

Senate Standing Committee on Environment and Communications
Answers to Senate Estimates Questions on Notice
Additional Estimates Hearings February 2014
Communications Portfolio
Australian Communications and Media Authority

Question No: 7

Program No. Australian Communications and Media Authority (ACMA)

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Topic: Copper thickness

Senator PRATT asked:

Finally, I want to take the opportunity to follow up on a question that the ACMA took on notice at the Senate select committee on the NBN. In particular, it was in relation to the thickness of copper. In the ACMA's view, does reducing the diameter of copper wire have a greater effect on the attenuation of high frequencies used for data than it does for lower frequencies used for voice? I do appreciate that that is quite a technical question.

Mr Chapman: I can't recall that particular question. Nor can I recall the ACMA response, but in any event we would need to take that on notice, and I qualify that by saying if it is a relevant consideration within our remit. ACMA, as an overarching statement, has a role in telecommunications with respect to consumer protections. We have very little visibility under our areas of responsibility for the state of Telstra's copper. Contrary to urban myth, it is not a matter we have a particular role with respect to.

Senator PRATT: I wouldn't call it an urban myth, but arguably you have a role in reporting and advising the minister in relation to matters affecting consumers or proposed consumer carriage services. Clearly, the extent to which one consumer in one region gets different services to another because of the state of Telstra's copper network would be relevant.

Mr Chapman: I accept your response, Senator. I was just simply trying to make the point that we aren't the source of truth for the state of Telstra's copper. We have a number of peripheral roles in that space, including some that Mr Tanner is just going to touch on.

Answer:

In general, the useful distance a signal can be transmitted will vary depending principally on how high the frequency is and, to a lesser extent, on the thickness (or gauge) of the copper. As a consequence:

- the higher the frequency, the less the achievable distance of transmission; and
- the 'thicker' the gauge or larger the diameter of copper, the greater the achievable distance of transmission.

In addition, the useful distance may be adversely affected by 'noise', such as impulse noise (e.g. from lightning, motors or switches); radiocommunications interference; or 'cross talk' from other copper lines.