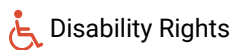


BARRIERS TO USING AUTOMATIC TELLER MACHINES



BARRIERS TO USING AUTOMATIC TELLER MACHINES:

A REVIEW OF THE USEABILITY OF SELF-SERVICE BANKING
FACILITIES FOR AUSTRALIANS WITH DISABILITIES

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On Behalf of

The
Australian Human Rights and Equal Opportunity Commission

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1 Introduction

Ironically many blind people were amongst the first to embrace and begin widely using automatic teller machines (ATMs), but now it is this very same group who, more-often-than-not, are unable to use ATMs with a satisfactory degree of confidence.

Automatic

Teller Machines are now a way of life. They are often the only way to conduct some banking activities for many, due to branch closures and the increases in face-to-face transaction fees.

Over

70 percent of Australians surveyed by the ABS in 1999 now use ATMs, an increase of five percent over the previous year. ATMs are now a normal part of daily life.

This

report has been prepared on behalf of the Australian Human Rights and Equal Opportunity Commission (HREOC) as part of their enquiry into the impact of E-Commerce and new technologies on people who are older or who have a disability. It explores the accessibility barriers that ATMs present to people with a variety of disabilities, particularly examining the access barriers experienced by people who are blind, vision impaired or who have reading, learning or intellectual disabilities. The examination recognises the increase in disabling conditions that often accompany the ageing process, and the impact these disabilities have on ATM accessibility and use.

A

related report is also being produced for the Human Rights Commission which examines ATM accessibility for people with a range of physical disabilities,

which complements this report's focus on the accessibility of ATM information.

There

are no banks in Australia providing ATMs which are truly accessible to people who are blind or vision impaired. Some machines contain a raised dot on the 5 key, others have Braille numbers on the numeric keypad, and others still have no tactile indicators whatsoever. Although the Bank of Queensland provide some recorded messages, no ATMs in Australia provide voice output for the information presented on the ATM screen. Token Braille on key-tops is the extent to which the majority of banks in Australia have gone to, in order to make ATMs easier to use - and that was predominantly in response to the threat of Disability Discrimination Act (DDA) action.

The information, recommendations and conclusions of this report are based upon a variety of recent studies, reports, press releases, internet postings, discussions with banks, ATM manufacturers and others. A recent Australian survey conducted by the author and completed by nearly 20 blind and vision impaired people in Australia, who have used ATMs, adds up-to-date Australian content to this report.

Other key resources consulted include:

§

Various RNIB/European Union studies and reports written by Doctor John Gill including the Saturn project; and

§

A 1995 audit of accessibility of ATMs in Canada, commissioned by the Canadian Human Rights Commission.

2 Selected Quotes from Australian Survey

"I used to use them [ATMs] about fortnightly until they became increasingly inaccessible, and now I rarely use

them and now, never without assistance".

"I have been trying to use them on and off from when they were first introduced – I just keep hoping one day I'll master it."

"The newer ones are less complicated, but here in Queensland they are frequently positioned where the sun shines directly onto the screen, making it impossible to read ..." – from a Low Vision respondent.

"I found the more modern machines much harder to use" – from a Blind respondent.

"The braille isn't useful until you know what the key means, and once you know what the key is, braille isn't really necessary"

" I've never actually completed a transaction independently yet. On a number of occasions I have had my card 'eaten' by the ATM and I enjoy the frustration of the staff when they have to open the unit to retrieve my card".

"I feel as a VIP [vision impaired person] that if there was a standard format it would be easier to access ... ie 'withdrawal' at the top left hand corner ..."

"I can generally perform the transaction I need to, the hardest thing is if the machine's out of order/money or some other problem; often it is hard to distinguish whether it's something I'm doing wrong, or is it the machine"

"Most of them [ATMs] are not very logical. There is one type that is very easy to use. But I have never been able to walk up to an ATM unassisted ..."

"I used to be able to use them quite well - once I learned the sequence and where all the buttons were. Now, the keypads and the fact that keys have different meanings during the transaction, has made using ATMs almost impossible".

"I am slower than others in the cue and struggle, particularly when I use a model that I am not familiar with"

..."I tend to find a couple (usually older ones [ATMs]) and stick to them. This can sometimes mean that I go out of my way to access my money".

"The layout is often not consistent. For example, it might ask you a question that requires you to push a yes or a no button. But the next time it asks you to answer yes or no, the buttons are in a different place ..."

" ...Not getting any feedback from the machine. This is why I only use the machines for withdrawing cash ..."

"Why can't voice be attached to the ATM so you know what buttons you have pushed, except when entering your PIN number".

3 Australian ATMs now and in the future

The intent of this short section is to briefly examine the current ATM environment and how it might change over the next few years. These possible changes are likely to have quite significant impacts on accessibility, and the options

available to banks and others.

3.1 Current Installed ATM Base

In

Australia, there are two predominant brands of ATMs, Dibold/IBM and NCR/AT&T

3.1.1 IBM/Dibold

The

ATMs labelled as IBM were made by Dibold in the US, and more recently IBM has lost the contract to sell and support Dibold ATMs in Australia. But, for all intents and purposes, Dibold and IBM ATMs are one and the same.

The

Early IBM machines were installed in the early 80's and are a favourite of people who are totally blind, due to their keyboards which allocate only a single function to each key. Because the screen is single line the system doesn't present dynamic menus which commonly lead to uncertainty for blind users. Because of the clear operating sequence, the good layout of the keyboard into different zones for different groups of functions, the loud beeps acknowledging key-presses, and the minimal reliance on the screen, these early ATMs heralded an era where blind people could withdraw cash with full independence – and without the need to find assistance to complete paper deposit slips, and avoiding the necessity to sign their name.

However

since the release of newer full-screen ATMs, the wider public have realised that the original IBM ATMs left a lot to be desired. People with low vision also found that the newer style machines were a lot easier to read and use.

This

point demonstrates that one user interface approach does not suit all and that flexibility and configurability are necessary to meet the differing requirements of people in our society.

Many

of these early original IBM machines still exist, but are gradually being replaced by more modern and less accessible (to totally blind people) units.

Dibold

now manufactures more modern ATM models containing full screens and menu keys. Some of these newer machines may be upgradeable to 'Voice Guidance' technology for speaking prompts and menus to the user.

Some

of the Talking ATM trials presently occurring in the United States are based around Dibold ATM technology.

3.1.2 NCR/AT&T

For a

short period in the 90's NCR was owned by AT&T so some Australian ATMs may be branded AT&T. More recently, though, NCR is now trading under its original name. NCR is based in Dundee, Scotland, and also has a human factors research office in London.

In

collaboration with the RNIB and others, NCR has developed a variety of accessibility technologies for their ATM systems. In late 1999, NCR began advertising a new series of ATMs designed for accessibility and usability by all. These units have anti-glare screens, positive action keyboards, optional 'Audio Lead Through' and a range of other features.

3.2 Trends

At

present in Australia the vast majority of ATMs are owned or leased by banks and financial institutions. Trends overseas and progressively in Australia are leading to more low-cost, limited function ATMs being installed by shopping centres, clubs, public sporting venues and the like. In general terms, the lower cost ATMs will be more difficult to make accessible for a wide range of people with disabilities.

At

present ATMs are not based on internet technologies such as HTML XML and the like. Existing ATM interaction screens are carefully scripted and are not simple to change or modify from one user to the next, or when new features are to be added to the service. The machines conduct part of the transaction using their local in-built computer and in most cases also contact a mainframe to obtain details of account, and to process transactions etc.

There

is a trend for public information kiosks to be based on web technologies, and there is also a trend for ATMs to provide more than just cash to the user. These two trends are likely, in time, to result in internet-based machines which can offer a range of financial services, and which will be more easily adapted to the specific preferences of the user.

More

recently, ATM manufacturers see their products as self-service machines, with the capability of providing other banking or generic services. These might include providing on-line access to information on banking services, ticket issuing, bill payment etc. In the future, ATMs may be used to transfer value to a smart card-based electronic purse, instead of issuing physical cash. The distinction between ATM's and Information kiosks will continue to blur over time.

Another

trend which may have an impact on accessibility and consistency of user interface is the growing use of ATMs for advertising and promotion of goods and

services. Using ATMs for advertising is the key theme of this year's ATM Industry Association Conference being held this February.

Advertising

and other unexpected steps in a person's interaction with an ATM may cause confusion or loss of concentration for some groups of people with disabilities. For example, some ATMs in the US will unexpectedly ask the user if he/she wishes to make a donation to a charity, thus changing the flow of interaction.

In

the United States, ATMs also sell stamps, gift certificates for shopping centres etc, something which may gradually take hold in Australia.

In

Canada and the United States there are now several banks employing or developing ATMs with voice output. These machines have an earphone jack and can "talk" the user through the ATM transaction, prompting for user responses and reading screen messages as required.

Two

approaches are taken when making an ATM voice enabled – either adding voice to the existing screen layouts, or developing Telephone Banking-style menus for ATM interaction, so the user can use the ATM numeric keypad to conduct the entire transaction.

One

bank has installed talking ATMs over the last couple of years in Canada and several banks in the United States are now developing talking ATMs as a result of law suits from prominent organizations of people who are blind and vision impaired. As the wider benefits of talking ATMs are realised by other groups who have difficulty reading, it is quite possible that ATMs with speech output will become the norm.

ATMs

of the future are likely to work with smart cards, and these cards could contain a set of user preferences instructing the machine to present

information, either in large print, in audio or pictorially.

Smart

cards and biometric techniques are starting to be used more frequently for ATM identification. Facial recognition, thumb and finger printing, iris recognition and voice print analysis have all been trialled and are being considered for ATM identification as a replacement to use of PINs. For people with disabilities, who may not be able to provide sufficient biometric information, disability researchers in the UK advocate that PINs be retained as an alternative to the more futuristic approaches to accommodate the wide range of people with disabilities.

A futuristic ATM which is being prototyped in Canada doesn't require a card at all. Nor does it have a keyboard or screen. The ATM identifies the customer by his or her iris (unique patterns found in the human eye). It welcomes the customer and the transaction is conducted through a spoken dialogue between the ATM and the customer.

4 Access Issues

People

with disabilities experience a range of access issues when attempting to interact with automatic teller machines. These may vary depending upon the nature of the disability, but the overall outcome is lack of comfortable and effective use of ATM facilities. This may lead to over-the-counter surcharges or even denial of access to funds.

A

general trend which occurs in the literature and our survey is that people don't like taking long to use an ATM – particularly if people are queuing behind them. This is a particular issue if they aren't confident in the transaction steps. As a result we don't know how many people with disabilities leave

without completing their transaction, and how many have given up on trying to use such facilities.

This

section of the report will briefly mention some issues of accessibility for a variety of groups of people with disabilities, but is not intended to be comprehensive. The accessibility needs of people who are blind and vision impaired are discussed in greater detail in subsequent sections of this report.

4.1 Access Issues for People who are Blind

In

brief, the crux of accessibility to ATMs for people who are blind is that the screen cannot be read and some or all of the keyboard functions are unclear or unlabelled. Older machines are better suited to people who are totally blind.

Finding

an ATM, and being sure it accepts the users card is another common barrier.

To

better understand how difficult it is for a blind person to independently use an ATM, you might imagine yourself approaching an ATM which has a broken screen and faded or meaningless key labels. If you tried to get some money out, you would most likely get lost or confused with all the steps involved, because you would not be getting any feedback about your progress.

If

you had a really good memory, maybe you would be successful, but you would be

very uncertain about whether you would be able to get the funds without assistance.

Our

survey found that memorising the full sequence to withdraw cash was the main strategy employed by blind ATM users.

4.2 Access Issues for low vision users

In

brief, for people with low vision, the problem is the difficulty encountered reading the ATM signage, screen, key labels and receipts. Glare, poor lighting and the all-to-often small and low contrast print combine to make access difficult. Newer ATMs with larger clearer screens are preferred by people with some residual vision.

But

glare and screen positioning don't only cause problems for people with severe vision loss, many people wearing bifocals also encounter problems, and sunlight shining on ATM screens causes difficulties for many people.

Our

survey found that most people with low vision learn the basic sequence required for ATM transactions and their residual vision is often sufficient for them to carry out the transaction assuming everything goes as planned.

4.3 Access Issues for Hearing Impaired users

For

people who are deaf or hearing impaired, use of ATMs in many cases doesn't present major problems, but if the machine uses beeps to indicate errors or key-presses, then these probably won't be heard. Because (for many people who are deaf or hard of hearing) English is not a first language, it is important that the messages and instructions appearing on ATM screens are in clear, easy-to-read language. A study in Canada has found that the average reading age for people who are deaf is equivalent to year five.

4.4 Access Issues for deaf-blind users

Access

to ATMs for people who are both deaf and blind is particularly difficult. There are often subtle audio cues used by blind ATM users (such as beeps, clicks, thermal printer and so on) which partially compensates for not being able to read the ATM screen. People who are both deaf and blind would have no such cues to assist them.

Braille

output for important screen information would be the only option available to this group.

4.5 Access Issues for People with Cognitive and Learning disabilities

ATMs

can cause difficulties for people with cognitive or learning disabilities when the steps in the transaction are not consistent, logical and focused on the

result. This group needs consistency of steps in transactions, without distractions and a limited number of potentially distracting choices.

Plain

English is also important for screen output.

With

the plethora of machine models and bank chains in common use, there is little consistency across models and across banking establishments. Some banks require cents to be entered, with and without the decimal point, others don't, altogether creating a very confusing – and difficult to learn – process.

If

additional advertising messages or unexpected questions are inserted into the already complicated and differing sequences, this situation will become worse.

A

spoken audio equivalent of the ATM screen information (through speaker or headphones) would most likely assist some people in this group through reinforcement, and also accommodate those who cannot read effectively.

A

more iconic (pictorial) set of screen prompts may be better suited to some people since it relies less on a good knowledge of English and reading ability. However, if this were offered as an alternative user interface, it would be necessary to identify which users wish to use the pictorial version and which users preferred text or audio modes of interaction. Web-based ATM technologies would lend themselves better to such alternatives, and the use of alt-text could make such screens more accessible to people with vision impairments.

4.6 Dyslexia, NESB and People Who Can't

Read

For

people who are dyslexic (for whom letters and numbers regularly get transposed or out of order) a voice enabled ATM would result in less confusing and error-prone ATM interactions.

People

from a non English speaking background (NESB) would similarly benefit from voice guidance in addition to the screen display, particularly when many can speak simple English, but have difficulties reading it comfortably.

The

percentage of Australians who are unable to read is substantial, so voice output for ATMs would also benefit this segment of the community.

It is commonly recognised that everyone has a preference for either audio, visual or tactile modes of learning and communication. Voice output for ATMs would accommodate the significant proportion of our society which is audio-oriented.

5 Access to ATMs

With

a strong emphasis on the ATM access barriers for people who are blind or vision impaired, this section looks at a variety of aspects of ATM usage that present problems.

5.1 Finding and Selecting an ATM

For people with disabilities, selecting a bank or ATM

is far more involved than just choosing the bank with the cheapest fees.

Many

people with disabilities don't independently drive or are unable to walk even short distances – so finding branches and ATMs nearby is a major necessity. With the current spate of branch closures, this problem is compounded.

Depending

on the bank, and depending on the branch, ATM facilities are either impossible, or difficult for people with a range of disabilities to access. Some employ touch screen technology (Westpac is a case in point) and virtually none provide any audible feedback to the user regarding the next step of the transaction or the results of actions. People with physical disabilities may not be able to access the ATM keypad, card reader screen or cash dispenser, due to its height from the ground, steps leading to the machine, or due to other physical barriers.

One

alternative is to find ATMs that are nearby which are more accessible to the person, however, customers are financially penalised if they opt to use an ATM which isn't owned by the establishment they bank with – even though this alternative machine might be more accessible and nearby.

Our

survey found that blind and many low vision users only use one or two well-known machines – rarely do they grab cash from a machine they haven't been to before. This is not so much from choice, but from not knowing where other ATMs are, not knowing whether those ATMs will accept their card, and not knowing the specific sequence of steps and the physical layout of machines they haven't used before. Having no screen feedback, using an unfamiliar ATM is almost guaranteed to lead to problems or loss of the card.

To

access ATMs in bank foyers, door entry card readers need to be located in a consistent position so a blind person can find the reader in order to gain

access to the ATM facilities.

Pillars,

signs and other obstructions also make finding ATMs difficult and potentially dangerous.

5.2 Learning to use an ATM

Our

research has found that people who are blind or have low vision need to find someone to help them locate an ATM and also have that person show them how to use it.

It is

common for blind people to use ATMs with sighted assistance, particularly more recently when the operating steps and procedures are less consistent and more difficult to remember.

Even

though there are some blind and vision impaired people who are able to use ATMs to some degree, a large proportion of people who are blind or vision impaired have never learned how to use an ATM because they believe this would be pointless due to the absence of adequate feedback on the progress of their transactions.

Most

blind people only know how to withdraw cash, and many only know how to withdraw a set amount of cash – other advanced features are usually not worth the effort of learning because they are even more reliant on being able to read the screen.

A

significant number of people with disabilities are unsuccessful in using ATMs and EFTPOS terminals and thus have to resort to handing their card (and PIN) over to a friend or even someone they don't know, in order to pay for goods or

to obtain cash. This is in contravention of conditions of use for the card, and is a major reason why more accessible and useable ATM and EFTPOS facilities need to be provided.

We don't know what proportion of people with various disabilities can or do independently use ATMs, but it's a little like the question of how many people who use wheelchairs access inaccessible buildings. If ATMs remain inaccessible, then their usage by people with disabilities will stay alarmingly low.

In the United States the Americans with Disabilities Act (ADA) specified that for an ATM to be compliant with the ADA, that tape, braille and large print documentation should be available describing the machine's operation. We are not aware of any bank-endorsed accessible materials on ATM usage in Australia. If there were versions in the past, they are most likely out of date and not applicable to modern ATMs.

People with disabilities in the United States generally agree that accessible documentation alone is nowhere near adequate enough for a blind person to be able to use ATMs with confidence and efficiency. This has led to several law suits in recent times and the up-coming availability of talking ATMs.

5.3 Card Issues

There are several issues relating to ATM cards which can cause problems for people with disabilities. These include the following:

§ Orientation of the card – how do you know which way to insert the card into the machine? This changes from brand to brand and model

to model. There is only a one in four chance that a blind person will insert the card correctly unless they have memorised which way round the card must go for that specific machine. Machines should generate an error tone when the card is inserted in the wrong orientation, or ideally, shouldn't accept the card the wrong way.

§

§

Card gobbling – all too often cards are gobbled by machines. Sometimes this is because the person got their PIN wrong, due to keyboard difficulties, other times its because they take too long to respond. What ever the reason, the result is too often inconvenience in not having the card, often having to get to a branch to obtain the card etc. For people with intellectual disabilities the loss of a card could be very disconcerting and alarming – as can the blunt messages that such incidents often result in.

§

§

PIN issues - Some people experience severe problems with remembering or entering PINs, and would be assisted by biometric methods of identification.

§

§

Our survey found that some blind and vision impaired ATM users are particularly concerned about bystanders observing their PIN entry, and in fact are concerned about the general level of safety surrounding cash withdrawal from

ATMs.

As

ATMs move over to smart card adoption, it will be possible to use the card to store a user's preferences for screen layout, voice output, and increased input times for PINs etc, - once these features are available on ATMs.

5.4 Keyboard Issues

Although

keyboards are an important part of an ATM, from an accessibility perspective they really are secondary to the screen output of the machine. Many ATMs in Australia now have some braille on the keypad keys which is of assistance to a number of people who are blind.

However, braille on keys is not nearly as important nor of nearly as much benefit as the general public and even most banking staff have been led to believe.

In

the words of one of our respondents – "The braille isn't useful until you know what the key means, and once you know what the key is, braille isn't really necessary".

A lot of discussion in the area of ATM accessibility makes reference to the relatively small number of blind and vision impaired people who can read braille, but for those who can, the reinforcement of braille on the keys is a minor advantage, but only once the complete operation of the ATM transaction is understood.

Ironically,

it is usually only the numeric keys (1 through 0) which are braille-labelled, the more important function keys for selecting accounts, selecting whether to deposit or withdraw funds, or request a balance aren't labelled, as their function usually changes from screen to screen during the transaction.

A talking ATM can avoid the problem of unlabelled keyboard buttons by providing voice menus which only employ the standard numeric keypad on the machine.

The real challenge for a blind person in using an ATM is being able to "read" what the screen displays, and to be able to identify which of the multi-function buttons is associated with which function.

Even when a sequence of button-presses is memorised by a blind user, this approach falls down when the person needs to perform an infrequently used task, when they move to another model of machine, when they use an ATM from another bank, and when software upgrades are carried out by the bank to add new services or functionality.

Users reported that they like to hear a clear beep for each button-press, and prefer keys that have a positive action when pressed.

In short, ATM accessibility in Australia needs to go a great deal further than token brailing of the numeric keypad before the machines can be used with independence and confidence by anyone who has difficulty reading the ATM screen.

5.5 Screen issues

Glare, and the size and contrast of print on ATM screens are the main problems that people with low vision face when conducting an ATM transaction. Lack of contrast and poor definition labelling on the machine and difficult to read receipts are also a barrier.

Although many newer ATMs have clearer screens, there are still many new ATMs which are very difficult to read,

particularly when sunlight creates glare.

Glare compensating screen technology has been developed by NCR, but is not yet in very wide use in Australia.

A good study of what screen attributes are needed by people with vision impairments is reported in Silver J H, Gill J M & Wolffsohn J S W Text Display Preferences on Self-Service Terminals by Visually Disabled People. November 1994, online at <http://www.tiresias.org/atm.htm#atm> (<http://www.tiresias.org/atm.htm#atm>)

An extract from this report follows:

"The preferences of the control group [people without vision impairment] may have included an aesthetic as well as discrimination characteristics as an important criterion for their preferred colour combination choice, but the colour does not appear to reduce legibility to a great extent. However for the others, [subjects exhibiting a variety of vision deficits) the colour and contrast did have considerable significance, 88% of the visually disabled subjects selected one of the four alternatives where there are light figures against a strong dark background. Of the 100 visually disabled subjects, 88 never used an ATM. It could be that more of them would use an ATM if the displays had dark background with light figures, and there was a choice of character size."

Note that different visual conditions mean that a standard set of large print screens is impractical, so several user-selectable settings are very desirable. These and other details could be encoded on a customer's smart card if these become standard issue for ATM access in Australia. Alternatively, the user could select from a menu of screen options.

A test ATM installed in London offered the following screen options:

size of characters (a choice of three sizes),

colour of foreground/background (black on white, white on black, white on red, and white on blue).

5.6 Selecting Options and Cash Amounts

As

has been discussed in other sections, the use of touch screens and multi-function buttons to either side of the ATM screen, which are used for selecting accounts, transaction type and cash denominations presents huge challenges for people who are blind.

This is because the keys vary depending on the stage of the transaction. Touch-screen ATMs are even more difficult because there isn't even a physical button to press in order to select options.

Trying

to withdraw cash can be particularly problematic because of the differing ways options for amount of funds and denominations are presented to the user, so many people are restricted to only taking a set amount from the machine in order to keep the number of steps at a minimum. This may lead to extra trips to the ATM, resulting in inconvenience and excessive transaction penalty charges.

5.7 ATM Cheque and Cash Depositing

Most

people surveyed didn't conduct advanced ATM transactions, as is probably the case for the majority of ATM users.

Cash withdrawal was the main function carried out via ATM, with

telephone banking and branches being used for more demanding requirements.

6 What Users Said they Wanted

The following summary of user preferences

is taken from Gill J M Making Cash Dispensers Easier to Use. September 1996,

<http://www.tiresias.org/mcdeu.htm#mcdeu> (<http://www.tiresias.org/mcdeu.htm#mcdeu>)

"The initial results of the [Saturn] field trial at RNIB indicate that:

- Blind users would like to use private voice messages
- Partially sighted users would like large print (white print on a black background) messages on the screen
- Blind and partially sighted users would like to use a contactless card
- Blind and partially sighted users would like to have the opportunity to extend the time permitted to respond to the terminal
- Blind users would prefer to use the keypad for selecting options rather than using a touch screen
- Blind and partially sighted users would like to use a cash dispenser in a safe environment."
-

Interestingly, In our Australian survey we found that very few people actually used ATMs in bank foyers, preferring to use ATMs which they already knew the location of. Also, the older (and more accessible) IBM ATMs tend not to be located in foyers, as much as modern ATMs are.

- The Saturn Project also found that many users would like a notch in the ATM fascia so their cane or walking stick would not fall over
- Our recent Australian survey identified some extra things users find helpful or would like to be available.
- Users want increased consistency of transaction steps both across ATM models and between different financial institutions.
- Users would like all banks to agree on the format for entering withdrawal amounts i.e. omitting the decimal point and the two zeros signifying no cents.
- They want improved consistency of the physical ATM in terms of location of card, money and envelope slots and consistent card orientation.
- Users want key layouts and function key assignments to be consistent and logical
- Users want the option of clearer or large print receipts.
- Users want reduction of glare from sunlight
- Deaf, intellectually and learning disabled people need plain English instructions on the ATM screen.
- Users want accessible instructions for the ATM machine in braille, cassette tape and large print – particularly because an improved understanding of the steps in the transaction sequence was reported to be very important to effective use of ATMs when the screen is inaccessible.
- People want increased use of error tones and confirmation beeps
-

Users also want tactual and bold print diagrams of the ATM layout.

- Tactile ground indicators identifying the presence of ATMs were also suggested.
- Users would like the ability for the ATM to speak an overview of its button layout as well as a facility for having each button speak its function prior to use.
- Users would like banks to provide free call numbers from which they could obtain details on ATM locations and details of operation.
- In the absence of voice output, users would like audible tones signifying successful or unsuccessful completion of transaction.
- However, more than anything else, users repeatedly requested the provision of voice output from ATMs so that they could have confidence and independence in conducting personal financial transactions.