

STAFF PAPER



AskNow Instant Messaging: innovation in virtual reference

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National and State Libraries Australasia's (NSLA) AskNow virtual reference service has been in operation for over four years. It has proved to be a successful service and continues to receive an average of 2000 enquiries each month. In implementing AskNow, the NSLA cooperative was on the cutting edge of innovation in virtual reference service provision. For the past four years, the service has operated using the 24/7 Ref proprietary chat reference software, and more recently, OCLC's QuestionPoint.

In 2006, Pascal Lupien published an article in *Online* that positioned Instant Messaging (IM) as a viable alternative to proprietary chat reference products. This article catalysed discussion amongst the AskNow Service Team about the future of virtual reference (VR) service provision. At the same time, a number of university libraries in the United States began to trial IM reference services, and to publish articles detailing the results of these trials. No large scale collaborative service had trialled IM at that stage.

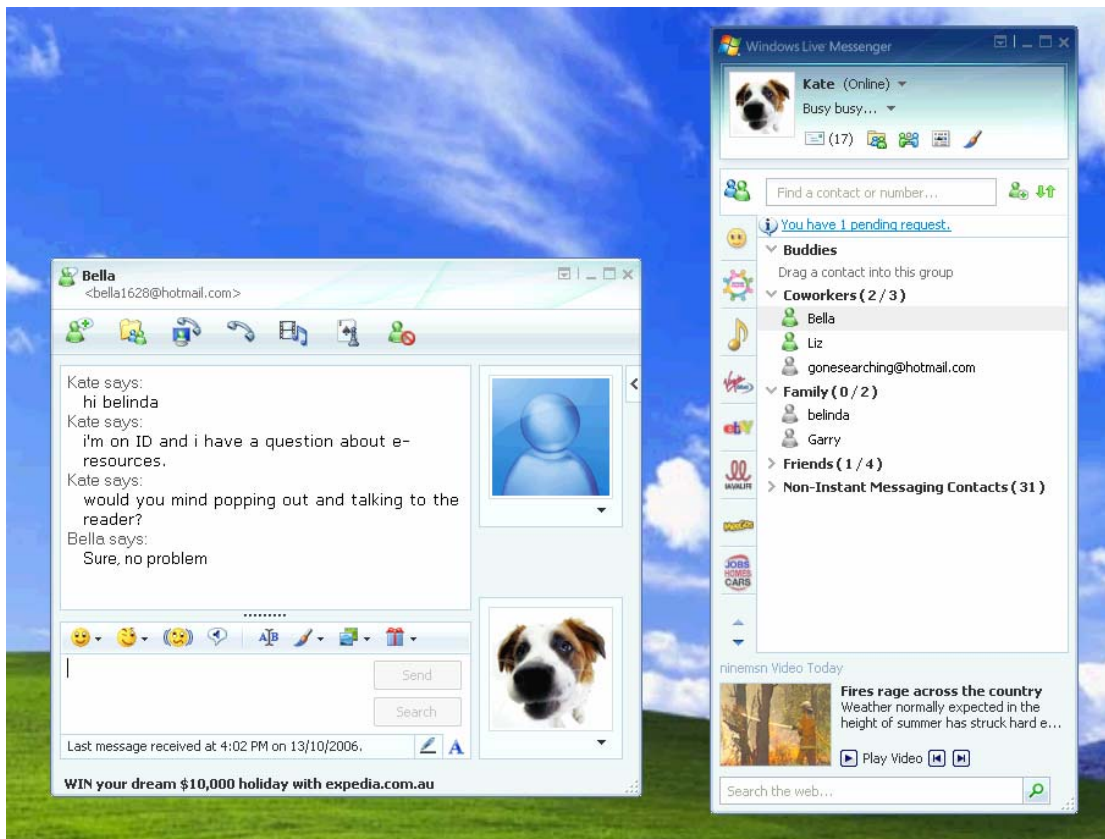
In November 2006, the National Library of Australia (NLA) recognised an opportunity to launch a trial IM service which would coincide with the redevelopment of the AskNow website. A pilot proposal was written by NLA AskNow staff and approved by senior management. It was proposed that the trial would be staffed and managed by NLA staff. The trial commenced on 16 November and continues at the time of writing.

What follows is an analysis of the key findings from the first phases of the trial and the issues encountered. The analysis is based on a significant body of data collected during the trial.

What is Instant Messaging?

Instant Messaging (IM) is a form of online, real time communication. It allows users to see whether their contacts are online, and to send them a typed message. It is similar to email as a communication tool, but, unlike traditional email, is instantaneous. Messages sent via IM appear immediately on the recipient's computer screen. In this way, IM is a truly synchronous (that is, real time) form of communication.

This interaction is facilitated by software called an IM client. This software can generally be downloaded free from the web and provides a simple interface where you can see messages and lists of contacts. Traditional IM clients operate on a user's own PC (that is, on their desktop) and users of IM typically keep their IM client running in the background as they undertake other tasks.



Windows Live Messenger IM client (MSN network)

Popular clients in Australia include Windows Live Messenger (formerly MSN Messenger), Yahoo! Messenger and Google Talk. These individual clients generally don't interoperate, so that someone using Windows Live Messenger, for example, cannot chat to someone using Google Talk. However, there are third-party clients (also known as aggregator or multi-network clients) that allow you to log in to accounts on many different networks simultaneously.

Beside the ability to send typed messages backward and forwards, IM also allows the user to

- transfer files to people they are IMing with
- set up a profile, including a photo, so that people they are IMing with can access information about them
- add people to their contact or buddy list, so that they need only double click on a person's name to start chatting
- post a status message, for example "just gone to get a coffee, be right back"
- operate in stealth mode – that is, appear offline, when they really are online. This means that the user can see who is online without their buddies knowing they are online
- block people – if the user no longer wants to communicate with someone, they can permanently block them so that the blocked contact can no longer see when the user is online, or send them any messages
- send links by copying and pasting or typing a URL into the IM client
- keep a log (or archive) of their conversations
- send emoticons to convey feelings and non-verbal cues ;)

Some IM clients offer advanced functionalities, which have the potential to replicate the functionalities offered by proprietary chat reference software, and which could

potentially offer the realisation of further efficiencies and innovations in virtual reference service provision in the future. These advanced functionalities include

- screen sharing, which allows the user to show the person they are IMing with the screen they are currently working on
- the ability to talk to contacts – some clients use the Voice-over-Internet Protocol to enable users to talk to their contacts using a microphone (just like the telephone – but free!)
- video conference capabilities, supported by web cam
- ‘conference calling’ or chat rooms, which facilitate a conversation between multiple IM users simultaneously

Why should libraries offer an IM reference service?

IM enables libraries to provide a responsive, streamlined service that meets users “where they are”, both technologically and geographically. Research indicates that IM is the communication tool of choice for an increasing number of people. An American survey estimated that 75% of teenagers who have access to the Internet use IM, as do 47% of all adults with access to the Internet (Fox and Madden, 2006, p. 3). No longer the exclusive domain of techno-savvy Gen Nexters, usage of IM is increasing and spreading into all sectors of society. In an article published in the Sydney Morning Herald in August 2006, business people are described as increasingly embracing this “presence technology” to remain in touch with colleagues and clients.

By using IM to deliver reference services, libraries can meet their users on their own ground. Rather than asking (or expecting) patrons to come to us, we are able to meet them at their point-of-need. And, the point of need is not geographically restricted to a computer. While traditional chat services that employ proprietary, web based chat reference software can only be accessed from a computer with an Internet connection, IM clients can be used on hand held devices like PDAs and next generation mobile phones.

IM clients typically have intuitive interfaces and are easy to use, which means the need for staff training is dramatically diminished. Yet many IM clients also offer functionalities that could facilitate innovation in reference service delivery. IM is a flexible and ever-evolving medium, with mainstream, freely available IM clients providing facilities for screen sharing, video calling and Voice over Internet Protocol (VoIP) capabilities. The availability of these functionalities means that it has the potential to deliver the information literacy benefits attributed to existing proprietary chat services.

How does the AskNow IM service work?

NLA staff placed a list of ‘screen names’ on the AskNow website (www.asknow.gov.au), so that patrons could add us to their contact or buddy list. We wanted to support all of the popular protocols, and to allow this, we provided users with a screen name for each of the major IM clients/networks. We setup accounts with the major IM providers:

- Hotmail/MSN
- Yahoo!
- Google Talk
- ICQ
- AIM

Setting up these accounts was a simple process that involved registering with each of the providers. We chose the screen name asknowim for our service, and were able to secure this common screen name on all the networks we wanted to use.

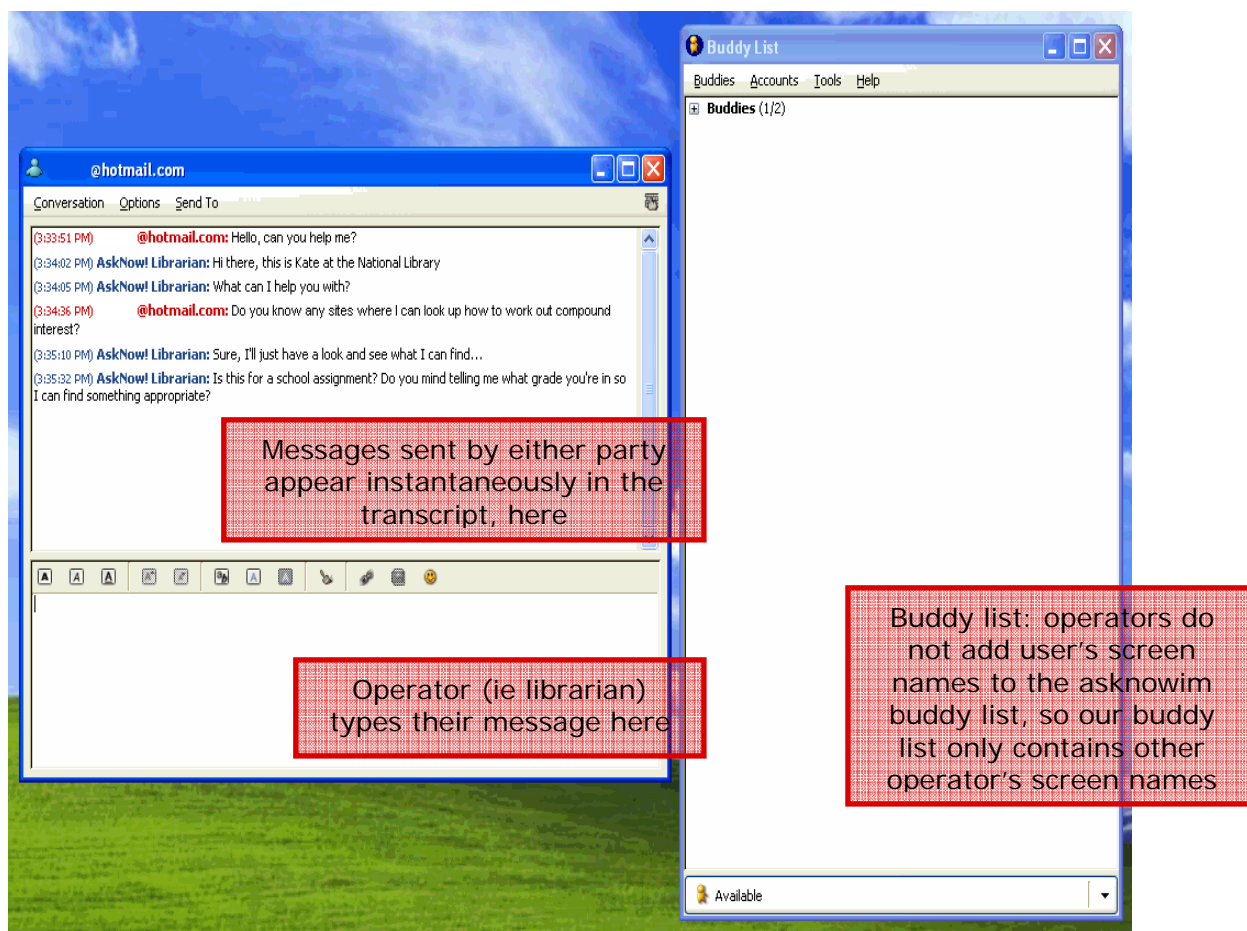
The screenshot shows the AskNow website interface. At the top left is the 'Asknow!' logo with the tagline 'Online Answers Australia-wide'. To the right, a text box states: 'AskNow! is a service of National and State Libraries Australasia (NSLA) in partnership with public libraries. Available Monday to Friday, 9am - 5pm'. Below this is a navigation menu with links: 'About Us', 'For Students', 'How it Works', 'IM Trial', and 'Contact Us'. A breadcrumb trail shows 'You are here: Home'. The main heading is 'Welcome to AskNow!'. Below this is a graphic of three stylized people icons (blue, green, red) with speech bubbles containing a question mark and an information symbol. A red arrow points to a registration form with the text 'To get started, fill in this form'. The form includes fields for 'Name (required)', 'Email Address, to receive a copy of this session', 'Confirm Email Address', 'PostCode (required)', and 'Information Level (required)' with a dropdown menu set to 'Select One'. Below the form is a 'Question (required)' text area. To the right of the form are 'Connect' and 'Exit' buttons. A blue box on the page announces an 'Instant Messaging Trial (NEW!)' with the following details: 'Monday to Friday, 11am - 1pm and 4pm - 6pm AEST', 'Chat live with a librarian using your favourite IM service.', and provides contact information for 'MSN asknowim@hotmail.com' and 'GMAIL asknowim'. A red circle highlights the 'Connect' and 'Exit' buttons.

AskNow website, with IM screen names highlighted

When a patron adds one of the AskNow screen names to their buddy list, an authorisation request appears on the librarian's screen. After we authorise the user, they are able to see when a librarian is online, and can then double click on our screen name to send the librarian a message. And that's it! The reference transaction is underway.

On the librarian side, we use the Gaim aggregator IM client, which allows multiple IM accounts across multiple networks to be monitored simultaneously, in a seamless, integrated manner. As a free, open-source product, Gaim also has the potential to be modified, should administrative or operational requirements not be met by the existing functionality. Gaim has recently been renamed Pidgin, however we continue to use the most recent beta version of Gaim at this stage.

When a user initiates an IM session by sending the librarian a message, a window pops up on the librarian's screen (see screen shot below). Subsequent new sessions also appear automatically, either in tabs in the existing window, or as separate windows, depending on the settings the librarian has selected. The librarian simply types their reply and presses the 'enter' key on the keyboard to send the message. The exchange is instantaneous, with new messages appearing immediately in the transcript window.



Operator view of IM transaction

Only one librarian can monitor a single screen name at a time – a problem that is common to all IM clients and networks and which is the most substantial barrier to effective IM service provision. This has two adverse implications. Firstly, and perhaps most importantly, only one librarian can man the service at a time, which is a particular problem for a large scale service like AskNow, because the volume of concurrent enquiries could conceivably reach the point where multiple librarians are needed to meet the demand (indeed, this proved to be the case in the later stages of the trial). Secondly, shift change over can be challenging, as logging in using the same screen name at a second location effectively closes the first librarian's session. As such, the librarian who is scheduled to take over at the start of a new shift must confer with the first librarian to ensure they have finished all active enquiries, before they can log in.

We used instructions provided by the University of North Carolina at Chapel Hill (available at <http://www.lib.unc.edu/reference/eref/gaim/>) to set up an environment variable on all operator PCs, which causes Gaim to take all its settings and log all transcripts to a central location on a shared drive. Operators manually recorded statistics for each shift on the project wiki space, which we also used to store and collaborate on documentation and to communicate about service issues.

Aims of the trial

The trial, which commenced in late November 2006, aimed to

- demonstrate a demand for an IM service
- gather data about potential users

- establish if an IM service would be feasible and sustainable in terms of resourcing
- establish whether available open source software could provide the functionality necessary in offering such a service
- develop a service model and operational plan, which could include recommendations about the type of enquiries the service would deal with (e.g. only ready reference questions), as well as any limitations on the service (e.g. should it be offered for the same hours as the existing AskNow service, or on more restricted hours).

There were also a number of secondary aims for the trial, including to

- track the impressions of librarians operating the IM service, in order to gauge training and documentation needs
- test the reporting and logging capabilities of the selected software to ensure our administrative requirements could be met
- determine what further information might be necessary to implement a live service. This could inform further investigation such as surveys and benchmarking with other libraries.

The service model and phases of the trial

The trial was initially scheduled to run for a month and was extended and at time of writing, the trial is currently in its fourth phase. A number of factors contributed to the decision to continue the trial beyond its planned end date, including

- a desire to collect more data, in the form of user survey responses, usage statistics, session transcripts, and operator impressions
- a clear demand for the service on the part of users, leading to a desire by the project team to build on the momentum achieved thus far
- a desire to test the concept of embedded IM, in the form of the meebo me widget.

It was initially proposed that the trial would be staffed three hours a day, by one operator at a time (due to the software limitations outlined above). During the pilot, NLA staff varied the service hours, in order to test different opening hours, and later to accommodate resourcing issues. Initially, the trial was staffed and administrated by the NLA, however, during phase two of the trial, the State Library of Victoria (SLV) commenced staffing the service alongside the National Library. Phase four – the partner phase – has seen the State Libraries of Tasmania and Queensland, as well as the National Library of New Zealand, also staff the service.

The following timeline illustrates the various phases of the trial and the aspects of the service model that were tested during each phase.

Nov 2006	Phase One	16 November 2006 to 26 January 2007
Dec 2006		<p>Service hours:</p> <ul style="list-style-type: none"> ▪ 1pm to 3pm and 4pm to 5pm (16 November to 24 November) ▪ 1pm to 6pm (27 November 2006 to 26 January 2007). <p>Tested:</p> <ul style="list-style-type: none"> ▪ Service hours ▪ Use of the wiki for project management, recording of statistics, and as a space for operators to record their impressions. ▪ Staffing the service from offsite using meebo

Jan 2007		
Feb 2007	Phase Two	<p>29 January 2007 to 2 March 2007</p> <p>Service hours:</p> <ul style="list-style-type: none"> ▪ 1pm to 6pm <p>Tested:</p> <p>SLV's involvement in the trial enabled the testing of</p> <ul style="list-style-type: none"> ▪ procedural documentation for set up ▪ level of support required to set up IM at partner sites ▪ procedural documentation for operators. <p>Usage:</p> <ul style="list-style-type: none"> ▪ 205 enquiries recorded.
Mar 2007	Phase Three	<p>5 March 2007 to 27 April</p> <p>Service hours:</p> <ul style="list-style-type: none"> ▪ 11am to 1pm and 3pm to 6pm (5 March to 9 March) ▪ 11am to 1pm (12 March to 27 April). <p>Usage:</p> <ul style="list-style-type: none"> ▪ 260 enquiries recorded.
Apr 2007		
May 2007	Phase Four: Partner Phase	<p>30 April 2007 to 30 June 2007</p> <p>Service hours:</p> <ul style="list-style-type: none"> ▪ 11am to 1pm and 4pm to 6pm (30 April to 1 June) ▪ 11am to 1pm (4 June to 29 June) ▪ Each partner library contributes two hours per week ▪ NLA provides between 4 and 12 rostered hours each week. <p>Partners involved:</p> <ul style="list-style-type: none"> ▪ National Library of New Zealand ▪ State Library of Tasmania ▪ State Library of Queensland ▪ State Library of Victoria ▪ State Library of Western Australia <p>Usage:</p> <ul style="list-style-type: none"> ▪ 441 enquiries have been recorded to 30 May, however Phase Four is underway at time of writing.

Evaluation and review methods

As the first large-scale, collaborative IM service in the world, the AskNow Instant Messaging trial provided a unique opportunity to capture data relating to IM service provision. A number of methods were selected to capture data, in order to inform decision-making for an ongoing service. Due to the innovative nature of the service, it was highly desirable to capture both qualitative and quantitative data about both

users' and operators' perceptions of the medium and its effectiveness for the provision of virtual reference.

A number of data gathering methods were used, including

- usage statistics
- a user survey (pushed to the user via a scripted message at the end of every session)
- in depth transcript analysis
- staff surveys and focus groups
- an operator impressions wiki space
- a costing exercise

For the transcript analysis, the transcripts for every session conducted by NLA staff between the commencement of the trial and the end of March 2007 were analysed (617 in total). Likewise, all user survey responses for the same period were considered in the evaluation (87 in total).

Usage of the service

During the trial, statistics were kept manually by operators and recorded on the project wiki space. We recorded statistics for both the number of enquiries received, as well as the number of users we authorised to contact us. Usage of the service increased steadily throughout the trial, with more than 1200 enquiries received by the end of May 2007. Initially, the number of concurrent enquiries received was manageable by one librarian. By May, however, the number of concurrent enquiries received, particularly in the late afternoon, became too many for one librarian to manage on their own.

It was anticipated that repeat usage of the IM service would be high, given that IM is a 'presence technology', allowing users to see when the librarian is logged in, without needing to navigate to the AskNow website. In fact, this proved to be the case, with more than 40% of users using the service more than once. Out of a sample of 500 transcripts of sessions that took place between November 2006 and March 2007

- 16.3% of users used the service twice
- 19% of users used the service between three and five times
- 4.5% of users used the service between 11 and 15 times.

Usage of IM by month

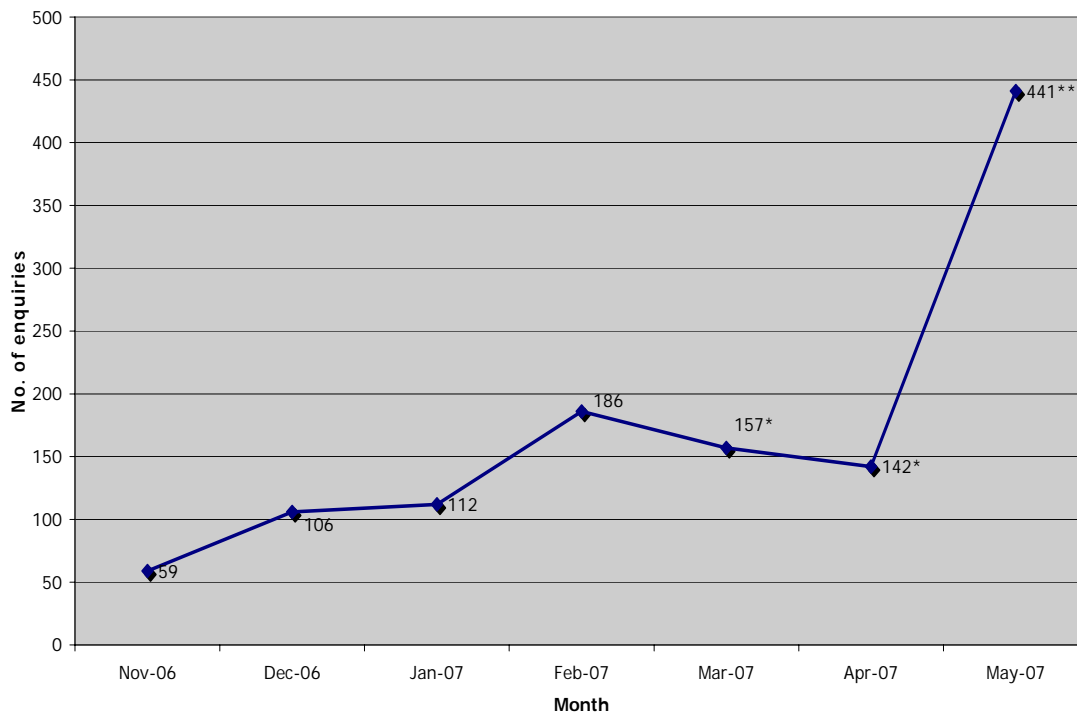


Chart 1: Usage of IM by month

*Service hours were decreased to two hours per day in March and April, which accounts for the apparent decline in usage

**Service hours were increased to four hours per day in May

Users of the service

43% of users who responded to the user survey had not previously used AskNow. This is perhaps indicative that the IM service is attracting new users. Indeed, this trend has been reported anecdotally by other services that have begun to offer IM. In an email to the Dig_Ref e-list on 17 May 2007, Sarah Houghton-Jan said that in the last six years, she has tracked virtual reference usage trends for two US county public library systems, and has noticed a steady decline in usage. However, she indicated that upon launching IM a "few years into that decline... [usage increased] dramatically and consistently. In surveys we did of users, it did not appear that it was that [sic] the traditional virtual reference users moving over to IM, but rather totally new users accessing our services through IM." It appears that IM may have appeal for a new market and might therefore offer us an opportunity to reach new user groups.

The age profile of IM users differs from that of AskNow. Like AskNow, however, the IM age profile also over represents the under 24 age group when compared to Australian Bureau of Statistics population statistics. 67% of user survey respondents were under the age of 24 years (compared to 46% of AskNow user survey respondents in the same period). Operator experience indicated that there were significantly more enquiries from upper secondary and tertiary students on IM than on AskNow, an observation that is supported by the age profile data. In the survey period, 26% of AskNow users were aged 14-24 years, while for IM, 45% of users fell in this age bracket. IM also had slightly more users in the 24-34 years age bracket than AskNow, but interestingly, had significantly less users aged over 35 years than AskNow (13% for IM; 39% for AskNow). This is arguably attributable in part to the time of day the

IM service operates as compared to AskNow: while AskNow operates all day, IM operated predominantly in the afternoons during this period, which is the time when students are typically doing their homework. It would be interesting to see what would happen to this comparative age profile if both services operated for the same hours each day – it is likely that the distribution of age would become more alike.

Age profile for IM and AskNow users

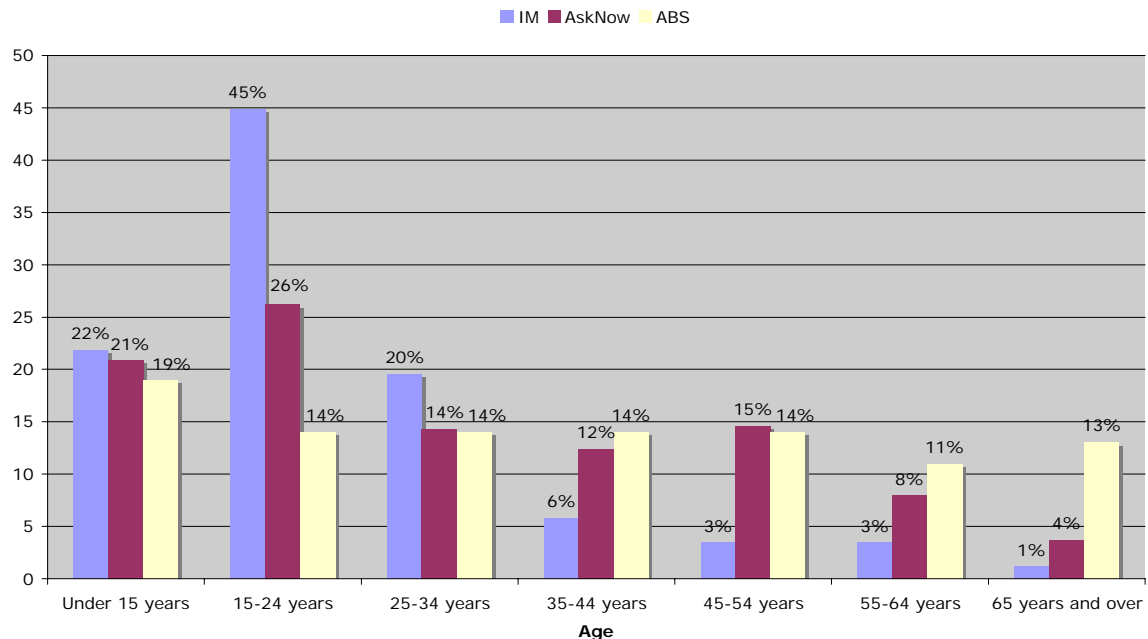


Chart 2: Age profile of IM and AskNow users (source: IM user survey data and AskNow user survey data, November 2006 to March 2007; ABS cat no. 3101.0)

Nature of enquiries

Transcript analysis enabled the broad categorisation of enquiries into the following subject categories:

- 61% general reference, for example
 - *can u please help me find info on education in australia prior to 1914*
 - *could you please find me some information on: the contribution of religion to society and culture*
- 20% categorised as 'no question', of which
 - 34% were instances where the user disappeared before asking a question
 - 26% were 'just chatting'
 - 16% were inappropriate enquiries
 - 10% were instances where an initial message from the user was not responded to by the librarian
 - 4% were enquiries about the service
 - 4% were initiated out of service hours
- 6% related to library services, for example
 - *is there any alternative option to access internet inside the library, excluding wireless*
 - *Does the Mobile Library bus bring books out to [my suburb] that I reserve on the internet?*
- 5% information technology related, incorporating both requests for information on IT topics and helpdesk style requests. For example

- *i can't get itunes to work. can u help me get all my music files into itunes?*
- *is there any way you can download a video from youtube or to get it on a power point slide show?*
- 5% personal or 'life skills', for example
 - *i am an aussie and im in the us my ticket to go back 2 australia got canceled and now im stuck here*
 - *hello, i'm going for a library tech. job interview, just want to ask 4 some advice*
- 1% related to locating people, incorporating requests for contact information for people and organisations, for example
 - *i'm wondering how i can find my biological mother*
 - *i am in tasmania. can you please find me the coke representative and hartz representative here?*
- 1% related to government information, for example
 - *i need to find the australian federal gov policie on neuclear power.*

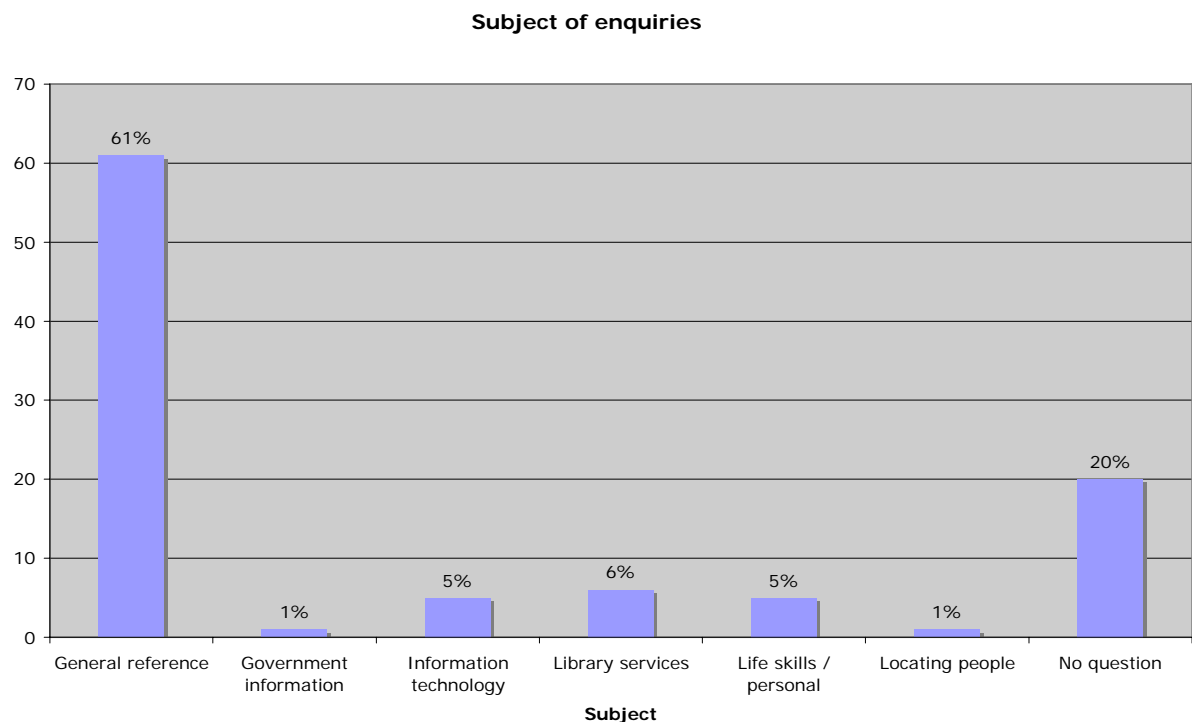


Chart 3: Subject of enquiries (source: transcript data November 2006 to March 2007)

Interestingly, during the trial, operators expressed concern that IT and 'life skills' related questions were more prevalent in IM sessions than in AskNow sessions.

Many of the 'reference' questions are more lifestyle ones or how do I (IT technical).

Today I felt like I needed to morph into an IT guru. Spent the entire shift trying to help a user move her music files into iTunes, which involved coaching her through FINDING the files on her computer. Very challenging! But we got there! I also had a guy who wanted to build a role playing game (computer game) in Java, but he didn't know how to code Java, and

wanted me to find him a site that would tell him how to do the coding, and how to build the game.

The data from transcript analysis indicated that a surprisingly low proportion of enquiries were in fact related to these subject areas (10% in total for both life skills and IT enquiries). Comparatively, Kortz, Morris and Greene (2006) report that 15-20% of enquiries received by their 'traditional' VR services could be categorised as personal and recreational queries (Kortz, Morris and Green, 2006, p. 14).

Anecdotal evidence suggests that the subject or topic areas of questions received via IM are similar to those received on AskNow.

I think IM is just as effective as the web-based AskNow. The questions and client group are about the same

It has not been possible to compare subject areas for AskNow and IM at this stage, as the subject categories used in the 2006 AskNow Evaluation report are different to those used for the IM transcript analysis. It would be useful, however, to undertake this kind of comparison in the future.

Resolution of sessions

73% of enquiries were completed in the IM session (compared to 66% of AskNow enquiries in 2005, as reported in the 2006 AskNow Evaluation report), with 3% being referred in to an email service for follow up. Of the 18% of enquiries where the user disappeared, a large proportion had been answered either completely or partially before the user disappeared. That 73% of enquiries were completed in session, with a further proportion being answered in full or part before the user disappeared, suggests that the type of enquiries received are well suited to the medium.

Session resolution compared to AskNow

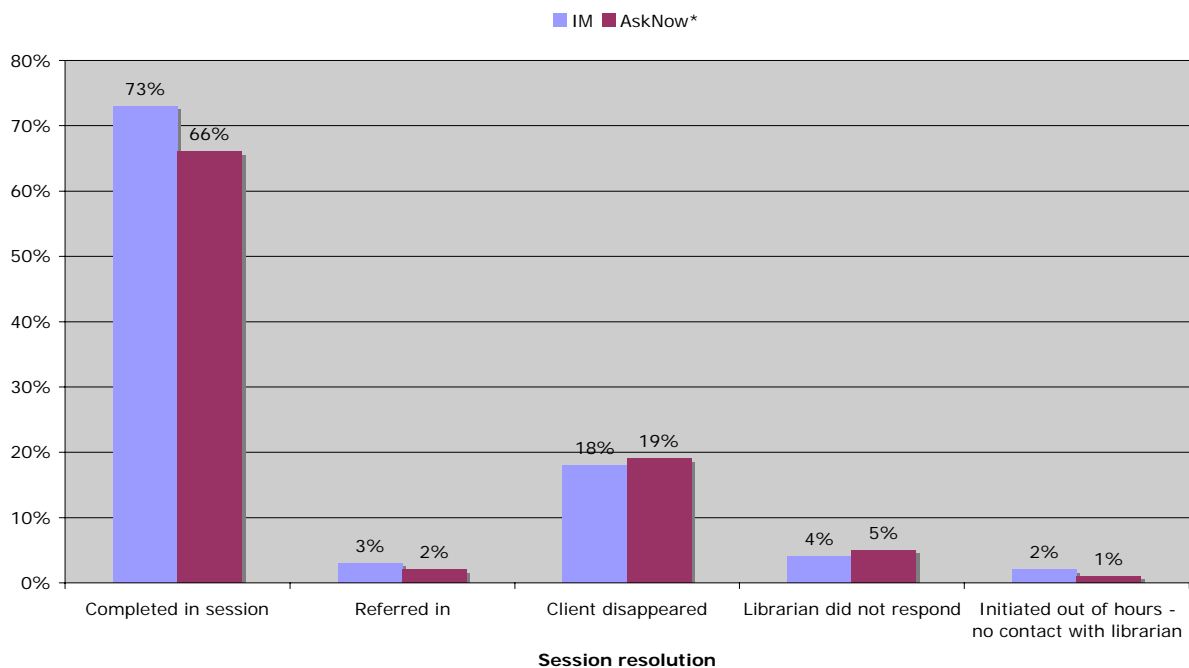


Chart 4: Session resolution (source: transcript data November 2006 to March 2007 and AskNow Evaluation report 2006)

**AskNow data is from 2005, as reported in the 2006 Evaluation report. Data was not categorised in the same way as IM data, but has been retrospectively put into the same categories as used for the IM transcript analysis to allow comparison.*

Length of sessions

Length of session data was collected according to how long interaction between the librarian and user continued. 40% of transactions were ended in 10 minutes or less, with a further 17% ending in 15 minutes or less.

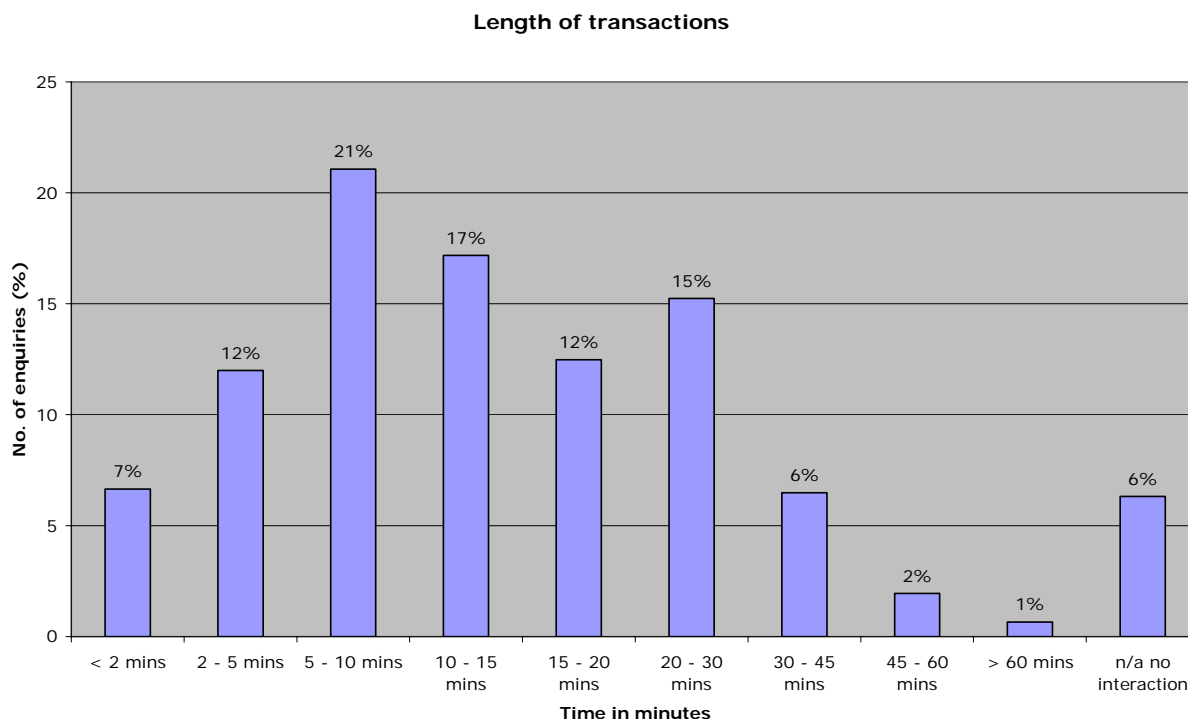


Chart 5: Length of transactions (source: transcript data November 2006 to March 2007)

Prior to the trial, it was anticipated that as an instantaneous, truly synchronous form of communication, IM could potentially reduce the amount of time spent interacting with users, as compared to the existing AskNow service. In practice, a number of factors combined to cause session times to be greater than expected. These factors included

- operators assisting multiple users simultaneously, resulting in slower conveyance of search results
- multitasking on the part of users means they can sometimes be slow to respond
- users generally have IM running while doing other things, and as such, they are more inclined to wait while the librarian hones their search strategy or explains concepts, as opposed to being content to end the session after being provided with one link or search strategy
- IM promotes dialogue with users in a way that proprietary chat reference products do not, making the reference interview more interactive and allowing the librarian to clarify the query throughout the transaction – increased dialogue results in increased session times
- the synchronicity of IM means it is markedly easier to guide the user through search processes, and as a result, sessions can be longer due to an increase in textual instruction.

User satisfaction with the service

Users have been very satisfied with the level of service they have received when using IM. Of users who responded to the user survey, 91% rated the service as very good or excellent, with a further 6% rating the service as good. No user rated the service as poor. Additionally, 100% of surveyed users said they would use the service again.

How would you rate our IM service?

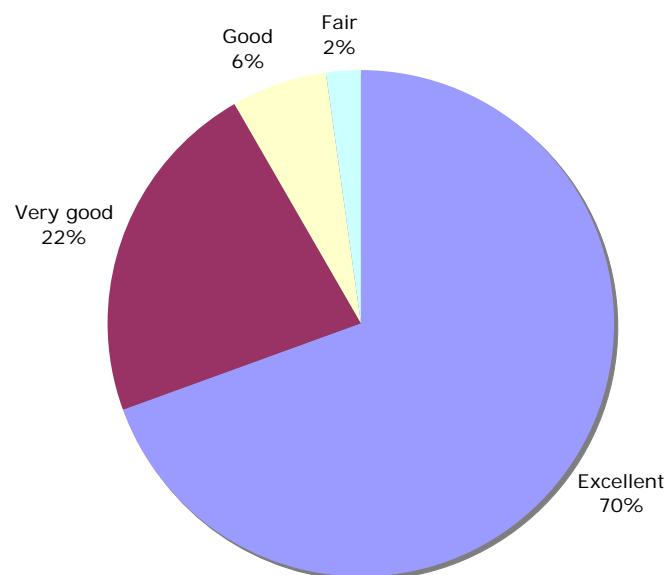


Chart 6: How would you rate our IM service? (source: IM user survey data, November 2006 to March 2007)

Comments from users supported these statistics, indicating a high level of satisfaction with the service:

You have very high quality librarians, well the one tht helped me was very helpful and obliging to help me out. It put my mind at ease for my assignment research to know tht someone was there to help me out and the info they managed to obtain was extremely useful. A very good service.

I am housebound with health problems and this is a great way I still have access to resources to assist with researching the many aspects that are associated when engaged in Family History.

This service is fantastic!!

Comments from users indicate that they are also very pleased to be able to make use of an IM service, and valued the ability to use their IM client of choice to access the service

I preferred IM cause it was a lot more convenient then opening the website as i have windows msger open most of the time and its easy to click on asknow as a contact..very good and a lot easier to access the info

... it is easier to talk to a librarian saves you opwning a window every time you have a question and wait to get connected.

Thanks, great to see this kind of open and easy innovation... it hits the mark perfectly.

Additionally, a large proportion of surveyed users (71%) indicated that they preferred IM to the AskNow web form, with no user preferring the web form.

Staff perceptions

IM staff have generally been very pleased with both IM as a medium for virtual reference and the opportunity to innovate in service provision. On a scale of one to five (with five being very effective, and one being not effective), 93% of surveyed staff indicated that they thought IM was quite effective, effective or very effective (rating 3, 4 or 5) as a medium for virtual reference.

Effectiveness of IM as a medium for Virtual Reference

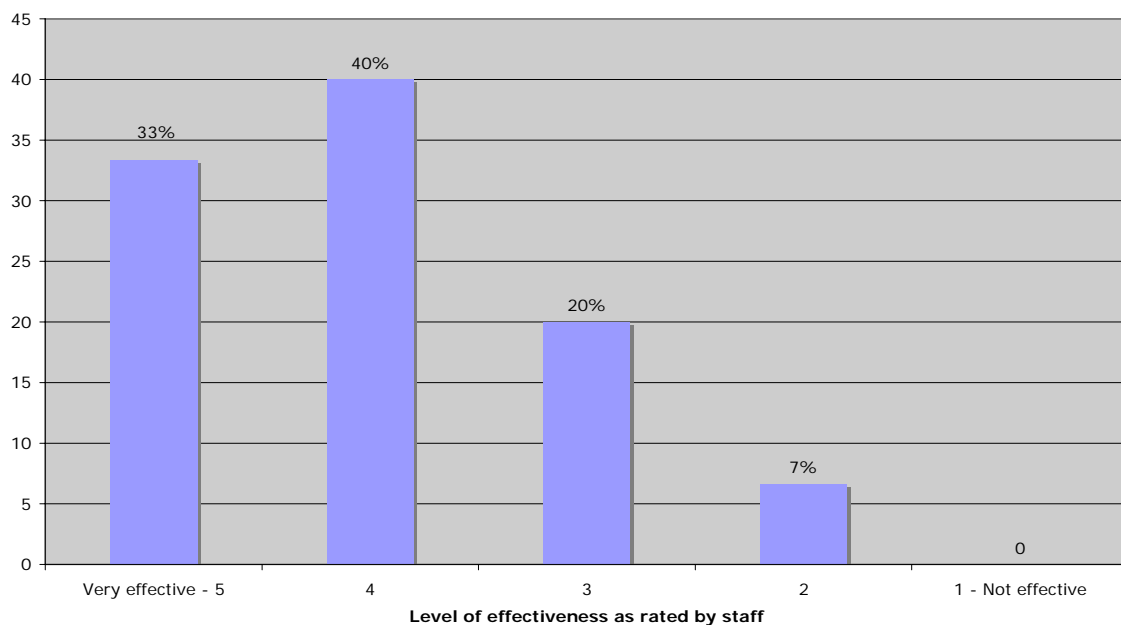


Chart 7: Effectiveness of IM as a medium for virtual reference (source: staff experience survey data)

Of those staff who rated the medium as quite effective or better, comments indicated that any concerns they had with the effectiveness of IM revolved around inadequacies with the software, particularly in relation to the ability to have multiple operators logged in simultaneously, rather than any endemic problems with the medium itself.

Having more than one operator is crucial – too many clients at once is truly scary, exhausting and demanding on one's professionalism ie. giving clients the best service possible.

The comments made by a small number of operators who rated the effectiveness of IM on the lower end of the scale indicated that their perceptions were likely influenced by their having experienced a disproportionate number of inappropriate enquiries.

Staff found that IM compared very favourably with the software used for AskNow, OCLC's QuestionPoint. Traditional VR software does not offer the true synchronicity that IM does, and conversational flow is often impeded by the time lag that occurs due to the server refresh that pushes text into the transcript. Experienced AskNow operators valued that IM enabled them to readily engage the user in a true conversation, albeit in written form.

As a medium for virtual reference I think it is better than chat reference or email – more immediate and synchronous

From the operator point of view I found it more effective than traditional virtual reference because it was quicker, more responsive and informal – I felt like I was really connecting with most of the clients I dealt with, without the barriers of traditional VR mediums (timelag, pushing pages and trying to cobrowse, which I generally find confusing and frustrating for both operator and client).

Speed and ease of interaction were seen by operators as primary benefits of the IM service. They indicated that IM facilitated easy dialogue that ultimately had a significant positive impact on their ability to engage the user in a reference interview. Comments in the staff experience survey and on the operator impressions wiki page indicate that staff enjoyed the ease with which they were able to clarify the user's information need, to check if they were on track with the resources and strategies they sent to users, and to clarify if they had adequately answered the question. Librarians found the process of conducting a reference interview to be easier with IM than with AskNow.

I think it's effective because the reference interview is easier. It felt more like a real 'chat'.

reference interview is easier and immediate responses help keep flow of real conversation.

the instantaneous nature of the medium means I was having real conversations with clients and could try to gauge how they were progressing and if the information I was sending was helping.

Arguably, the fact that IM facilitates an easier, more interactive reference interview could lead to improved service quality. It would be useful to conduct quality analysis of both IM and AskNow transcripts and to compare the results, in order to ascertain whether the increased ease of interaction offered by IM has a significant impact on service quality.

Wiki for project management

A wiki space was set up on the NLA wiki server to act as a central location for all planning, development and management activities and to store and collaborate on documentation. The IM wiki is a space for

- storing and accessing procedural documentation

- recording statistics
- publishing and collaborating on the roster (in the early part of the trial)
- storing and accessing scripted messages for copying and pasting into IM sessions
- collaborating on service model issues
- recording impressions, asking questions, collectively solving problems
- compiling background reading lists
- tracking articles on the trial that have been written for publication.

The wiki has proven to be a great success, largely because it facilitates collaboration and communication. Indeed, it has been one of the biggest successes of the trial. The most useful aspect of the wiki has undoubtedly been the operator impressions page, where operators recorded their frustrations and successes throughout the trial.

I found the wiki really useful as a kind of support tool – when I was having trouble with something, it was comforting to know other people were too.

The wiki was very useful for operators, esp. impressions and documentation

By contributing their impressions to the wiki, operators provided support for each other: they validated each others' concerns, shared their own strategies for managing particular situations, and started discussion that lead to the development of scripts and other strategies for dealing with particular situations. In the collaborative environment in which AskNow operates, the ability to initiate discussion in an easy to use online space cannot be valued highly enough.

IM system architecture

During the trial, it became evident that, while IM as a medium is suitable for virtual reference service provision, additional functionality is required to allow for a truly responsive service, and to meet administrative requirements. The following functionalities have been identified as being necessary in a future IM software solution

- ability to have multiple librarians logged in and monitoring the same screen names simultaneously
- queuing or automatic routing of users
- automated statistics logging functionality
- automated workflow for referring enquiries in for follow-up
- better transcript archiving, including easier access to transcripts.

The ability to have multiple librarians logged on and to have queuing and/or routing of users are imperative functionalities. As the level of traffic on the IM service has increased, it has become evident that it is not possible to run the service with a single librarian. Development of an ongoing service is contingent upon the availability of software that can support multiple librarians and queuing or routing of users.

We have developed a multi-faceted model for an IM system architecture, which has been informed by discussion with a US exploratory group and a number of other US academic libraries. The model comprises

- a Jabber IM server
- a routing component that is permanently connected to the chat endpoints that are distributed to users (for example, asknowim@hotmail.com) and which automatically routes incoming enquiries to librarians according to a set of algorithms

- a dashboard for shift management, which is linked to the routing component, and which will incorporate an overflow queue
- a web based IM client for librarian use (likely to be meebo)
- a browser based, anonymous entry point for patrons, which will be embedded in the AskNow home page, and in other appropriate locations (likely to be the meebo me widget)
- an administration module for transcript archiving and report generation.

Specifications for the system have been written and the system itself is currently under development. Most of the components require little or no programming, as they already exist as end user products (including the Jabber server, librarian IM client, and web based anonymous entry point). The routing component, however, will be built in-house at the NLA.

Conclusion

The case for an ongoing IM service is perhaps made best by the comments an astute operator provided in the staff experience survey:

I think IM is definitely the way forward for online reference...the positive aspects of IM are that it's relatively easy and cheap to set up, its flexible, so we can respond to changes in technology and user habits, and it really is in the users' space – providing the kind of easy, seamless online experience users expect from the web. ... I think traditional VR software ... is obsolete – in the Web 2.0 (and whatever post-Web 2.0 will look like) environment I can't imagine users being willing to access a website, navigate to a web form, submit the web form and wait for an operator.

The trial clearly demonstrated a demand for an IM service: between November 2006, when the trial commenced, and the end of May 2007, more than 1200 enquiries were recorded, and 100% of surveyed users said they would use the service again. Moreover, the percentage of enquiries completed in session indicates that the type of enquiries received have been appropriate for the medium. The majority of operators found the medium to be suitable for virtual reference service provision, citing speed and interaction as the key benefits that IM offers over proprietary chat reference products. However, some additional functionality would improve the IM experience for both operators and users.

The IM trial proved the concept of IM reference service provision as feasible and allowed us to test service models, software and sustainability issues. The next challenge will be to investigate a sustainable service model for an ongoing service. However, the implementation of an ongoing service is contingent upon the development of a suitable IM system architecture. While currently available software may be adequate to facilitate smaller scale services, the level of demand for the Australia-wide AskNow service is too high to proceed with an ongoing service without some additional functionality. We will continue to explore options for an ongoing Instant Messaging service in the coming months.

Further information

Email info@nla.gov.au

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References

Fox, Susannah, and Madden, M. (2006). "Generations Online". Pew Internet and American Life Project. http://www.pewinternet.org/pdfs/PIP_Generations_Memo.pdf (accessed June 3, 2007).

Houghton Jan, S. (2007). "Virtual Reference Use - Increasing? Decreasing?". Email to DIG_REF listserv. May 17, 2007.

Kortz, L., Morris, S., & Green, L. W. (2006). Bringing together teens and chat reference: reconsidering 'the match made in heaven'. In R. D. Lankes, E. G. Abels, M. D. White & S. N. Haque (Eds.), *The virtual reference desk: creating a reference future* (pp. 3-22). London: Facet Publishing.

Lupien, P. (2006). Virtual reference in the age of pop-up blockers, firewalls, and Service Pack 2. *Online*, 30(4), 14-16, 18-19.