

Telecommunications Relay Service Stakeholder Review

**Draft Report prepared by
Ross Brereton Consulting for the
Ministry of Economic Development**

May 2006

Contents

Executive Summary	4
Recommendations	7
Introduction.....	8
Service Performance.....	9
1. International Comparisons	9
2. Monitoring Service Performance	9
3. Customer Feedback.....	11
Service Development	15
1. Range and Functionality of Services.....	15
2. Relay Access From Public Places	20
3. Relay in Maori Language.....	23
4. Speech to Speech (STS) Trial	24
5. Internet Relay (NZIR).....	25
6. Consultation.....	26
Effectiveness of Outreach	28
1. Relay Call Refusals.....	29
Impact of Technology	30
1. Current situation	30
2. Major technology shifts	31
3. Crown textphone pool.....	32
Conclusion	33

SUPPORTING DOCUMENTS

Usage and Satisfaction Survey, National Research Bureau, April 2006

International Benchmarking, Consultel Associates Ltd., April 2006

Impact of Technology Changes on the Relay Service, Consultel Associates Ltd, May 2006

Summary of Operations for New Zealand Relay - Sprint New Zealand

Executive Summary

The Telecommunications Relay Service (TRS) was established in November 2004, under the Telecommunications Service Obligations (TSO) framework of the Telecommunications Act 2001. The TRS is designed to meet the telephone communications needs of Deaf, Deaf-Blind, Hearing-Impaired and Speech-Impaired people.

Cabinet agreed that the TRS would be reviewed one year after its implementation and that the outcomes of the review would be reported to the Minister of Communications and the Minister of Disability Issues.

The specific purpose of this review is to investigate and report on the degree to which the services specified and made available under the TRS TSO Deed are meeting the needs of end-users. The review includes the identification of potential service refinements and enhancements that need to be considered in service development planning by the TRS provider.

The review methodology utilised inputs from a variety of sources, including:

- A **Usage and Satisfaction Survey** of TRS users conducted by the National Research Bureau (NRB). A questionnaire, with reply paid envelope, was mailed to 314 TRS users who had rented textphones. These recipients were understood to be approximately 50% of those who use TRS (the other 50% being Internet Relay Users). A 46% participation rate for the mail out survey was achieved. This is a relatively high participation rate by mail survey standards and provided a sound sample size for analysis. A web version of the questionnaire was posted on the Relay Service website. Only 11 users responded to the Internet version. Absence of the need to register before using the TRS has precluded direct solicitation of user participation in the survey based on a list of registered TRS subscribers.
- A **Call for Submissions** from stakeholders was publicised on the MED website, posted directly to known stakeholders and accompanied by a joint press release from the Minister of Communications and the Minister of Disability Issues. Written submissions were received from support organisations, government

agencies and TSO Liable Carriers. Additionally, four submissions from interested individuals were received, (refer www.med.govt.nz).

- Two consultancy reports from Consultel Associates Ltd on: **International Benchmarking**, a comparative study of the New Zealand TRS with four comparison countries; and the **Impact of Technology Changes** on the Relay Service.
- A **report from Sprint New Zealand** (the TRS Provider) outlining the developments of the TRS since its establishment in November 2004.

The review found an overwhelming support for the TRS and for its continuance. The user survey reported an overall 85% satisfaction rate with services offered. The TRS clearly has a positive and empowering effect on the lives of users in reducing social isolation and enabling self reliance for telephone communication.

The review has also found a number of areas of possible refinement and enhancement for the Ministry of Economic Development (MED) and the TRS provider Sprint to consider. The most pressing areas include:

- Providing additional one to one assistance to TRS users to increase their confidence in making relay calls.
- Improving the speed of user connection to the TRS and the consistency of service from Relay Assistants.
- Wider public education to increase use and familiarisation with the TRS.

It is noted that Sprint is being proactive and already taking steps to respond to the areas identified above.

The review also highlighted some specific areas requiring Ministerial consideration and decision.

There is a strong call from end-users and support organisations for Speech to Speech (STS) to become a permanent feature of the TRS as is the case in other countries. It appears that little would be gained from extending the current trial. Users already find the TRS life changing and this is also reported by those organisations that support Speech-Impaired people.

The case for introducing relay access from public places and for relay in Maori Language is less compelling. These areas are less of a priority for future development of the TRS compared to STS and other additional features sought by TRS users. However, further work is required to assess the desirability of introducing relay in Maori and other languages in future.

Additional service enhancements, such as Video Relay, are also strongly supported by the Deaf Community. Major technology improvements over the next five years should allow for these developments along with advances in voice recognition technology.

TSO Liable Carriers support the primary objectives but emphasise the importance of consultation before the introduction of any additional TRS services.

The TRS in New Zealand, although small in comparative size, generally compares favourably to other countries in terms of the cost to users and in terms of the adequacy of the service quality measures used. This is encouraging after only one year of operation; a service still in its infancy.

Recommendations

1. Speech to Speech (STS) becomes a permanent feature of the TRS as it is in other countries.
2. Video Relay should be the priority service development considered as part of long term planning for the TRS
3. Text relay access in public places not be pursued for service development at this time.
4. The merits of relay in Maori and other languages be investigated further to assess the desirability of introducing such a service in future.
5. The service quality measure 'Dialing Response for Outward Calls' in the TRS Deed be discontinued and no longer be applicable from 2005/2006 forward.
6. The speed of answering relay calls continues to be improved so there is minimal variability in performance between months.
7. The consistency of performance of Relay Assistants in some areas be improved.
8. Additional one to one assistance is provided to textphone users to increase their confidence in making relay calls.
9. TSO Liable Carriers continue to be consulted on proposed new relay services.
10. A vibrating call alert device option is offered as a choice to TRS users as an alternative to a visual call alert device (lamp flasher).
11. An outreach marketing plan is developed by Sprint in consultation with NZRAG and support organisations to improve user participation and public knowledge and acceptance of the TRS.

Introduction

The MED and Sprint launched the Telecommunications Relay Service (TRS), including NZ Internet Relay (NZIR), in November 2004. These services were launched with the goal of providing telephony access for people in New Zealand who are Deaf, Deaf-Blind, Hearing-Impaired and Speech-Impaired. According to the 2001 New Zealand Disability Survey, there are an estimated 223,500 adults who are Deaf or have a hearing limitation that can not be eliminated by a hearing aid. In addition, an estimated 18,300 children are Deaf or have a hearing limitation that is currently not corrected.

The TRS is available on a national basis, twenty four/seven and is marketed under the name New Zealand Relay. Sprint International New Zealand (Sprint) is the TRS provider. Sprint has had 15 years international experience providing relay services. The TRS is operated under the TSO regulatory framework. Sprint has a TSO Deed agreement with the Government to operate the service and this is administered by the Ministry of Economic Development (MED).

The TRS works by a Relay Assistant relaying a telephone call between a Deaf, Deaf-Blind, Hearing-Impaired or Speech-Impaired Person and a hearing person or another person with a communication disability. The Relay Assistant acts as a bridge relaying the entire conversation between the relay users. All Relay Assistants sign a strict confidentiality agreement to ensure the privacy of information received in the course of their interactions with relay users. Relay Assistants are trained to help Speech Impaired people be understood by anybody receiving calls from them.

To make relay calls the relay system can be accessed by dial up using a telephone or textphone and can also be accessed through the Internet Relay website. There are currently three basic types of relay calling:

- Text (TTY or NZIR) to voice and vice-versa
- Hearing Carry Over (HCO)
- Voice Carry Over (VCO)

A trial of a Speech to Speech (STS) relay commenced in August 2005 and is scheduled to continue until May 2006.

Service Performance

1. *International Comparisons*

A benchmarking study of the TRS with other countries, such as Australia, USA, Sweden and the United Kingdom, compared charges to the user and the suitability of service quality measures.

This study, conducted by Consultel Associates Ltd for the MED, found that New Zealand compares favourably to these comparison countries in terms of the charges to users because all local and national relay calls in New Zealand are free of charge. In Australia, the UK and Sweden, users are charged for the relay call segment between the relay centre and the called party.

Another element of cost to users is the textphone equipment. In New Zealand a range of textphone equipment is heavily subsidised by the Crown. The rental is \$15 per month (including GST) and is charge-free for people who meet the income thresholds to be eligible for a community service card.

Australia offers a more limited range of textphones through the Telstra and Optus Disability Equipment Programme. In the UK and Sweden, users must purchase their own equipment. In the USA, most states subsidise wire-line but not wireless textphones through an Equipment Distribution Programme.

At present, under the TRS TSO Deed and Addendum One to the Deed, New Zealand uses equivalent Service Quality Measures (SQMs) to those in Australia, UK, USA and Sweden with one exception: SQM 5 'Dialling Response for Outward Calls'. This is discussed further in the section below.

2. *Monitoring Service Performance*

The TRS provider Sprint must comply with the Service Quality Measures specified in the TRS TSO Deed referred to earlier in this report. Sprint reports a number of additional quality assurance measures that it takes to monitor and enhance the services offered to users.

As at 15 December 2005 the Relay Centre employed 18 Relay Assistants. Comprehensive Relay Assistant training programmes and performance assessment programmes aim to continually improve Relay Assistant call handling performance. Programmes are based on performance standards

developed from customer satisfaction surveys, customer input and contractual obligations.

Other quality assurance efforts include: certified trainers explain policies, practices and call procedures; and management and resource staff located in the work centre with Relay Assistants provide guidance, motivation, training and performance reviews.

The New Zealand Relay Advisory Group (NZRAG), established in March 2005, also provides feedback and raises issues affecting the performance of the TRS, and makes suggestions for enhancing services. Members of NZRAG represent various user groups. A Charter for NZRAG has been developed and agreed by members that embodies the experience of successful equivalent groups in the USA and specific New Zealand requirements.

Service Quality Measurement

As already mentioned, a number of Service Quality Measures (SQMs) are applied under the TRS TSO Deed for monitoring the TRS performance.

The service quality measure ‘Dialling Response for Outward Calls’ (SQM 5) is computed on a quarterly basis for each financial year of the TRS Provider. The required Performance Standard is that at least 85% of outgoing calls from the TRS system will be dialled by Relay Assistants within 15 seconds of receiving call destination information from the call originator (quarterly figures). This service measure requires sampling for it to be applied in practice.

Service Quality Measures by their nature must be verifiable. Statistical sampling methods are open to interpretation and dispute as to whether an SQM has been met or not.

The Commerce Commission monitors Sprint’s compliance with the SQMs under the Relay Service TSO Deed on behalf of the Crown. For SQM 5 the Commission requires a statistically rigorous process that exceeds Sprint’s normal observational tests (which Sprint carries out as an internal quality assurance measure under its 31 contracts in the USA and in New Zealand). Sprint’s current testing regime is that each Relay Assistant is assessed twice monthly by an observer that is physically present. The Commission does not consider that Sprint’s testing is blind or random.

The Commerce Commission requires a blind, random test that needs at least 196 random test calls generated to the Relay Centre per quarter. The results must then be statistically weighted according to the traffic that the Relay Centre normally experiences on that day of the week and time, seasonally adjusted. The cost of these test calls would be borne by the TSO Liable Persons. In addition to the cost of the test calls the statistical weighting requires considerable manual work by Sprint, auditing by KPMG and finally examination by officers of the Commerce Commission.

In hindsight and with the benefit of one year of operational experience it is concluded that the measure serves no useful purpose in terms of the TRS user experience. The stakeholder review and the user survey carried out by the NRB did not identify any significant user concerns with the dialling response for outward calls. It is not a service quality measure that is used by Australia, the UK, the USA or Sweden. It has also become clear that unless a measure can be captured electronically the verification costs are unreasonably high. A further Addendum to the TRS TSO Deed would need to be negotiated to discontinue SQM 5.

Recommendation

The service quality measure “Dialling Response for Outward Calls Service” (Quality Measure 5) be discontinued and no longer be applicable from 2005/2006 forward.

3. Customer Feedback

The NRB User Survey and submissions from other stakeholders were overwhelmingly supportive of the TRS and of the difference it is making to the lives of those who use it. Survey participants reported an overall 85% satisfaction rate with services offered under the TRS. Being very satisfied is a function of user frequency since this figure is over 70% among frequent TRS users (refer Figure 1. below from the NRB user survey). Additionally, 72% of participants rated the TRS a good way to communicate with other people for most things.

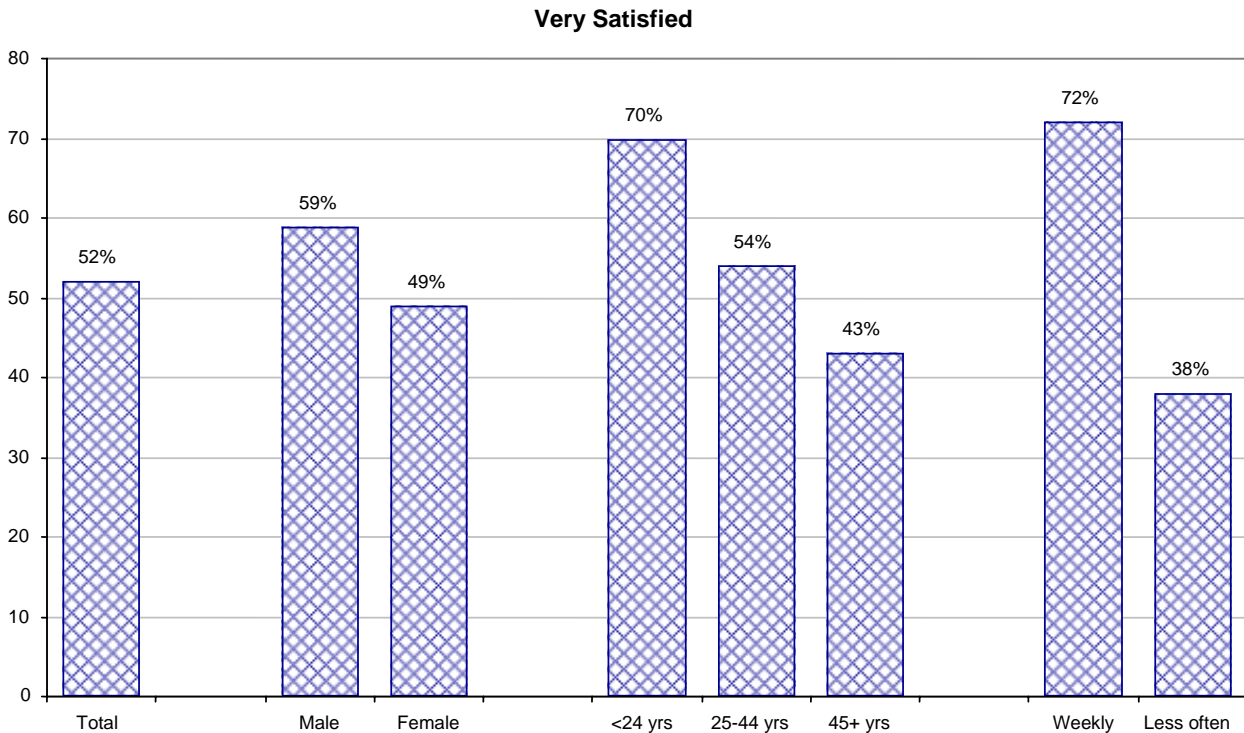


Figure 1.

When asked to comment on problems that users may have with the TRS and ways to improve the service, some service performance issues were identified.

Relay Assistants

The TRS was rated by users for service performance on seven aspects of the interaction between the Relay Assistant and the caller. High ratings were generally achieved except for how long they take to answer a call. Some 12% of users rated how long Relay Assistants take to answer calls as ‘often not good’. Feedback from submissions also commented that there were occasional long delays in connecting to a Relay Assistant and that this was quite frustrating if an urgent call had to be made.

Speed of answering calls is one of the Service Quality Measures specified in the TRS TSO Deed. The required performance standard is that at least 85% of calls will be answered within 15 seconds. The Commission’s draft determination for the 2004/05 year has concluded that Sprint have achieved material compliance with this measure. At the time of writing this report, Sprint was actively taking steps to bring performance consistently above 85% by adding more staff and making technical changes.

Many positive comments about the Relay Assistants were received. Feedback from submissions indicated that they were generally helpful and competent in the art of relaying conversations, and were found to be personable and considerate. Some 85% of survey participants similarly rated the manner of Relay Assistants as always or mostly good. However, some submissions indicated that there were varying levels of consistency among Relay Assistants in respect to typing ability and allowing users to manage their own conversations.

Recommendation

The speed of answering relay calls continues to be improved so there is minimal variability in performance between months.

Recommendation

The consistency of performance of Relay Assistants in some areas be improved.

Support and Training for TRS Users

The adoption of the TRS is being held back in that 4 out of 10 users¹ who attempt to use the service are finding aspects of it difficult to understand and use. Individual user comments included:

- Have problems understanding how to use the TTY
- Instructions are not user friendly
- Not sure how to apply for a TTY and whether it is free or not
- Have language and spelling difficulties when typing (for many NZSL users English is their second language)
- Key pad difficult to use
- Need more time and practice to be comfortable with TTY and TRS

Submissions commented that much of this support including teaching users how to access and use TTY machines is currently being undertaken by relevant NGOs at their own cost. One organisation would like to see Sprint employ someone with knowledge of communication difficulties, to either phone or visit newly registered users. There are good indicators to conclude that personal one to one assistance is required for some users.

¹ NRB User Survey

It is noted that Sprint is already taking steps to provide additional one to one assistance to new and existing users.

Recommendation

Additional one to one assistance is provided to textphone users to increase their confidence in making relay calls.

Service Development

1. *Range and Functionality of Services*

Sprint was appointed the TRS provider in a TSO agreement executed on 1 July 2004. By November 2004 the TRS and NZIR were operational. The complexity and technical coordination required to successfully launch the services under such a tight time frame, is unprecedented in the delivery of TRS systems that meet all international standards including V.18, CTM and Voice over Internet Protocol. The V.18 technology standard supported by the relay platform automatically inter-works with telephones worldwide and the CTM module provides global access for GSM Mobile networks.

Sprint has developed and implemented a TRS platform that works seamlessly with the New Zealand telephony system. The New Zealand TRS Platform is totally Internet Protocol (IP) based and facilitates the relay of conversations between Relay users and the people they are calling using voice to text, text to voice or simultaneous voice and text methods.

In order to meet the communication needs of people having various levels of ability, the following call types are available (refer Sprint New Zealand Report)

Voice Carry Over (VCO)

This mode is applicable for Deaf or Hearing-Impaired people with the ability to speak. By pressing the VCO/HCO button on the textphone, the Relay user can have a one way conversation talking directly to the hearing person. Pressing the VCO/HCO button again reestablishes the text communication between the Relay user and the Relay Assistant. The Relay Assistant then translates the hearing person's voice into text that is sent to the Relay user.

Hearing Carry Over (HCO)

This mode is applicable for Speech Impaired people with the ability to hear. By pressing the VCO/HCO button on the textphone, the Relay user can have a one way conversation listening to the hearing person. Pressing the VCO/HCO button again reestablishes the text communication between the Relay user and the Relay Assistant. The Relay Assistant then translates the text from the relay user into voice to be transmitted to the hearing user.

Simultaneous Voice and Data

This mode allows simultaneous two way text and voice conversations between Relay users and the Relay Assistant. The hearing person can listen or talk to the relay user without need to activate VCO or HCO modes.

Internet relay (NZIR) is the fastest growing service offered with 43% of TRS calls being originated through the internet, accounting for 41% of the total call minutes for the year ending November 2005. NZIR is programmed using a platform-neutral, universally accepted programming language which makes it functional on various computer operating systems.

Call duration and growth of the TRS

Demand for the TRS has grown at a phenomenal rate. Figure 2 below depicts the actual calling levels (call volumes and call minutes) for the TRS and NZIR (refer Sprint Report).

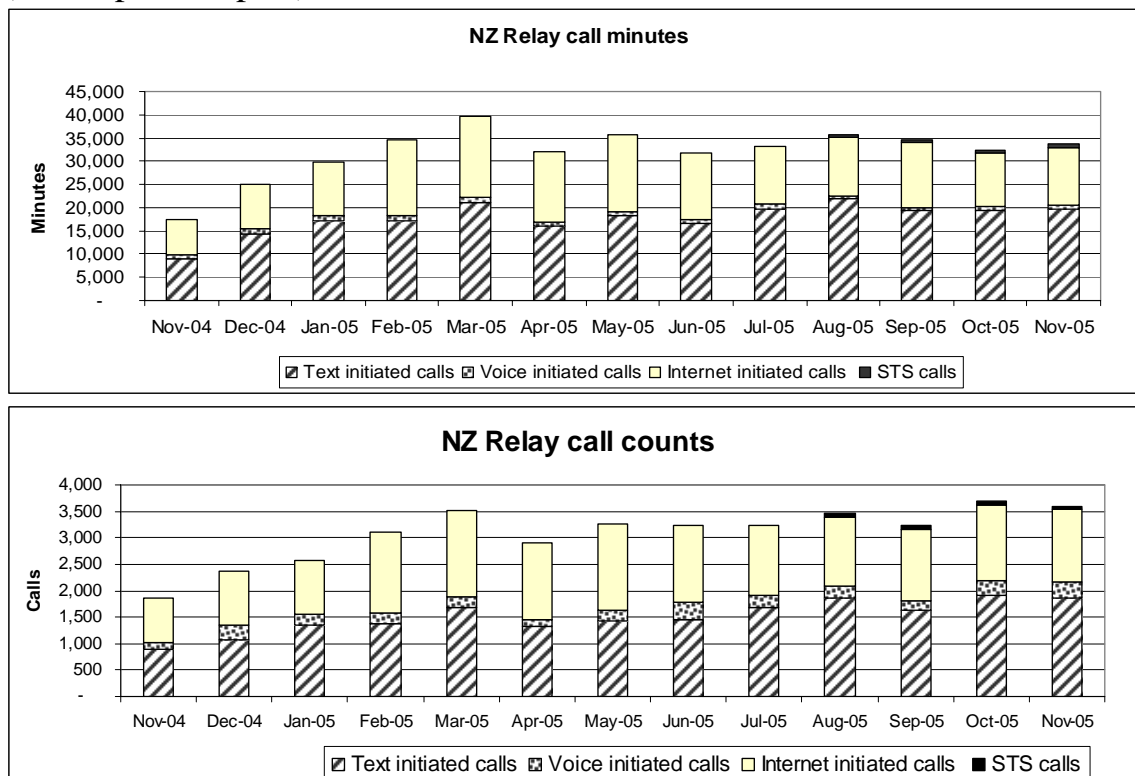


Figure 2.

Text initiated relay calls through the 0800 number make up the greatest proportion of total relay calls. Figure 3. below (refer Sprint Report) demonstrates the cumulative NZ Relay call patterns through to November 2005.

Nov 2004 – Nov 2005

Calling mode	Proportion of total relay calls (%)	Call minutes
Text initiated calls through 0800 number	56%	235,357
Voice initiated calls through 0800 number	3%	14,355
Text initiated calls through Internet web site	41%	171,742
All relay calling modes	100%	421,454

Figure 3.

Text initiated relay calls typically have the longest call duration. Figure 4. below provides comparisons of call types.

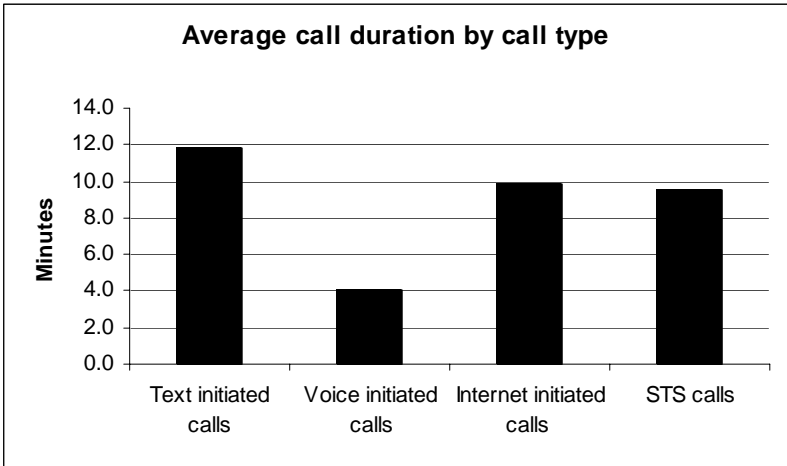


Figure 4.

Textphone-initiated relay calls are 1.9 minutes longer on average than Internet-initiated relay calls. A voice-initiated relay call to a textphone user takes about twice as long as an ordinary telephone call between two hearing people. Speech to Speech calls take a similar time as for TTY and Internet calls.

Incoming call alert

Sprint has been contracted by the Crown outside the TSO framework to establish and operate a Textphone Equipment Sales and Rental Programme. The majority of textphones are rented rather than sold. Textphone rental is subsidised by the Crown, and the rental charge is currently set at \$15 per month regardless of the capital cost of the equipment.

As it has transpired, 43% of relay calls from Day 1 have been originated via the internet by people using their own computers. Consequently the demand on the telephone pool has been lower than anticipated.

With each textphone a lamp flasher is supplied to alert a Deaf or Hearing-Impaired person that the textphone is ringing. Feedback to the Relay Advisory Group and the MED indicates that users find this inadequate as it does not provide functional equivalency to the bell or sounder that hearing people use. A hearing person can roam quite widely within their home and hear the telephone ringing. A Deaf person will only know the textphone is ringing if they happen to be in the same room as the telephone and are looking in the right direction to see the visual alert. Users would like a better signaling mechanism, namely a wireless vibrating call device. The typical retail charge for such a device is currently about \$760.00. It is desirable that TRS users be offered the choice between the standard lamp flasher and a standard vibrating alert device when they are supplied with a rental textphone.

Recommendation

A vibrating call alert device option is offered as a choice to TRS users as an alternative to a visual call alert device (lamp flasher).

Video Relay

A number of additional features sought by TRS users could potentially be added to the TRS platform. These include Video Relay and Mobile Relay.

User feedback was not specifically sought on the desirability of Video Relay services. However, some stakeholders have been commenting strongly on the need for Video Relay Services (VRS). DANZ strongly supports VRS. The reason is that for Deaf people whose first language is NZ Sign Language, it is cumbersome for them to use their second language, English.

Video Relay is available in three of the four countries against which the NZ TRS has been benchmarked:

- Sweden
- United Kingdom
- USA

It is usual for video relay to initially be offered on a restricted days and hours basis developing into a 24 hour service later.

The service is not offered free of charge to users in the way that conventional textphone or Internet Relay is. In the UK and Sweden users are required to pay a portion of the total cost on a per minute basis. Hence users must register for Video Relay service to enable billing by the relay service provider.

The average English literacy age of a Deaf person is 11 years. Hence all written material must be expressed in simple English. It can be difficult for Deaf people to grasp the meaning of a direct voice to text translated message in English due to the nuances in the language compared to NZSL. VRS allows Deaf people to communicate in their first language, improving comprehension and shortening the time a call takes compared to using a TTY.

VRS requires NZSL/English interpreters with typically 3-4 years of community interpreting experience and a very wide sign vocabulary in order to be able to handle a call on any subject that may be presented to them. As at March 2006, there are only approximately 60 such interpreters throughout New Zealand. These interpreters are very busy in the community and to remove some of them from that area in order to work as VRS interpreters would create other problems for the Deaf community.

The technology to support VRS for users is now commonly available as a mass market item from electronics stores. It is typically an adjunct to a personal computer having a broadband Internet connection. If VRS was established, there would not appear to be a strong case for including VRS equipment in the Crown textphone pool because suitable equipment is available in the commercial market, and unlike textphone equipment, such imported equipment does not require any special country adaptation to work in the NZ network environment.

Recommendation

Video Relay and Mobile Relay should be the priority service developments considered as part of long term planning for the TRS.

2. Relay Access From Public Places

TRS TSO Obligation

Clause 6.8 of the Deed states:

*“The TRS provider is required to **investigate** and facilitate a suitable cost effective technical solution in New Zealand to provide access to the TRS from public places, such as airports, hospitals and malls. A report on the outcome of facilitating an appropriate solution must be provided to the contract manager within 12 months of TRS start up”.*

Compensation to Sprint under the Relay Service TSO Deed for any solution to be implemented has to be negotiated as an additional activity charge.

Sprint provided a report to the MED on 24 November 2005 that recommended the use of new Internet and wireless technologies rather than the quickly obsolescing public place TTY technology.

Payphone trends

In the USA, Canada, the UK, Australia and New Zealand the number of public payphones has been in decline for several years due to the emergence of cellular telephones. As at November 2005 Telecom NZ had 5,000 payphones of which 400 were identified for removal. Call volumes dropped 24% in the period 2002 - 2005 alone. Some payphones are not used more than a handful of times per year.

Technology trends

- Users, including Deaf, are increasingly using the Internet and wireless technologies. Internet cafes are commonplace and Internet access is available from many libraries.
- The number of cellular telephones in New Zealand exceeds the number of wire line connections.

- Textphone access to and from the TRS is now possible in New Zealand using the recently released Textlink 9100M together with compatible cellphones operating on either the Telecom or Vodafone networks.
- Sprint launched a new cellphone-based product specifically for the Deaf in the USA in March 2006 to meet the need for anywhere, anytime communication. The bulk of Sprint's new TRS product and service offerings will be wireless based.²

Cost

The MED estimates that the equipment cost of a public place TTY in New Zealand will be in the range \$1,900 to \$4,000 per point of public access. To this must be added site rental, equipment installation and equipment maintenance.

User survey

The user survey carried out by the NRB as a part of the Stakeholder Review posed the following questions:

*How often do you need to make a call when you are not in a private home?
For example when you are in town?*

	Total %
Once a week or more	24
Once or twice a fortnight	15
Once a month or less often	16
Never	41
Don't know /Not applicable/No reply	4
Base Total	145 100

The Deaf community has traditionally had little public place communications access which may explain why almost half of the survey participants have said that they never need to make a call from a public place.

² Note that Telecom NZ currently has a cellular telephone acquisition alliance with Sprint

When you are away from home, like town or other public places, which way do you make calls?

	Age			
	24 years or under%	25-44 years%	45+ years	Total %
SMS	73	55	45	54
Internet Café	0	2	0	1
Both SMS and Internet Café	20	14	10	10
Neither - I wait until I get home	7	27	45	30
Don't know/Not applicable/No Reply	1	2	10	5
Base	30	56	58	145
Total	100	100	100	100

Note that a possible explanation for the lack of Internet Café use is that NZIR users were not as strongly represented as TTY users, with only 32% of survey participants using NZIR fortnightly or more often.

Conclusions

The number of public place phones and their usage are both declining in NZ, Australia, Canada, the UK and the USA.

Public place TTY technology is in its sunset phase and is being overtaken by Internet and wireless technology developments at an ever-increasing pace. It would not appear to be cost-effective to undertake major investment in a declining technology that is rapidly becoming outdated.

Forty percent of NZ TRS users felt the need to make a call or calls when away from home. The more frequently they used the TRS the more frequently they felt such a need. SMS and Internet Cafés currently satisfy the communication needs of 65% of TRS users in this regard.

Whilst public place access for TRS users is supported, it is not the most immediate priority for a service that is still in its infancy and has not yet been taken up by all potential end-users.

Recommendation

Text relay access in public places not be pursued for service development at this time.

3. Relay in Maori Language

TRS users and support organisations, while generally supportive of the introduction of Maori language to the TRS, did not all see its introduction as a priority at this stage. Approximately 75% of participants in the User Survey reported that English or NZ Sign Language were the two languages that they felt they could use best to communicate.

Submissions comments included:

- We would like to see the service being provided initially in Maori and Pacific Island languages with a broadening of that base to include Asian Immigrants.
- We are a multicultural community. Often speech language therapists need to use interpreters during therapy to assist their clients understand, and it would be no different over the phone.
- I doubt that there is a need for other languages, including Te Reo Maori at this stage, as not many Maori Deaf have had access to learning Te Reo. However, there could be a demand for it at some later stage as they gain opportunities to access this learning, or if Video Relay becomes available. At this stage there could be a need to use a tri-lingual interpreter so English, Te Reo and NZ Sign Language are accessible.
- English, NZ Sign Language and Te Reo Maori, the Maori Language are all official languages of New Zealand, and all should be included in the TRS. We recognise the difficulty in attracting skilled and fluent speakers of Te Reo, and it is not currently practicable to have a 24/7 Te Reo service. However it is practicable that at publicised regular peak times a relay operator fluent in Te Reo be available. There are some implementation issues with extending the Relay Service to other languages. In particular, there is only a limited pool of experienced bi-lingual interpreters in English and Maori. It is acknowledged by users that it would take time and money to train sufficient Maori/English interpreters to effectively operate as Relay Assistants.

The use of a Maori language relay service would require that the text call party be proficient in written Te Reo. However, the number of people who have an aptitude for written or spoken Te Reo appears to be low. Unlike some other languages, all Te Reo speakers in New Zealand can also converse in English. Consequently, the demand for a relay service in Maori language is expected to be low.

Overall, relay in Maori and other languages does not appear to be justified at this time compared with other potential service enhancements. However, further work is required to assess the desirability for introducing such a service in future.

Recommendation

The merits of relay in Maori language and other languages be investigated further to assess the desirability of introducing such a service in future.

4. *Speech to Speech (STS) Trial*

A requirement of the TRS TSO Deed is for the trial of Speech to Speech (STS) relay service as a possible permanent part of the TRS. A number of people have speech impairments and have difficulty accessing the telephone system independently or at all. They may not have a hearing loss, rather they have congenital or acquired conditions such as Cerebral Palsy, Motor Neuron Disease, Stroke, Head or Brain Injury, that affect their ability to be understood over the telephone particularly by people who are unfamiliar with their voice.

The trial is currently still in progress and is scheduled to run for 9 months ending May 2006. The trial will open up telephone communication opportunities for Speech Impaired people who do not have a textphone or find using a textphone cumbersome. Relay Assistants received specialist training that emphasised techniques for positive interaction with callers and specific guidelines to assist them successfully and professionally relay conversations from speech impaired users.

There has been a relatively low response rate to the STS trial with 69 calls per month since the trial started and approximately 660 minutes of traffic per month. Organisations involved in providing support services to Speech Impaired people are not surprised at this slow response rate to date. They contend that there appear to be barriers that affect people with speech impairments accessing the service. These include:

- Lack of statistical information on the incidence of people who have communication disabilities within New Zealand.
- Difficulty in locating potential users. People with speech impairments are a heterogeneous group who often do not have the communication skills to self advocate.

- Limited outreach activity to Speech Impaired people. Sprint has had to rely on support organisations to contact their members and assist them in accessing the TRS.
- Some STS users have had no experience in using the telephone and so require significant coaching.

Support organisations seek the appointment of specialist outreach contractors to facilitate more active outreach to the speech impaired community. They are aware that STS has already made a huge impact on the lives of STS users. It has opened up personal networks, increased communication with family and friends and has facilitated job interviews over the phone. STS users who responded to the STS trial survey (23 respondents), said that they use the service to make calls concerning: business, employment, education, transport, professional services and personal relationships. Support organisations contend that there is a huge potential for people with speech impairments to benefit from STS. Having a Relay Assistant available to help people understand that it is a genuine call is very reassuring.

The STS trial appears to have already demonstrated the benefits of this service to those people with speech impairments who have had the opportunity to use it. There is clearly a huge potential here. More extensive outreach activity to the speech impaired community is required to realise the potential usage of STS. Support organisations are already convinced of the success of STS.

Including STS as a permanent feature of the TRS is estimated to cost \$150,000 - \$200,000 for the forthcoming year, depending on uptake of the service. A further addendum would need to be negotiated to the TRS TSO Deed to implement this change. Given current uptake, it would be realistic for the service to have more limited availability than the other relay services.

Recommendation

Speech to Speech (STS) becomes a permanent feature of the TRS as it is in other countries.

5. *Internet Relay (NZIR)*

The NZIR trial commenced on 18 November 2004 and NZIR is now a permanent relay service. New Zealand is currently the second country in the world to offer Internet Relay Service.

The NZIR is a telecommunications relay service that enables users to make relay calls through an Internet website interface from any computer terminal with an Internet connection. NZIR functions are similar to those of the standard TTY to Voice Relay Call with one difference: the call is initiated from a personal computer via an Internet connection instead of a textphone or telephone.

The New Zealand community began accessing service from their computer Internet connection immediately upon commencement of the trial. For the year ending November 2005, 43% of relay calls were originated via the internet by people using their own computers. Patterns of use for time of day calls are also very similar for TTY and Internet. NZIR growth as a percentage of New Zealand Relay has been exceptional.

In order to ensure the appropriate use of the service, Sprint has carefully monitored the use of NZIR to detect inappropriate use. Under the direction of MED, Sprint implemented a fraud prevention system that has been successful and has ensured that NZIR is used appropriately. Sprint bars Internet Relay calls to and from international telephone members, IP addresses and locations. Sprint recommends that NZIR continues to block all International calling and utilises the full Sprint system of fraud management to ensure that all NZIR calling continues to be appropriate.

The NZIR trial was a remarkable success and the addition of NZIR as a permanent feature of the TRS is included in Addendum Number 1 to the TRS TSO Deed. As soon as the first Addendum was signed, Sprint added video clips in NZ Sign Language and developed a New Zealand specific look and feel to the NZIR experience.

6. Consultation

TSO Liable Carriers suggested in their submission, that in the interests of ongoing goodwill between them and TRS stakeholders, greater communication should be undertaken before additional TRS services are introduced. They also submitted that any new services should be specifically documented as Addenda to the Deed with Sprint or in a new Deed.

TSO liable persons have been invited to make submissions and comment on the trials of internet relay and speech-to-speech relay. TSO liable persons have also been advised periodically by the MED about the status of the relay service in terms of activity levels and given estimates of forecast relay call volumes / minutes to assist with budgeting TSO levy contributions for the relay service.

TSO liable persons also have a representative on the Relay Advisory Group and so have an ongoing contact for raising issues of concern.

TSO liable persons have had the opportunity to become more involved in the development of the relay service but have in some instances chosen not to actively participate. Publishing the relay service development process may be useful to gaining greater engagement of the TSO liable persons. It is the MED's intention to include substantive new relay services, such as Speech to Speech, in the TRS TSO Deed.

Recommendation

TSO Liable Carriers continue to be consulted on proposed new relay services

Effectiveness of Outreach

Sprint has an active outreach programme designed to inform and educate TRS users, potential users, support organisations and the general public over the benefits and operation of the TRS. Since the launch of TRS in New Zealand outreach activities include:

- Appointment and training of 6 Outreach Contractors available to specific user groups concerning their relay needs.
- Presentations at conferences, AGMs and meetings of support organisations.
- Training programmes for staff of support organisations.
- Development of a “Don’t Hang Up on Relay” video recording presentation to raise TRS public awareness.
- Development of TRS resource kits for the business sector.

Sprint is currently working alongside NZRAG to plan future marketing strategies to target potential users of TRS. The Relay Advisory Group has estimated that Sprint has to date reached out to:

- 50% of the deaf community
- 30% of the hearing community
- part of the hearing impaired community
- part of the Deaf- Blind community but it is a work in progress

There has been limited outreach to the Speech-Impaired community. The population of this community is difficult to estimate. There has been little outreach to minorities such as Maori and Asian communities.

The NZ TRS is still in its infancy. Sprint has extensive experience in developing and deploying Public Awareness and Outreach plans for relay services. It is their recommendation that their NZ Outreach activities continue to focus on educating existing and potential users of NZ Relay about availability and features, in order to increase uptake of the service and enhance users’ service experience.

1. Relay Call Refusals

A little under half the survey participants felt that the people they communicate with understand how to use the TRS to talk to them. For the other half, however, the view was that some, or in a small proportion of cases all, of the people they wished to talk to did not understand its use. This perception was stronger among infrequent users.

In the months following the launch of the TRS there were occasions when organisations refused to handle calls made by people via TRS. In the main the reason for refusal was the receiving organisation's compliance with the Privacy Act. The MED took the matter up with the Privacy Commission and a number of the organisations involved. The Privacy Commission advised that there is nothing in the Privacy Act that prevents organisations from accepting calls from the TRS.

A bulletin was produced by the MED and was sent to all government agencies with the exception of national security agencies. The call refusal problem by public sector organizations has largely disappeared with few complaints being received for several months. There continues to be some problems with private sector organizations such as banks and energy companies. Future complaints will be followed up directly by Sprint with the particular organisations concerned.

In the USA where Relay has been in service for 15 years there are still occasionally instances of call refusals where more education is required.

The continuation of public education awareness programmes is a necessary part of the TRS to improve public understanding and acceptance. This will improve over time as has been the experience overseas. Sprint is planning to launch a 'Don't Hang Up' campaign to promote awareness in the general population. Sprint has found such campaigns successful in increasing awareness to the business sector and general population.

Recommendation

An outreach marketing plan is developed by Sprint in consultation with NZRAG and support organisations to improve user participation and public knowledge and acceptance of the TRS.

Impact of Technology

The MED has studied the effect on the current TRS of the likely major shifts in technology.

1. *Current situation*

Access to the TRS

Access to the NZ TRS today is by two means:

- The Public Switched Telephone Network (PSTN) using 0800 numbers for national callers and (09) prefixed numbers for callers from overseas and from mobile phones.
- The Internet for users of Internet Relay.

The TRS platform

The platform supports the latest textphone protocol approved by the ITU-T in 1994, V.18. This protocol allows inter-operability between the original Baudot-based textphones plus other standards in use in Europe. Nevertheless, the fact that the latest protocol advance in textphones was approved by the ITU-T in 1994 is an indicator that the underlying technology is well into its sunset phase.

The NZ TRS platform is a duplicated and fully integrated Voice over IP (VoIP) platform that presents PSTN or Internet originated calls to Relay Assistants in an identical manner. The Relay Assistant's headset plugs directly into their personal computer.

The NZ TRS platform is at the leading edge of today's technology. As the New Zealand PSTN migrates to an IP network at some point it will be necessary to change the interface to the TRS platform. However this change is not expected to be required within the initial term of the TRS TSO Deed.

2. Major technology shifts

Over the next 5 years the Telecom PSTN is expected to be replaced by an IP based digital network. This will remove many constraints imposed by legacy technology and national versions of analogue standards. This in turn will lead to a more global terminal market largely devoid of national variants, greater production volumes and lower costs.

Major technology improvements can be expected to benefit the communication needs of the disabled, initially through the affordable availability of broadband wireline and wireless services to support video communication by users of NZ Sign Language.

The Session Initiation Protocol (SIP) is a network technology standard for controlling calls using IP. It has been developed by the Internet Engineering Task force (IETF) with a good focus on how the communications needs of disabled people can be met while protecting the users from possible discrimination or prejudice.

Automation of text to sign language interpreting and text to lip speaking using avatars will be supported by SIP. This technology may reduce the need for relay services because the requisite intelligence and functionality will reside in the individual user terminals configured with knowledge of the user's disability or disabilities.

Text over IP may replace conventional textphones as this technology allows interruptions without the cumbersome "Go Ahead" procedure inherent in textphone use today.

Speech to text technology, as it advances, can benefit TRS enhancement on multiple levels. In the relatively short term, it is possible that rather than typing, the agents may be able to "re-voice" for the hearing person and be able to transcribe at rates much quicker than traditional typing. Long term, it is possible that this technology could listen to unknown voices and transcribe without an agent being completely dedicated to the call and performing more of a monitoring/QA role. Similarly, text to speech could be enabled to voice for the text user to the hearing person at some point.

CapTel™ is a voice recognition technology that automatically converts speech into text on the user's special telephone. Already available and popular in the USA, there are users in New Zealand who have become profoundly Deaf after learning English but retain their oral skills who would welcome this technology.

The other main user group is the hearing impaired who have normal oral ability where progressive hearing loss can be countered by using CapTel. There is a large group of users older than 65 years who would benefit from this technology whereas they resist using textphones and voice carry over services available through the relay service.

Sprint has observed in the USA that even as technology marches forward, there are those who will continue to use legacy systems (TTYs etc) as long as possible because users are experienced and comfortable with such systems.

3. *Crown textphone pool*

As public telephone network technology is replaced from the current dial up based network to an IP based network by about 2012 the current range of textphones in the Crown pool will become obsolete. What will emerge in terms of IP textphone equivalents in the future is difficult to predict. However, trends indicate that Session Initiation Protocol will eventually be integrated into textphones and that they will have the dual capability to operate over both wireline and wireless networks with ease. This would overcome the major connectivity problem that exists today by virtue of textphones having a technological base from over 40 years ago.

Trends will need to be carefully monitored and equipment choices made in order to minimise the cost of equipment write-off to the Crown while meeting disabled people's communications needs.

The Deaf-Blind community wishes to see a device called Pac-Mate introduced to the textphone pool as the replacement for the Crown telebrailler that is no longer manufactured.

Conclusion

There is overwhelming support from stakeholders for the TRS to continue as a permanent feature of New Zealand's telecommunication services. The TRS has impacted positively on the lives of its users. The service, after one year of operation, is still in its infancy. It is still under utilised relative to the potential user base and more education is required of users and potential users of the benefits of the service. Well targeted outreach programmes will improve awareness over time.

Stakeholders have made several recommendations to refine and enhance the service. Approximately one in three of the survey participants wanted an aspect of the TRS service changed to make the service work better for them, with the three most mentioned options being:

- Faster connection (and also quicker reply/response),
- Clearer instructions to understand how to use,
- More features and options.

The NZIR trial has proven a remarkable success accounting for approximately 50% of the use of the service.

The STS trial, although less successful in terms of usage, has proven to be life changing for those who have used it. Support organisations are already convinced that STS should become a permanent part of the TRS as it is in other countries.

Stakeholder comments varied on whether there was a need for text or voice access to the TRS in other languages. This review has not captured informed views from all Maori, Pacific Island or Asian communities that could have an interest in this area.

Sprint has successfully designed the TRS to support the growth of service and to adapt to changing technology. A number of additional features including Video Relay have already been identified by stakeholders for future services. Any proposed new services should be discussed with the TSO Liable Carriers who fund the TRS.