requirements for vulnerable end-users were inadequate and did not meet the objective of the Minister's Direction.

Notification frequency

Carriers advised their systems will need to be updated to send mass volumes of SMS notifications and email as their current systems are not adequate.

Carriers also advised that notifications every two hours will be too frequent for long duration outages – especially if applied to natural disasters that may last days or weeks. Carriers also argued that SMS notifications risk clogging mobile networks when they are recovering from outages, especially where staged every 2 hours but cannot be sent due to the network outage. This gives rise to the potential for confusion with end users when notifications are received, and the information received may not be accurate.

How were these submissions considered in shaping the approach to the final Standard?

These issues, along with editorial feedback from all submissions, were considered in shaping the approach to finalise the Standard. Notable changes to the current drafting of the Standard include:

- Significant local outages inclusion in the Standard has been deferred to a later date to allow for due consideration of the appropriate definition (these rules do not have to be determined until 30 April)
- Changes were made to the definition of major outages to reduce the threshold that constitutes an outage from 500,000 services to 100,000
- Obligations on CSPs and Carriers regarding the identification of outages and notification requirements have been differentiated and clarified
- Clarification on accessibility requirements for end-users receiving notifications has been included
- Notification frequency was amended.

What is the best option from those considered and how will it be implemented?

Option 2 – Direct regulation (Industry Standard)

Option 2 to make an industry standard is the best option with the highest net benefit of the options considered and aligns with the Direction. This option most effectively and efficiently addresses the identified deficiencies in the voluntary Guidelines relating to telco communications with customers during an outage. It ensures that telcos appropriately prioritise keeping customers informed during outages without delaying the restoration of services. The costs associated with implementing an industry standard are low because telcos already have appropriate mechanisms in place to communicate with customers via various channels.

An industry standard with directly enforceable obligations has the potential for positive impacts, including ensuring customers impacted by an outage are reassured and armed with enough information to enable them to manage and plan while temporarily without telecommunications services. A consistent and clear industry approach to customer communications during outages is also likely to enhance consumer confidence in the telecommunications industry and improve customer relations for CSPs, potentially yielding reputational benefits.

Clear and directly enforceable obligations incentivise compliance, potentially reducing complaints to the TIO, the ACMA, and CSPs and carriers relating to outages and associated costs. They ensure consistent practices, enabling the ACMA to monitor and enforce compliance more efficiently.

Consultation and engagement indicate support for customer communications requirements to be codified from government, consumer groups and industry.

Implementation

Key milestones to implement Option 2 are:

- Friday 8 November 2024 – Second Pass Impact Assessment cleared by the Office of Impact Analysis
- 11-12 November 2024 – Authority consideration of draft instrument and making amendments
- Wednesday 13 November 2024 – instrument registered on Federal Register of Legislative Instruments at www.legislation.gov.au
- The instrument will commence operation on 31 December 2024.

The Industry Standard will be implemented as outlined in Option 2 and in accordance with the Direction. The final decision point under this option will be made by the ACMA at an Authority meeting scheduled for week commencing 11 November 2024. If the Authority approves this option, the *Telecommunications (Customer Communications for Outages) Industry Standard 2024* will be registered on the Federal Register of Legislation and be made available at www.legislation.gov.au. The Standard must be determined by 14 November 2024 and commence no later than 31 December 2024.

There are risks to the implementation of this option. Procedurally, the approval and registration of regulatory instruments is a standard process for the ACMA. In the circumstances, given the

unusually limited time available to design and consult on the draft instrument, there is an inherent risk that this could result in an unworkable or poorly drafted instrument that does not meet stakeholder needs or expectations and that is not in line with the objectives of the Direction. This risk has been mitigated via engagement with stakeholders before, during and after the formal consultation period to understand the challenges and test ideas.

In addition, the short timeframe to commence the new requirements gives rise to a risk that industry may not have time to prepare for the additional regulatory burden and make any required changes to systems and processes. The consequences could involve resistance to compliance, affecting the success of the Standard.

To mitigate this risk, the ACMA has, and will continue to, employ a collaborative approach, engaging in regular and transparent communication with industry to address concerns constructively. Stakeholder engagement will remain pivotal. The ACMA intends to engage with Communications Alliance to ensure that industry is aware of and understands the new obligations.

Alternative options

Option 1 - Status Quo

This is the least preferred option to achieve the policy objective.

Continuing to rely on the voluntary Guideline does not sufficiently protect consumers. A lack of clear rules means that telcos will continue to apply a discretionary approach to customer communications during outages. This likely means that future major outages will result in similar confusion and distress amongst end-users as seen amongst Optus customers and the public during the November 2023 outage.

Option 3 – Direct Regulation – Amend the ECS Determination

Amending the ECSD is not preferred as it deals with the obligations of carriers and CSPs in relation to the emergency call service and has a much narrower focus. Amendments to the ECSD could only deal with outages that impact the ability to make an emergency call to Triple Zero and could not, for example, apply to specific outages where data services may fail, but voice services do not. Nor would amending the ECSD align with the requirements of the Direction.

Option 4 – Co-regulation

Developing an industry code is not preferred because it would be less effective at addressing the identified issues. While the ACMA can provide feedback and set expectations for the requirements to be included the code, the content of an industry code is determined by the representative industry body. There may be protracted negotiations before an acceptable draft code is developed. An Industry Code would also provide less effective deterrence against non-compliance because a telco must be found non-compliant twice before the stronger enforcement actions available under the Act can apply.

Given the immediacy of action required, with the Minister’s direction stipulating a Standard be determined by 14 November, amending the Code is not the preferred option. Industry Codes typically take a minimum of twelve months to be developed through the Communications Alliance industry body, public consultation to be undertaken and registered by the ACMA.

In order to take enforcement action, the ACMA is required to direct a carrier or CSP to comply with the code before it can require compliance with the code. This requires the ACMA to conduct an

investigation into the requirements of the code, which can be a time-consuming process, requiring procedural fairness and natural justice considerations. In comparison, option two would determine an Industry Standard and have immediate regulatory effect requiring compliance by carriers and CSPs. Option 2 would also enable the ACMA to enforce compliance and enforcement action immediately after a breach of the standard is found.

Options 1, 3 and 4 would also not satisfy the Ministerial direction, leaving the ACMA non-compliant.

How will you evaluate your chosen option against the success metrics?

The ACMA will monitor and evaluate the implementation of the Industry Standard to ensure it aligns with the objectives and success metrics outlined in Question 2 and gauge its effectiveness. In its evaluation, the ACMA will assess the following key questions:

1. Did the Industry Standard achieve the intended outcome?
2. What were the key activities involved in implementing the chosen option?
3. Were there any other unintended impacts from the Industry Standard?
4. How well was the Industry Standard implemented? Are there any improvements that could be made to the design or delivery of the instrument?

Intended outcome

The objectives of the ACMA's chosen option are to place clear obligations on carriers and CSPs to prioritise customer communications during outages and to ensure that:

- communication with end-users in relation to outages will:
    - be timely and up-to-date
    - accessible and made through a mix of public and direct communication channels
    - identify, as appropriate, methods for end-users to seek a real-time or near real-time update or assistance
    - inform end-users and the public about the status, scale, cause, and estimated timing for rectification of the outage
    - provide prompt notification when services are restored.
- carriers and CSPs share information about outages with each other and relevant stakeholders to enable effective communication with end-users affected by the outage.
- carriers and CSPs make information about their process for communicating about outages publicly available and easily accessible.[25]

Success will be measured by how the CSPs and carriers respond to major outages including:

- analysis of the reduction in complaints received by the TIO from consumers affected by outages compared to complaints received following the Optus outage
- assessment of the accessibility of information about processes for communicating about outages from carriers and CSPs
- assessment of information carriers and CSPs experiencing outages share with other carriers, CSPs and relevant stakeholders about the outages.

Key activities

[25] https://www.legislation.gov.au/F2024L01060/asmade/text, accessed 27 August 2024.

In the post-implementation phase the ACMA will actively evaluate the effectiveness of the Industry Standard against the success metrics by:

- auditing carrier and CSP websites to ensure that information about their processes for communicating about outages is publicly available and easily accessible
- monitoring complaints received by the TIO following outages
- monitoring carrier and CSP public communications during outages to assess compliance and identify potential areas of concern.

Unintended impacts

The ACMA will request information from providers about any difficulties that may be experienced with upgrading systems to ascertain if there are improvements in processes, information sharing or regulatory arrangements that may assist to meet the policy objectives.

The ACMA will also monitor closely difficulties experienced during outages such as congestion and will undertake desktop audits to check that providers are providing information about outages to communicate with the public. The ACMA will consider appropriate compliance action where these policies have not been updated.

How well the Industry Standard was implemented

This will be the subject of ongoing evaluation and monitoring through a combination of a measurement of success of reaching the intended outcome and unintended impacts.

Should the Industry Standard prove ineffective, we may consider regulatory reform or advice to government about implementing further rules or amending the Industry Standard to address any regulatory gaps. An opportunity for amendments will be available also for when circulating the draft proposed standard for significant local outages.

The above program of work will be undertaken by the Telecommunications Safeguards and Numbering Branch of the ACMA within existing resource allocations. The ACMA will work with industry to receive reporting against key metrics when outages occur. We anticipate major providers will provide relevant information voluntarily, but the ACMA can rely on formal powers in the Telco Act to require providers to give information and data if necessary.

Attachment 1: Table of major telecommunications network outages in Australia from 2012 to 2024

Each of these outages meet minimum trigger of impacting 100,000 customers and consumers impacted for more than 60 minutes.

Date of outage	Company	Details of outage	Reporting of outage
26 June 2012	Vodafone	Duration approximately 3 hours with 3G mobile network voice and data outages.	https://www.itnews.com.au/news/vodafone-suffers-near-nationwide-3g-outage-306421
9 February 2016	Telstra	Mobile voice and data networks outage for 3 hours due to ‘human error’ by Telstra staff.	'Embarrassing' human error behind national Telstra outage - Telco/ISP - iTnews
17 March 2016	Telstra	Outage of Telstra 3G and 4G networks. Customers unable to make or receive calls or use data.	Telstra outage forces another free data day - Collaboration - Telco - Networking - CRN Australia
22 March 2016	Telstra	Victoria and Tasmania. Caused by card failure in a media gateway in Victoria prevented calls from working.	Third time unlucky for Telstra after yet another outage - Tech Guide
20 – 23 May 2016	Telstra	375,000 NBN and ADSL customers offline for as long as four days. Caused by software update.	Telstra still struggling with fourth big outage this year - Telco/ISP - iTnews
30 June 2016	Telstra	Started 2pm. Impacted business and enterprise customers. Telstra announced rectification at 956pm.	Not again! Telstra suffers another outage - Telco - CRN Australia
25 September 2016	Vodafone	Voice and data did not work for 8 hours from 5pm Sunday night. Intermittent issues continued until 1030pm on Monday 26 September.	Vodafail: Vodafone customers slam network after nationwide outage
3 and 4 May 2018	Telstra	Intermittent voice calling for 8 hours caused by Infrastructure damage then subsequent impacts.	Investigation Report into the Triple Zero Service disruptions of 4 & 26 May 2018

26 May 2018	Telstra	Two hours impact to voice calls.	Investigation Report into the Triple Zero Service disruptions of 4 & 26 May 2018
2 July 2021	Optus	Nationwide outage of mobile and internet services from 1030am. 4G and 5G services restored by 350pm, but 3G continued	Optus outage affects mobile and internet customers across Australia | The Chronicle
18 October 2022	Telstra	Started 6am, finished 930am, calls on mobiles failing.	Telstra outage hits Australians, as Sydney, Melbourne users unable to make calls | news.com.au — Australia's leading news site
14 March 2023	Vodafone	Duration approximately 4 – 530 pm. 200,000 customers in Sydney and Melbourne impacted. Unable to make voice calls or text.	Vodafone outage: Australian customers report issues with mobile service
9 May 2023	Telstra	Outage from 10pm mainly in NSW and QLD, resolved around 10am next day. Voice calls	Telstra outage update: Telstra apologises to customers after outage left them unable to make or take calls
8 November 2023	Optus	Nationwide outage from 5am until 4pm impacting the Optus mobile network and fixed-line networks.	Optus outage updates: Services 'gradually' restored as experts warn outage exposes serious vulnerabilities in Australian networks — as it happened - ABC News
14 April 2024	Vodafone	Outage to mobile services nationally impacting voice calls for several hours. Data and text messages and calls to 000 continued to work.	Vodafone resolves national outage impacting voice calls | The Nightly