



Bridging the Digital Divide in Western Australia

- An Understanding of WA Computer Literacy Training Needs

**A report prepared by Market Equity
for the Department of Training and Employment
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Executive Summary

"I think there is a world market for maybe five computers."

(Thomas Watson, chairman of IBM, 1943)

Overview

The Department of Training and Employment is seeking to bridge the digital divide in Western Australia through its Information and Communications Technology strategy, by ensuring that the whole community has opportunities to access computer literacy training. In developing this strategy, there was a lack of information specific to Western Australia, with which to develop a focused set of promotional and information delivery strategies. Research was therefore sought **to identify the market segments for computer literacy training in Western Australia and the factors that are most likely to motivate the uptake of this training.**

A staged process was adopted, comprising both primary and secondary research components:

- ◆ **Desk research** was undertaken to review existing measures of computer literacy and identify the target groups for computer literacy training in Western Australia.
- ◆ A **telephone survey** was then undertaken to benchmark computer literacy in Western Australia, determine the motivators and barriers to computer uptake among the identified target groups and measure preferences for different types of training delivery options.
- ◆ **In-depth interviews** were also conducted with representatives from niche target groups to identify specific opportunities for relevant communication strategies and training options.



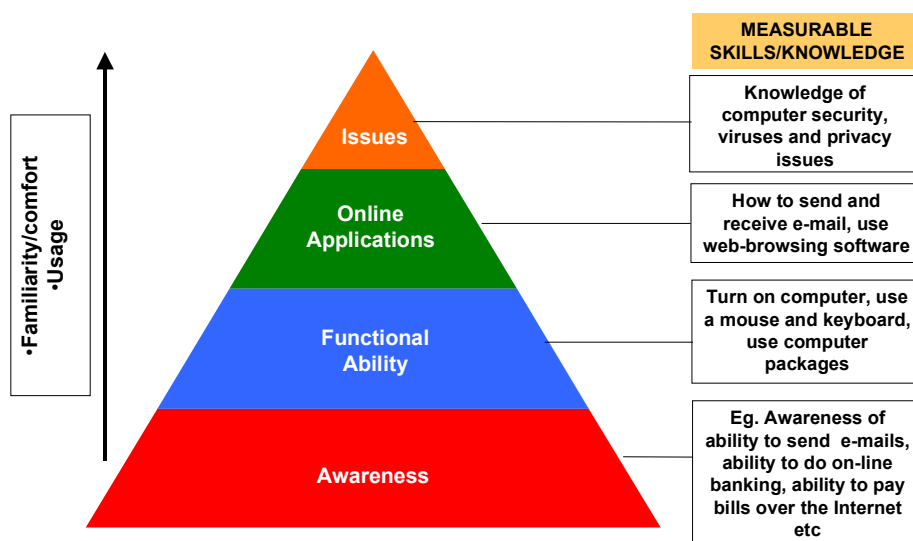
Key Findings

Definitions of Computer Literacy

Despite the increasing adoption and utilisation of computers and online technologies, there is **no globally accepted definition of computer literacy**. A review of the common themes and trends from existing published literature identified **more than one level of computer literacy**. A model was developed from the literature, comprising four components:

- ◆ **Awareness** of day to day computer applications.
- ◆ **Functional ability** to use a computer to carry out basic tasks.
- ◆ Ability to use online computer **applications** to good effect without supervision.
- ◆ Awareness and understanding of the broader **social and ethical issues** surrounding computer and Internet usage.

Each stage of the pyramid represents increased familiarity with using a computer and a higher degree of computer literacy.



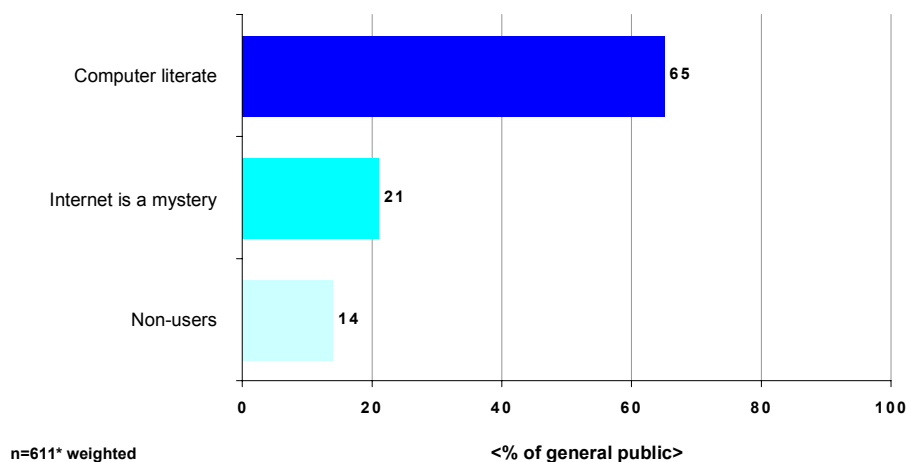


Computer Literacy Benchmark

Based on this model, there are three distinct segments reflecting different levels of computer literacy:

- ◆ **Fully Computer Literate** – those who can do all or most computer-based tasks without supervision. From this point, people can be largely self-sufficient to learn more as needed.
- ◆ **Yes, but the Internet is a Mystery** – those who can do all or most non-Internet related tasks without supervision but are unfamiliar with the Internet and e-mail.
- ◆ **Non-Users** – those who have never tried any (or have tried hardly any) of the required tasks.

When quantified at a WA level, the benchmark levels of computer literacy are as follows:



Target Groups

While there is a relatively high level of computer literacy at an overall WA level, there are a number of important segments being left behind in the digital divide. Employment plays a major role in contributing to this – within each of the groups, computer literacy is lower among those who are not currently employed. In order of priority, the key target groups are as follows:

- ◆ **Seniors** aged 65 years and over.
- ◆ Non-working **low income households**.
- ◆ Non-working people in **regional areas**.
- ◆ Non-working **women aged 40 to 54 years**.



Importantly, there is an existing infrastructure of training and support services already being offered for these and other niche groups. There are therefore a number of opportunities for the Department of Training to add value to these services through the provision of additional funding and/or resource allocation.

Motivators and Barriers to Computer Uptake

The core fundamentals driving computer usage are common across each of the target segments. Among those who currently use a computer, the **primary motivating factor is functional - work and/or the ability to improve employment prospects.**

For those who are not required to use a computer for work purposes, there are other motivating factors on a more **personal** level once they have recognised the benefits a computer can offer. These include the challenge of keeping up with the times and/or their children, as well as the opportunity of satisfying their curiosity by pursuing a new interest. Each of these motivators have scope to form the basis upon which campaign messages can be developed.

However, close to half of each target group indicate that nothing would motivate them because they are not interested, or perceive themselves too old to need to learn how to use a computer. Therefore, while a communications plan will help to encourage those who already have some interest, there are those who are completely closed to the idea of learning how to use a computer. This may be based on their underlying attitudes towards technology – including **perceived insecurity and complexity, as well as a lack of confidence in their own abilities.** Communications are therefore unlikely to generate much interest from these people in the short to medium term, without some additional education to breakdown barriers of insecurity and complexity.

Training Delivery Options

One to one training and **small discrete training groups** are clearly the preferred delivery options across each of the key target groups. In terms of the specific delivery options, those which were most positively received include:

- ◆ Supervised self paced training in a central location with a tutor at hand.
- ◆ Basic training at a central location with like groups.



Those in **regional areas** and **females aged 40 to 54 years** were the most receptive to the delivery options presented. Although **low income households** and **seniors** also expressed some interest, these target groups were least receptive overall, most likely due to a lack of confidence in their own abilities and an underlying attitude that technology is too complex to learn.

Other factors considered important among existing training providers include the provision of a relaxed, non-threatening environment.

There are also a number of key considerations across each of the **niche target groups**. Most importantly, there are a range of existing services being offered by various organisations who deal directly with each of these groups, which the Department can add value to.





Recommendations

"There is no reason anyone would want a computer in their home."

(Ken Olson, president, chairman and founder of Digital Equipment Corp, 1977)

There are clearly a number of opportunities to bridge the digital divide in Western Australia. For those who are not required to use a computer for work purposes, there are other means for motivating people on a **personal** level, and many of these are fundamental across each of the target groups. Considering the pyramid of computer literacy levels, the overall challenge for each literacy segment is as follows:

Non-user segment strategies

- ◆ Communicate the application, not the technology.
- ◆ "Take the mountain to Mohammed"

This segment needs to be sold on the purpose, not converted to the technology. Communications need to talk about the application to attract interest and to achieve the first level of literacy, being awareness of applications. The barriers here are strong, in terms of a perceived lack of need, as well as concerns about complexity and personal ability. Therefore, a focus on computers will only continue to build this barrier.

Given the significant barriers, the training needs to be taken to these people, rather than trying to bring them to the training. This means using existing activities and networks used by non-working women to integrate computers into what they already do. For example, adding a computer dimension to local craft groups, book clubs, sporting clubs to show these groups how a computer can help them find more about their interest. For people not in any clubs or activities, demonstrations in community centres and shopping centres could be another way to get the concepts in front of the people.



“Internet is a mystery” segment strategies

- ◆ Give them a purpose.
- ◆ Simple steps, remove the complexity.

The Internet has added another dimension of computer learning, in terms of awareness of applications as well as functional training about how to use it. For this segment, physical computer technology no longer presents a barrier, although new barriers exist such as a perceived lack of need (for the Internet or e-mail) or concerns about security or ability to use these elements. For some reason, these people have been exposed to computers but not taken the next step themselves to adopt Internet and e-mail applications. The research indicates the barrier is more about perceived need and ability, than financial or access issues. Therefore, strategies need to create the need in people’s minds, through personally relevant activities. In this respect, the strategy can be similar to that for non-users, in terms of communicating potential Internet applications to people within existing interest groups, clubs etc or through intermediaries such as schools (eg a “teach the parents” strategy).

The other element of the communication needs to focus on the simplicity of the task by physically showing easy ways to search the Internet, or use e-mails, for the potential applications involved, in order to stimulate trial. Given their higher technical literacy, these groups are then potentially more self-sufficient to explore further, ideally through sharing experiences with others having similar interests.

Audit Existing Networks

It will be important to take into account existing activity groups and existing training services being offered, to capitalise on the existing networks, including their empathy with the target group. In the initial stages of this plan, the Department of Training and Employment requires a more **thorough audit of the computer training and support services offered by specific organisations**, to determine where they have the greatest opportunities to add value to existing services.



In addition to this, specific recommendations for each group are as follows:

Seniors

Among seniors, particularly those aged 65 years and over, there are a number of attitudinal barriers to computer usage which need to be addressed – a lack of optimism, a lack of perceived need to learn and a lack of confidence in their abilities, coupled with perceptions of insecurity and complexity. The costs of technology and training are also often prohibitive for this target group.

Any **communication about computers to seniors needs to tell them what they can learn and how it can benefit them, in terms of issues that are personally relevant** such as staying in touch with family or friends, learning about a hobby or interest and/or doing this in a highly affordable way. The focus needs to be on the application (eg “hear from your family more often, at low/no cost”), not on the technology. A focus on the technology (eg if we said “come and learn how to use computer) runs the risk of seniors immediately dismissing the idea due to insecurity or lack of confidence. The influence of peers is important, and the increasing rate of take-up amongst seniors can be put to good use. For example, **asking a Senior who has attended a training session, or actively wants to attend, to bring along one friend** who otherwise would not get involved.

Training should also be structured in small enough groups to build people’s confidence in their own abilities and delivered in a way that is easy to understand, shows applications they can individually relate to and allows them to ask questions.

A key avenue, both in terms of communication and training, includes local seniors/community groups, where training can be delivered in a non-threatening environment among friends and familiar faces. Readership of local community newspapers also tends to be higher among seniors and may therefore provide another suitable communication medium.

Specific examples of organisations who provide existing support services, include Council on the Ageing (WA) Inc and Computer Angels.



The following is an example of a NSW initiative targeted at seniors:

Strategies Targeted at Seniors – NSW Case Study

In response to the growing enthusiasm among seniors to learn about and use the Internet, the NSW government last year, launched TechnoSeniors as part of NSW Seniors Week.

TechnoSeniors is a two-day event, comprising seminars, workshops and tutorials to help seniors with computer technology and more specifically, get them started as Internet users. In only its second year, it was estimated that TechnoSeniors could have been booked out three times over.

TechnoSeniors is part of a broader Seniors Online initiative – a joint venture between the Ageing & Disability Department, the Department for Women, SeniorsCard and Microsoft – which aims to bridge the generational gap by educating older people about IT, helping them get on the Internet and allay their concerns about using technology. As part of Seniors Online, a seniors website will also be developed later this year.

Other Target Groups

Communication and training delivery options are similar among non-working low income households, non-working females aged 40 to 54 years and non-working people in regional areas. As is the case with seniors, there are already a number of initiatives in place by other organisations, which the Department can add value to.

In terms of communication and training delivery, opportunities include the following:

- ◆ **Regional areas** – promote and conduct the training through a local community centre or town hall, where the information is easily accessible and people can do training with their friends in a familiar environment.
- ◆ **Low income households** – in the case of those seeking employment, there are already a number of services offered by Employment agencies, which can be enhanced by the Department.



- ◆ **Females aged 40 to 54 years** – mothers who have been at home with small children are often isolated from opportunities to learn computer skills, by not being in the workforce. As their children grow up and they have more time, non-working mothers tend to either move back towards employment or else take up various hobbies which may be through voluntary groups or personal interest (eg crafts, reading). In this respect, computer literacy courses can be promoted alongside the new activity – for example promoted as ‘return to work’ training. The *Return to Work* program was noted as a positive initiative to help women re-enter the workforce if that is their objective. Alternatively, exposure to computers can be presented in conjunction with hobbies or interests such as adding relevant computer training to special interest courses, craft groups, reading clubs, and other existing networks. In addition to these strategies, one of the most impactful approaches for mothers of school-aged children could be to promote the opportunity to ‘learn how to help your child’ by teaching Internet and e-mail skills specific to assisting school students. This might be done through schools, in conjunction with the Education Department or individual schools.

Measuring the Training Impacts

Now that the level of computer literacy has been benchmarked, there is scope to track the impact of the Communications strategy once it is implemented. Tracking could be conducted at an overall level, or with select target groups if there has been any specific focus on a particular group.

There may also be scope to conduct longitudinal studies with people in selected areas – for example, asking people a series of questions prior to the commencement of the training and then asking the same people to answer the questions again once they have been through the training, to determine whether there has been any impact on their attitudes and behaviours.





Background & Objectives

The Department of Training and Employment has recently developed an Information and Communications Technology strategy as part of the overall VET plan for Western Australia. One of the core objectives of this strategy is to bridge the gap in society between those who are computer literate and those who have little or no computer skills. There was however a lack of Western Australian specific data with which to develop a focused set of promotional and training delivery strategies.

The overall objective of this research was therefore, to identify the market segments for computer literacy training in Western Australia and the factors that are likely to increase the uptake of this training.

This information will be used by the Department to support decisions on the allocation of training and promotional resources.

The research involved two stages, each with specific objectives:

Stage 1: Secondary & Desk Research

The objectives of the desk research were to:

- ◆ review examples of “computer literacy” measures;
- ◆ identify target groups for computer literacy training by demographic differences;
- ◆ establish known barriers to computer usage and uptake; and
- ◆ determine known motivators/drivers of computer usage and uptake;
- ◆ identify different training delivery options currently being used and any feedback on what works best.



Stage 2: Quantitative Benchmark Survey and In-depth Interviews *The Power of Information™*

The objectives for the quantitative research were to:

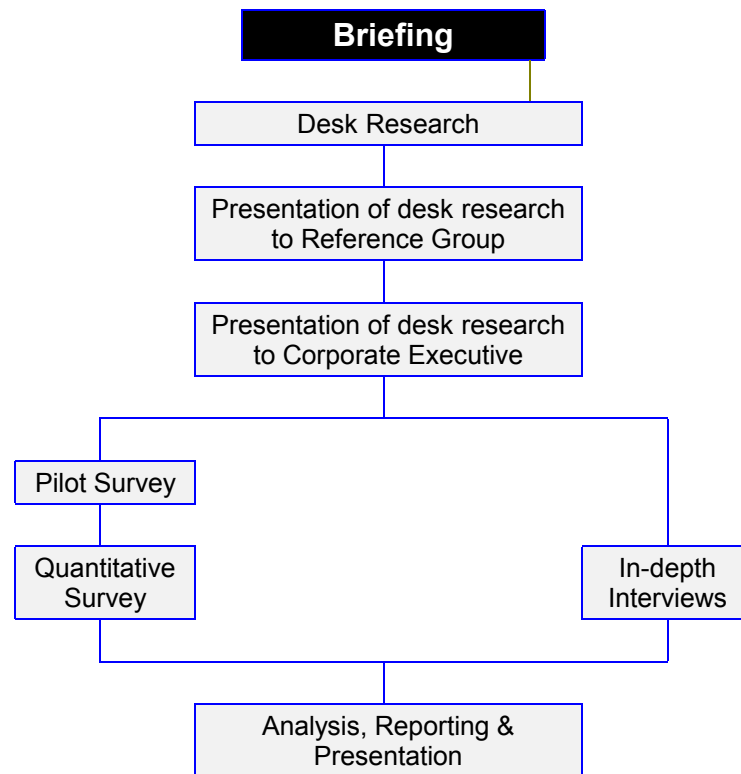
- ◆ Establish a clearly defined, accurate benchmark for computer literacy, which can be tracked post-implementation of the communications plan.
- ◆ Quantify the motivators and barriers identified in the desk research (as well as any others identified through the survey) to provide input into the campaign communication strategies.
- ◆ Measure people's preferences for a few different training delivery options to provide some indication of which methods people would be most (and least) receptive to.





The Approach

A staged process was adopted, comprising both primary and secondary research components. The process was interactive, ensuring Reference Group involvement at key stages.



Stage 1: Secondary & Desk Research

Recognising that there is a range of published literature on computer literacy at a national and international level, as well as direct experience among those who are already providing training to people with low computer skills, upfront research utilised the following information sources:

- ◆ Published reports and studies conducted by the following:
 - ◇ Australian Bureau of Statistics (ABS).
 - ◇ The National Office for the Information Economy (NOIE).
 - ◇ Australian National Training Authority (ANTA).
 - ◇ National Telecommunications and Information Administration, US Dept. of Commerce.
 - ◇ Adult Multicultural Education Services (AMES).



- ◇ Parliament of Australia.
 - ◇ University of South Australia.
 - ◇ Curtin University.
 - ◇ State Library of Queensland.
 - ◇ University of California.
 - ◇ University of Washington.
 - ◇ Computer Learning Foundation.
- ◆ 3 In-depth interviews with computer training providers who are already offering training to segments with low computer literacy:
 - ◇ Council on the Ageing (WA) Inc.
 - ◇ Computer Angels.
 - ◇ Telecentres.
 - ◆ Discussions with government agencies and peak bodies representing potential target groups, including the following:
 - ◇ Disability Commission.
 - ◇ Aboriginal Affairs Dept.
 - ◇ Aboriginal & Torres Strait Islander Commission (ATSIC).
 - ◇ Bridging the Gap.
 - ◇ AMES Dept, West Coast College of TAFE.

Stage 2: Quantitative Benchmark Survey & In-depth Interviews

Based on the desk research, the target groups were defined as follows:

Large Target Groups (ie, of sufficient size to warrant direct investigation and potentially direct campaigns)	Niche Target Groups (ie, specific, small segments which are best addressed in research and promotion jointly with specific support agencies)
<ul style="list-style-type: none">◆ Seniors (aged 55 years+)◆ Low income households (<\$40,000)◆ Women 40-54 years◆ Regional WA	<ul style="list-style-type: none">◆ Unemployed◆ Disabled◆ Indigenous◆ Non-English speaking background



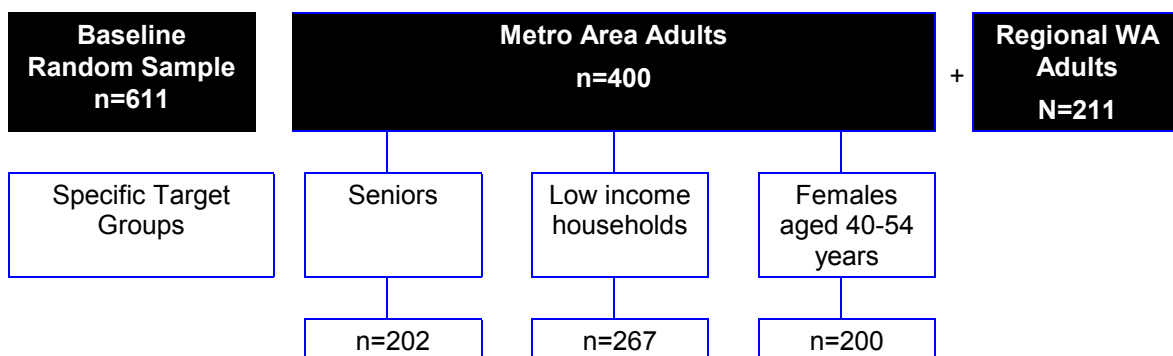
Large Target Groups – Telephone Survey

A questionnaire was developed based on the desk research findings, in conjunction with feedback from the Reference Group.

Prior to the commencement of the main survey, 15 pilot interviews were conducted, to allow for feedback on the wording and structure of the questionnaire.

Once this was completed a general public telephone survey of adults aged 18 years and over was conducted over the period 17 February to 20 February 2001.

A random sample was selected to allow the benchmark measure of computer literacy to be quantified across metropolitan and country Western Australia. A booster sample was then added for each of the identified groups, to allow a sufficient base for analysis of each one. The target segments were focused in the metropolitan area only, with regional Western Australia being addressed as a whole segment on its own. This is illustrated below:



People who participated in the random survey, but did not fit into any of the target groups, only answered the questions used to define computer literacy for the benchmark measure. Those in the target groups answered the full survey.

Random Sampling

Telephone numbers were randomly generated from Australia on Disk, which generates household numbers by street name in geographic areas.

To ensure representativeness of the results, the introduction to the questionnaire was also framed to minimise refusals on the basis that someone did not use a computer.



The questions used to determine the benchmark literacy scores were repeated on a separate omnibus survey that was not recruited on the basis of computers but a different topic, to overcome potential self-selection bias. As a result, the reported literacy levels were adjusted marginally to ensure greater confidence in these percentages. The proportion of non-users, based on the segment definitions ranged from 14% to 18%.

Sampling Accuracy

The sampling accuracy for the various sample sizes captured is as follows:

N=	Sampling accuracy at 95% confidence level
600	$\pm 4\%$
400	$\pm 4.9\%$
200	$\pm 6.93\%$

Weighting of Data

The baseline random sample was weighted to reflect Australian Bureau of Statistics (1996 Census) population data by age, gender and geographic location (Perth metropolitan area versus regional WA). This ensured a representative benchmark measure of computer literacy across Western Australia.

Interviewing

All interviewing was conducted by Market Equity's team of trained and experienced interviewers under the full supervision of the field team Director. All completed questionnaires were checked, coded and 10% validated according to IQCA standards prior to data entry.

Analysis

Upon completion of the fieldwork, all responses were entered for analysis using the statistical program SPSS 9.0 for Windows. The data was then analysed by a qualified Account Executive, in conjunction with a qualified Statistician.



Niche Target Groups – Indepth Interviews

These groups required a separate approach, as they would have been inherently difficult to capture in the random sample and within the scope of the research budget.

A total of 17 in-depth interviews were conducted with representatives from key groups to determine the motivators, barriers and best potential methods to stimulate computer uptake. Representatives approached, who were also contacted in the desk research stage, were asked for additional feedback using prompts on motivators and barriers as identified in the desk research.

Representatives were interviewed from the following organisations:

Non-English speaking:

- ◆ West Coast AMES.
- ◆ Office of Citizenship & Multicultural Interests.
- ◆ Chung Wah Association.
- ◆ Northern Suburbs Migrant Resource Centre.
- ◆ WA Polish Women's Association.
- ◆ Communicare.
- ◆ Australian-Asian Association.

Disabled:

- ◆ Multiple Sclerosis Society of WA.
- ◆ Deaf Society of WA.
- ◆ Blind Association.
- ◆ Paraplegic-Quadriplegic Association of WA.

Unemployed:

- ◆ Victoria Park Jobmate.
- ◆ STEPS Incorporated.
- ◆ Eastern Edge Employment and Business.
- ◆ South Metro Migrant Resource Centre.

Indigenous:

- ◆ CY O'Connor College of TAFE.
- ◆ Kimberley College of TAFE.





WA Computer Literacy Benchmark





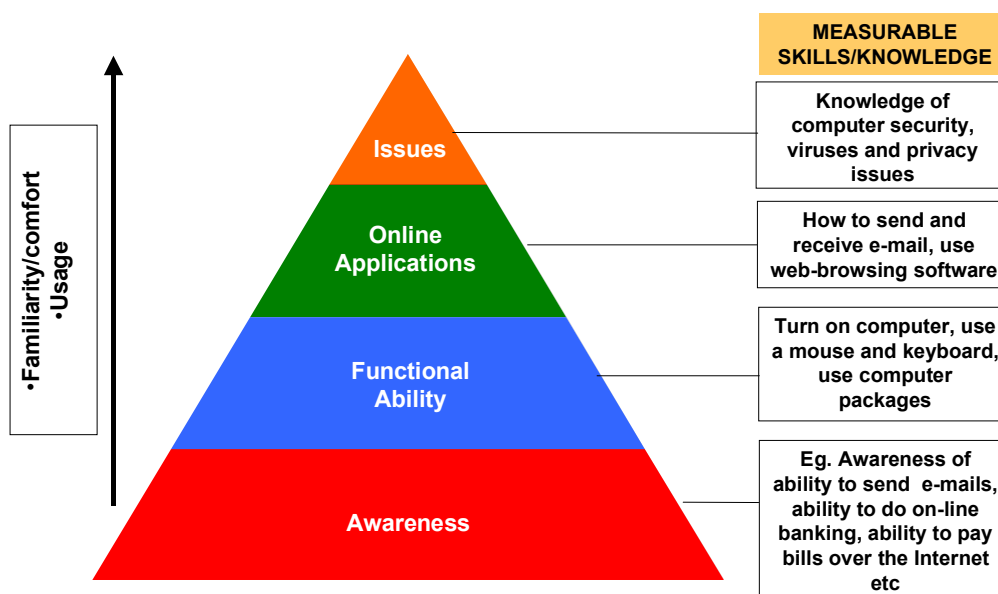
How is Computer Literacy Defined?

Despite the increasing adoption and utilisation of computers and online technologies, there is no globally accepted definition of computer literacy. In its simplest terms, computer literacy refers to someone's ability to use a computer at a relatively basic level. Beyond this, it is largely a broad, undefined topic.

Existing literature illustrates that the notion of computer literacy has evolved over time, influenced by rapid technological developments and the changing role of technology in today's society. Early definitions of computer literacy referred to someone's ability to program a computer. This is now considered outdated and less relevant to today's society than someone's ability to use a computer to perform basic tasks.

For the purposes of this research, a useable definition of computer literacy was developed to enable computer literacy to be benchmarked at a Western Australian level and then tracked post implementation of the Department's Communications Plan. A review of the common themes and trends from existing published literature identified **different levels of computer literacy**, as opposed to the concept that someone is either computer literate or not. A model was developed, comprising four components. Each stage of the pyramid represents increased familiarity with using a computer and a higher degree of computer literacy.

Figure 1: Levels of Computer Literacy





In more detail, the components are defined as follows:

Awareness of day to day computer applications:

At the most basic level, someone needs to be aware of what a computer can do for people who are not already exposed to computers through work or study applications. For example, awareness that a computer will enable them to send and receive information, do on-line banking, search for information, etc. Previous research conducted by Market Equity (1999) indicated that awareness of the existence of online services is high, particularly for telephone banking/bill paying and Internet-based services, such as e-mail communication, information searching via the Internet, marketing and purchasing of goods online. However, while these various aspects of online services are widely recognised, this does not necessarily mean people understand fully what they offer or how to use them.

Functional ability to use a computer to carry out basic tasks:

Once someone has identified what a computer can do, the next step is being able to physically use the computer. This includes turning the computer on and knowing how to use a mouse and keyboard, as well as having the skills to use basic software packages.

Ability to use online **applications**:

Whereas at the first level, someone needs to be aware of the different online applications a computer can be used for, at this level, someone would know **when and how** to use online applications to good effect.

Awareness and understanding of the broader **social and ethical issues** surrounding computer and Internet usage:

Existing literature also refers to an understanding of the social and ethical issues of computer use, including computer security, viruses and privacy issues. Some of this knowledge would develop even at the early stages of computer literacy, particularly since these issues are receiving increasingly widespread media attention. This component is placed at the apex of the pyramid to represent the highest level of understanding of these issues, including knowledge of their implications as well as how to deal with them.





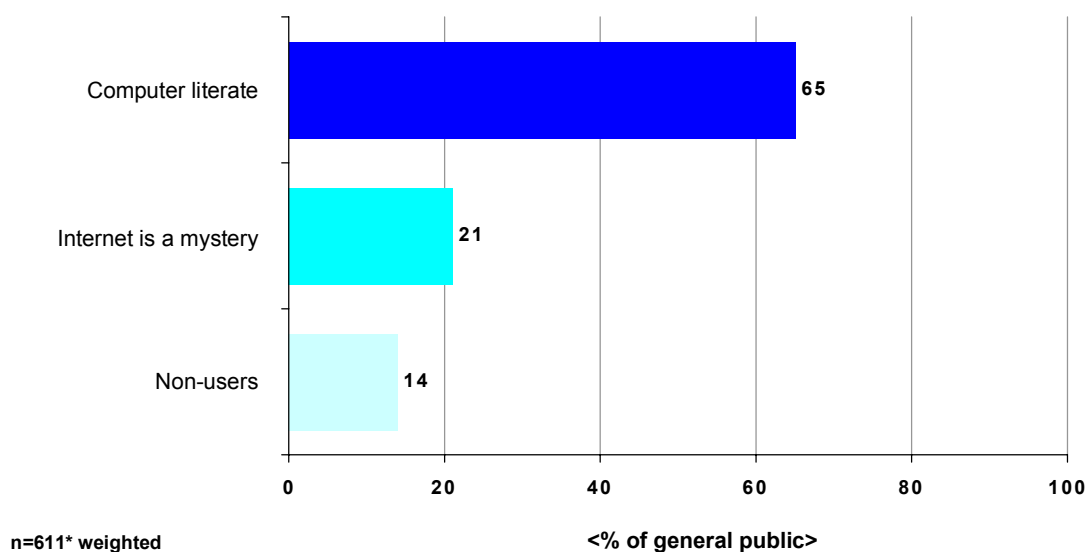
What is the Level of Computer Literacy in WA?

General Public Computer Literacy Benchmark

Based on each of the components of the computer literacy model, three distinct segments emerge when quantified. Each represent a different level of computer literacy:

- ◆ **Computer Literate** – 65% of the adult population can do all or most of the required tasks without supervision.
- ◆ **Internet is a Mystery** – 21% of the adult population can do all or most of the non-Internet related tasks without supervision but are unfamiliar with the Internet and e-mail.
- ◆ **Non-Users** – 14% have never tried any (or hardly any) of the required tasks.

Figure 2: General Public Computer Literacy Benchmark



Please note: These are based on people's self-reported abilities and may therefore be slightly higher than other measures of computer usage, although efforts were made to minimise this throughout the questionnaire design and interview process. Measures are also based on a range of specific skills, as opposed to merely asking people whether they have used a computer or not.



To put this into some context, according to the ABS, in the 12 months to August 2000:

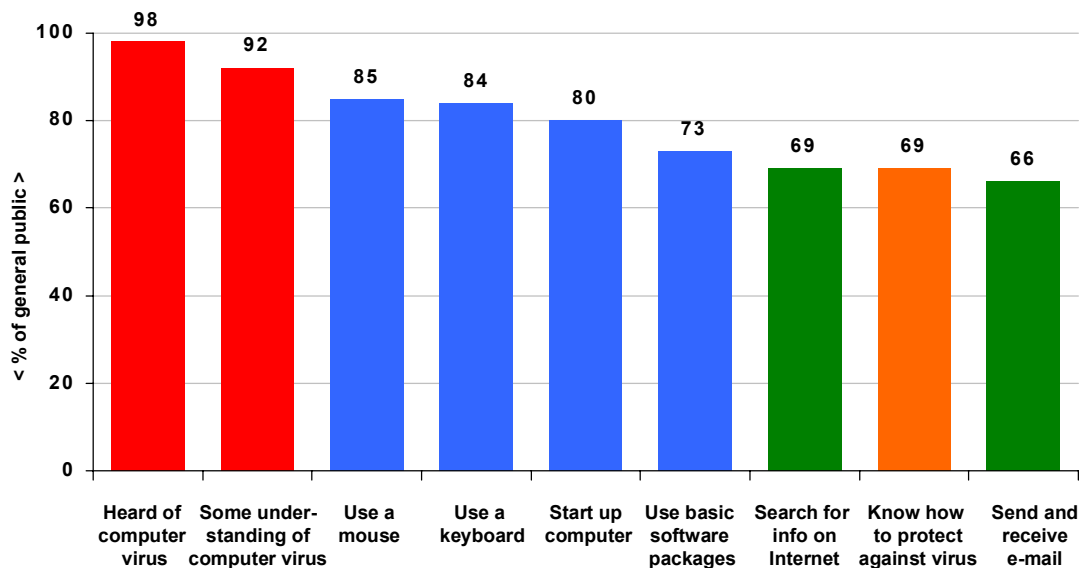
- ◆ 66% of adults in Australia used a computer.
- ◆ 48% accessed the Internet.

In the United States, Internet usage is estimated at about 55%.

Ability to Perform Specific Tasks

The three segments developed are based on the proportion of the adult WA population who are able to perform each of the basic tasks in the pyramid without any supervision or instruction. Figure 3 denotes a broad base of awareness and understanding of the basic computer applications and issues surrounding computer usage. There are also a high proportion of people with basic computer skills. However, ability to search the Internet and use e-mail facilities denotes a higher level of computer literacy. And at this point in time, only a subset of those with basic computer skills also have Internet searching and e-mail capabilities.

Figure 3: Responses to Specific Elements of Computer Literacy in WA



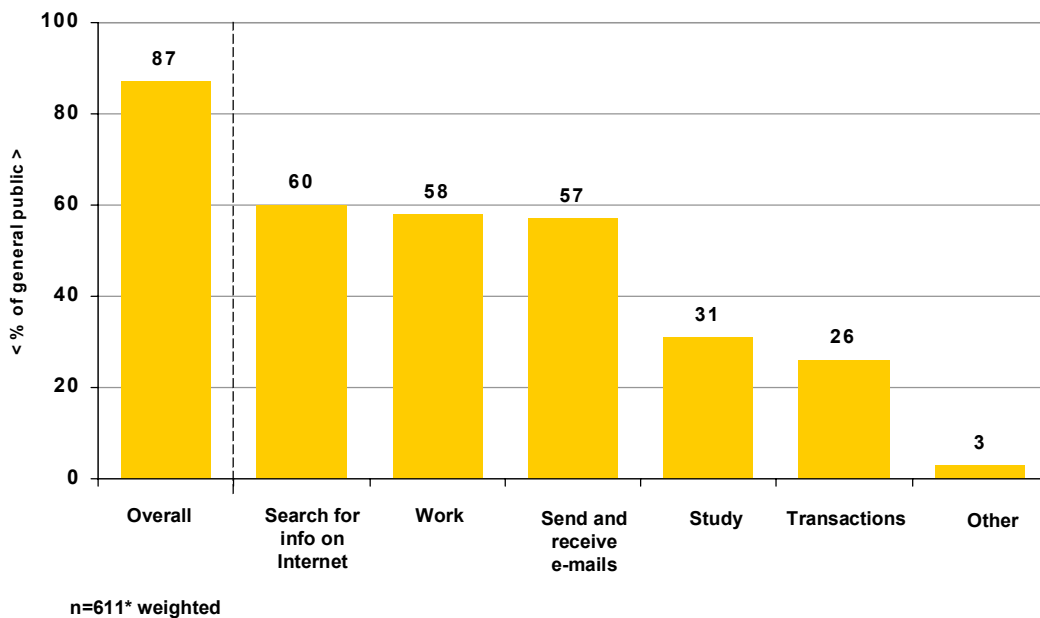
n=611* weighted



Computer Usage

Literacy was also explored in terms of computer usage. In the last 12 months, computers have most commonly been used for work purposes (58%), searching for information on the Internet outside of work (60%) and e-mail communication outside of work (57%). Using a computer for study purposes (31%) and transactions (26%) are currently secondary uses, although there is evidence of increasing uptake of online services such as bill payment, Internet banking and online shopping.

Figure 4: WA Computer Usage (last 12 months)





How Does Computer Literacy Differ by Target Group?

While the overall level of computer literacy at a state level is high, a review of the existing literature identified those segments in society with lower computer and Internet uptake – the key contributors to the digital divide. These were defined as follows:

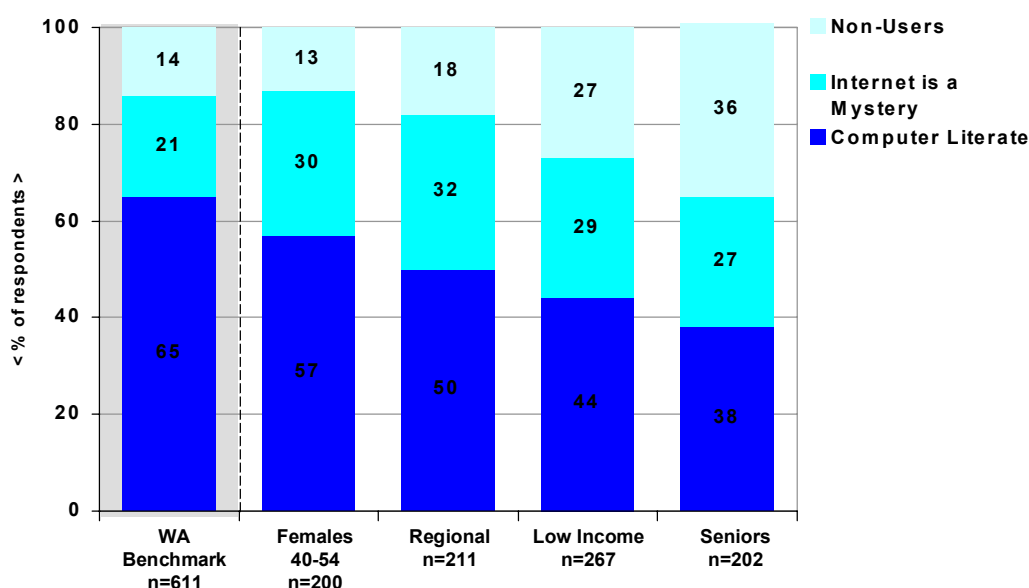
Large Target Groups*	Niche Target Groups
◆ Seniors (aged 55 years+)	◆ Unemployed
◆ Low income households (<\$40,000)	◆ Disabled
◆ Women 40-54 years	◆ Indigenous
◆ Regional WA	◆ Non-English speaking

* Please refer to Appendix 1 for ABS statistics on computer and Internet usage.

Comparative Computer Literacy Benchmarks

As expected, based on the desk research, the level of computer literacy within each of the target groups is significantly lower than the state benchmark – each of these groups are indeed at risk of being left behind in the digital divide if suitable strategies are not developed and implemented. Figure 5 demonstrates the levels of computer literacy for each of the target groups when quantified, relative to the overall state benchmark.

Figure 5: Comparative Computer Literacy – by Target Group





Among both **females aged 40 to 54 years** and people in **regional areas**, overall levels of computer usage are within range of the benchmark, even though the proportion of “computer literate” people is significantly lower. There is therefore scope to focus on overcoming Internet and e-mail associated barriers among these users.

Among **low income households** and **seniors**, overall levels of computer usage are significantly lower than the state benchmark, as are their levels of computer literacy. This presents an opportunity at two levels - encourage computer usage at the most basic level, as well as more advanced skills such as Internet and e-mail usage.

When comparing each of the target groups, **employment is a major factor contributing to the level of computer literacy**. Figures 6 and 7 illustrate that, across each group, the level of computer literacy is significantly lower among those who are not currently employed. And in the case of seniors, it is significantly higher among those aged 55 to 64 than those aged 65+ years.

Once employment is taken into account, the target groups are more specific and the order of priority is as follows (in descending order):

- ◆ Seniors aged 65 years and over.
- ◆ Non-working low income households.
- ◆ Non-working people in regional areas.
- ◆ Non-working women aged 40 to 54.

Figure 6: Comparative Computer Literacy – Sub Groups

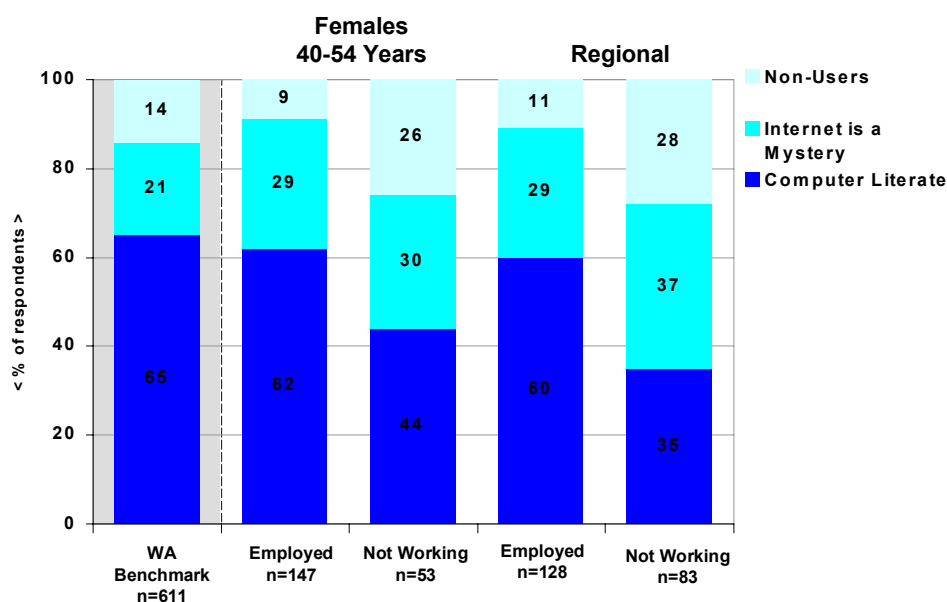
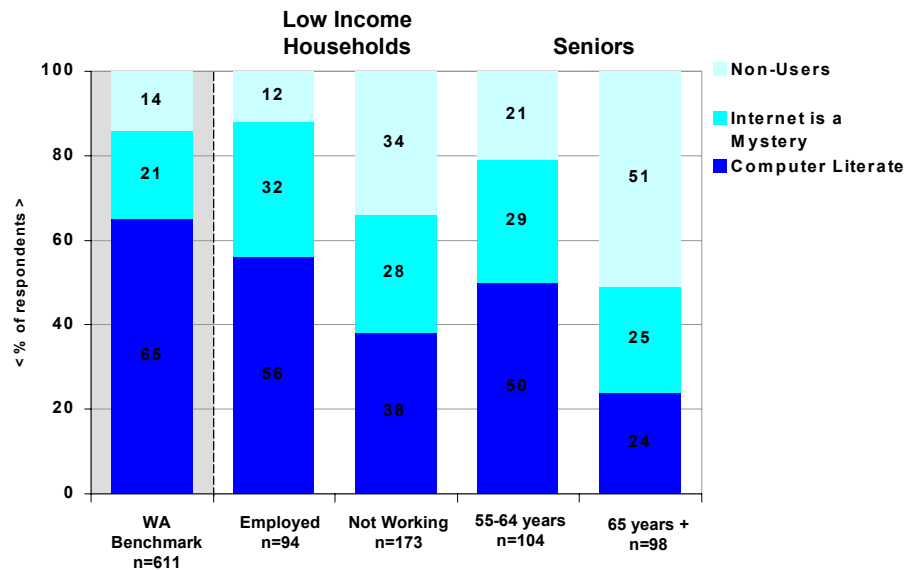




Figure 7: Comparative Computer Literacy – Sub groups



Ability to Perform Specific Tasks

Figures 8 to 11 demonstrate the extent to which each target group lags behind the overall state benchmark on each of the components of the Computer Literacy Pyramid model. With employment being a key driver of computer usage, the extent to which each target group falls behind **increases among those who are not currently employed**. And among seniors, who are clearly the least computer literate, those aged 65 years and over lag further behind than those aged 55 to 64, since there is a greater chance that the latter group have been exposed to computers at some stage of their working lives.

Overall, there is little differentiation in terms of the broad 'awareness' measures, which are over 90%. However, on most of the other dimensions, seniors aged 65 years and over are furthest removed from the benchmark, followed by non-working low income households, non-working people in regional areas and non-working females aged 40 to 54 respectively.

Although the digital divide between the metropolitan area and regional Western Australia is narrowing, there are still some significant differences in computer literacy between those in regional areas and the overall state benchmark, which need to be overcome. The applications where there are the greatest differences include searching for information on the Internet and e-mail communication, which may be largely a function of access.



Figure 8 : Comparative Levels of Computer Literacy – Seniors

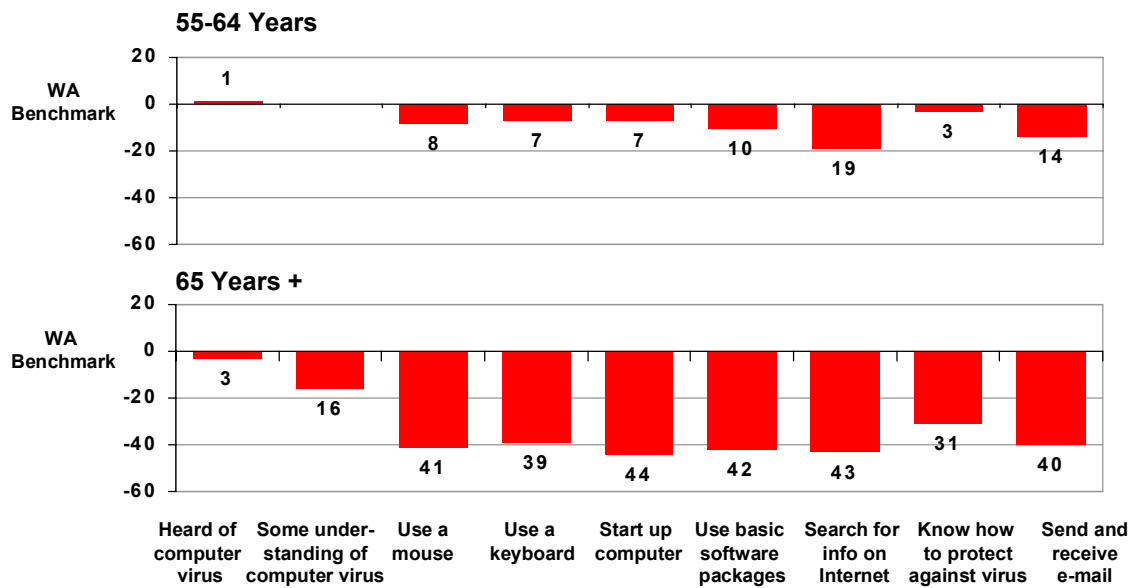


Figure 9: Comparative Levels of Computer Literacy – Low Income Households

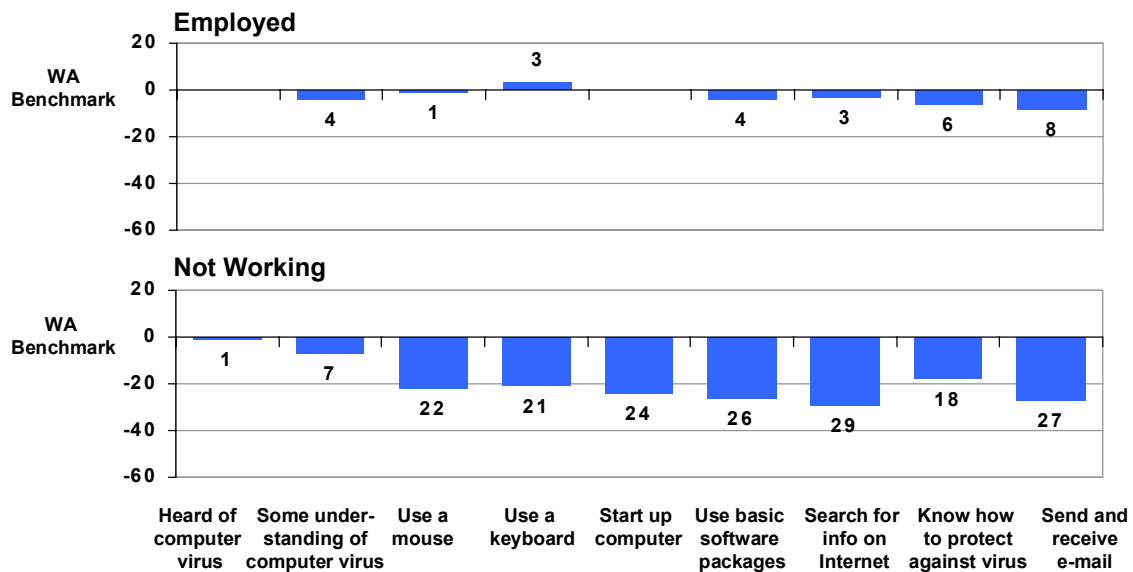




Figure 10: Comparative Levels of Computer Literacy – Females Aged 40-54 years

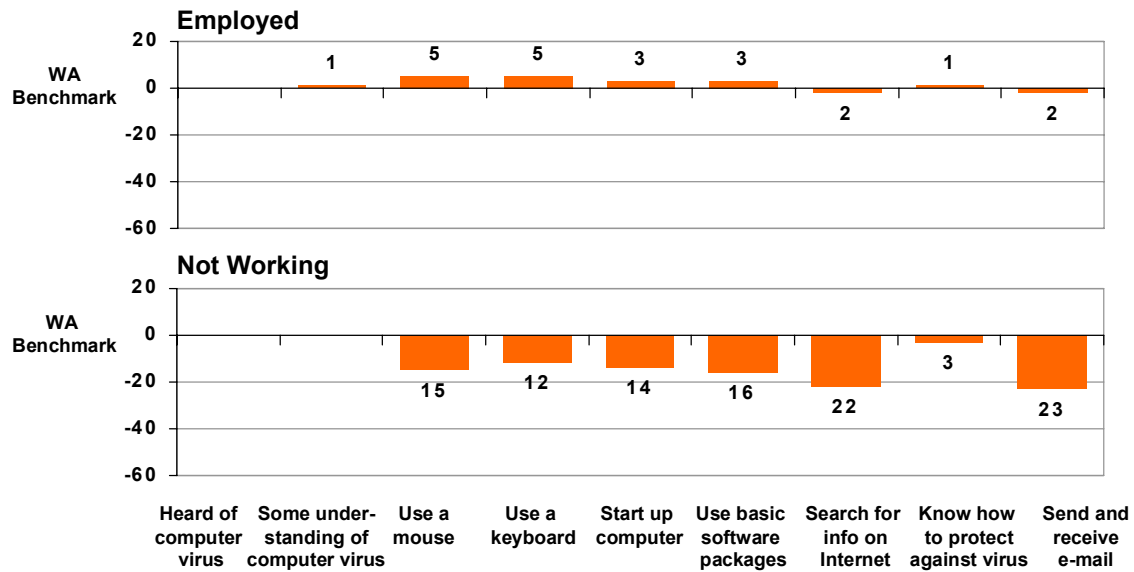
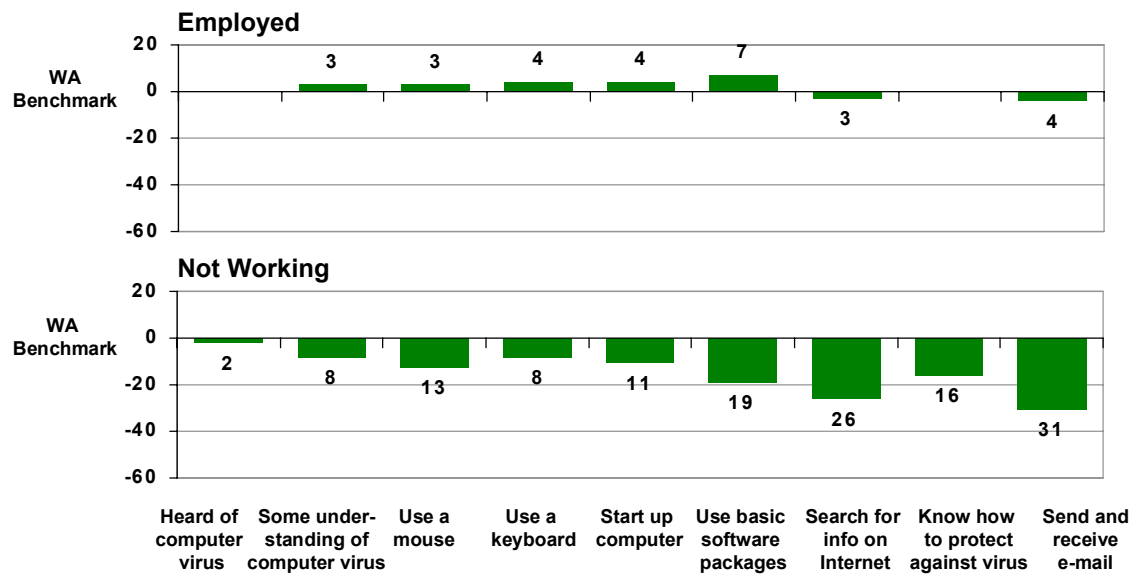


Figure 11: Comparative Levels of Computer Literacy – Regional WA





Computer Usage

The order of priority of the target groups is reinforced in terms of computer usage over the last 12 months. Figures 12 to 15 illustrate that across each group, those who are not currently employed are furthest removed from the state benchmark.

Figure 12: Comparative Computer Usage – Seniors

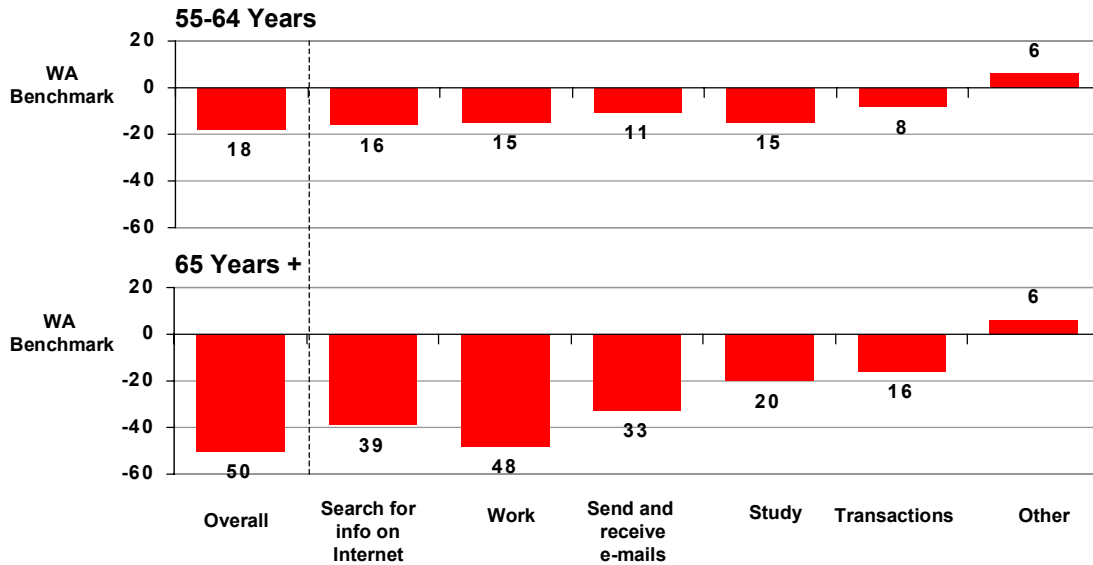


Figure 13: Comparative Computer Usage – Low Income Households

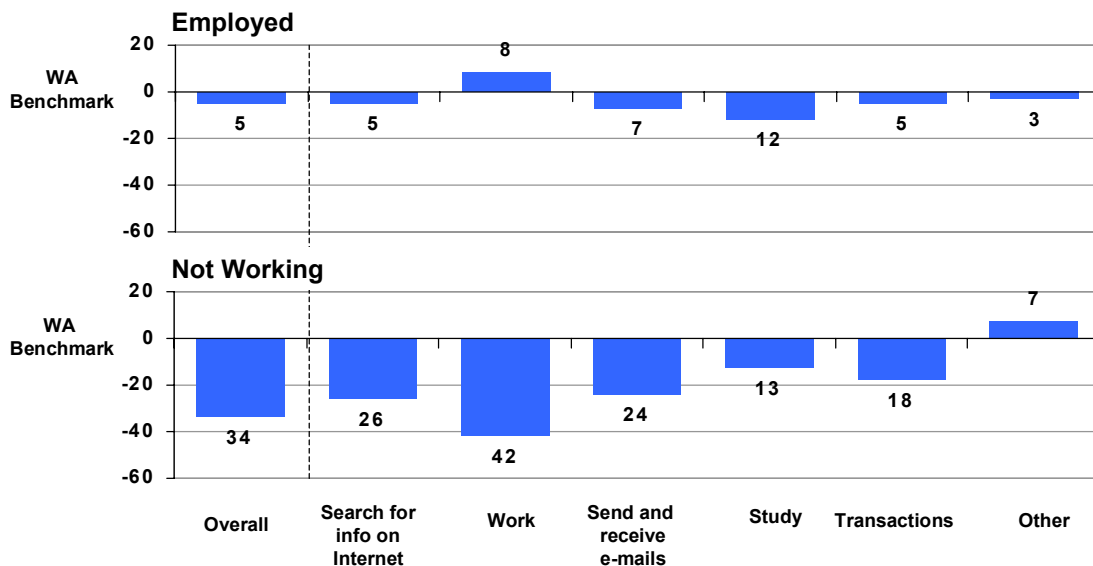




Figure 14: Comparative Computer Usage – Females Aged 40-54 years

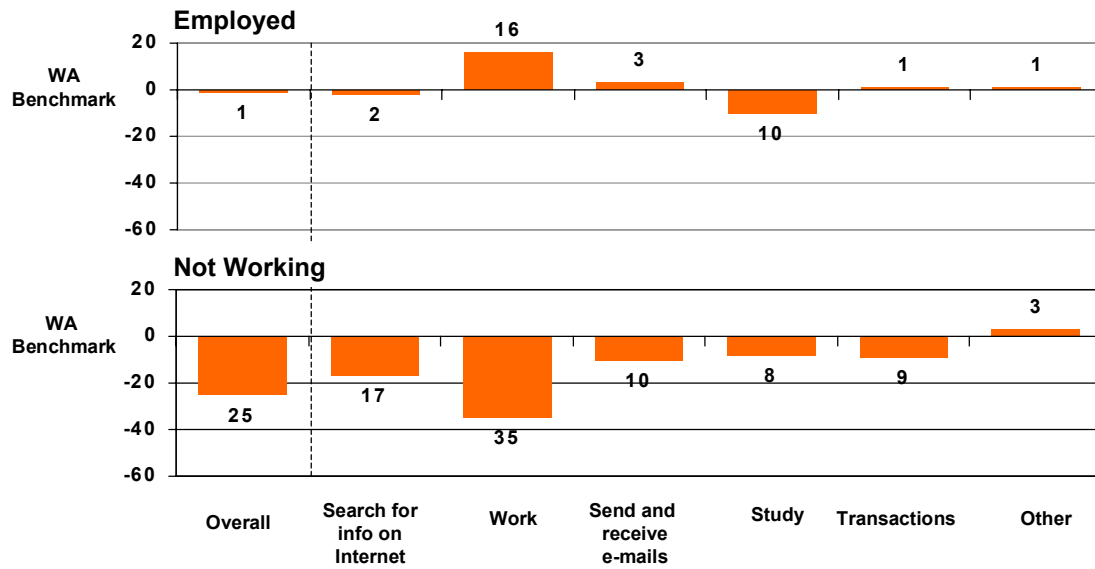
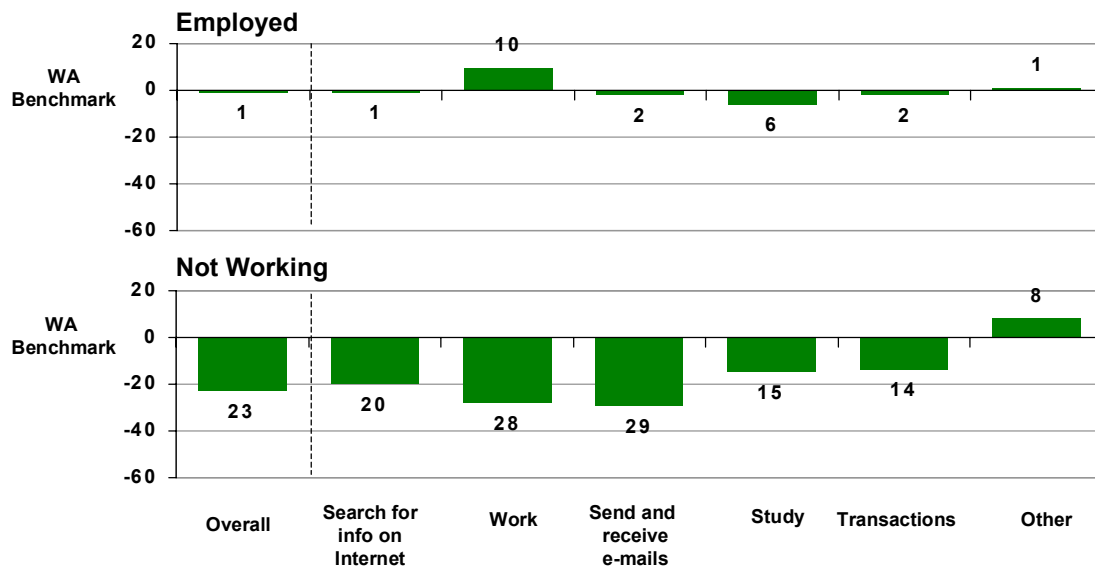


Figure 15: Comparative Computer Usage – Regional WA





Motivators & Barriers to Computer Usage

What Do We Communicate?



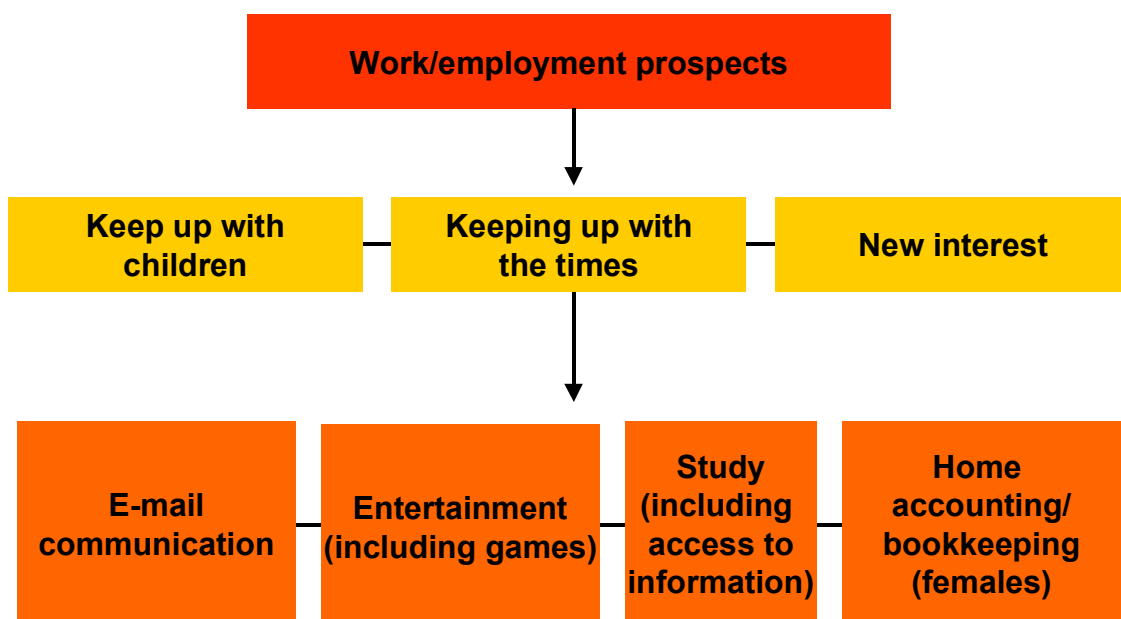


What Motivates Existing Computer Users?

The core fundamentals driving computer usage are common across each of the target segments. Among those who currently use a computer, the primary motivating factor is functional - work and/or the ability to improve employment prospects.

For those who are not required to use a computer for work purposes, there are other motivating factors on a more **personal** level once they have recognised the benefits a computer can offer – the challenge of keeping up with the times and the children, as well as the opportunity of satisfying their curiosity by pursuing a new interest. These motivators have scope to form the basis upon which campaign messages are developed.

Figure 16: Common Motivators for Existing Users



The following are a sample of specific comments made by current users:

“My kids were using a computer, I wanted to keep up with them so I learnt.”

“I wanted to learn so that I could keep up with the times.”

“I wanted to satisfy my curiosity – everyone else was using a computer so I wanted to see what it was all about.”

“Computers are the way the world is going to be”.



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"I don't like getting left behind in society – it's important to learn new things."

"I didn't want to be left behind because computers play such a large part of life these days."

"Typewriters were phased out so I had to learn how to use a computer."

"My son used one for school and I wanted to understand so that I could help him use it."

"I learned so that I can play games on the computer with my grandson."

"I wanted to keep in touch with other family members and research the family tree."



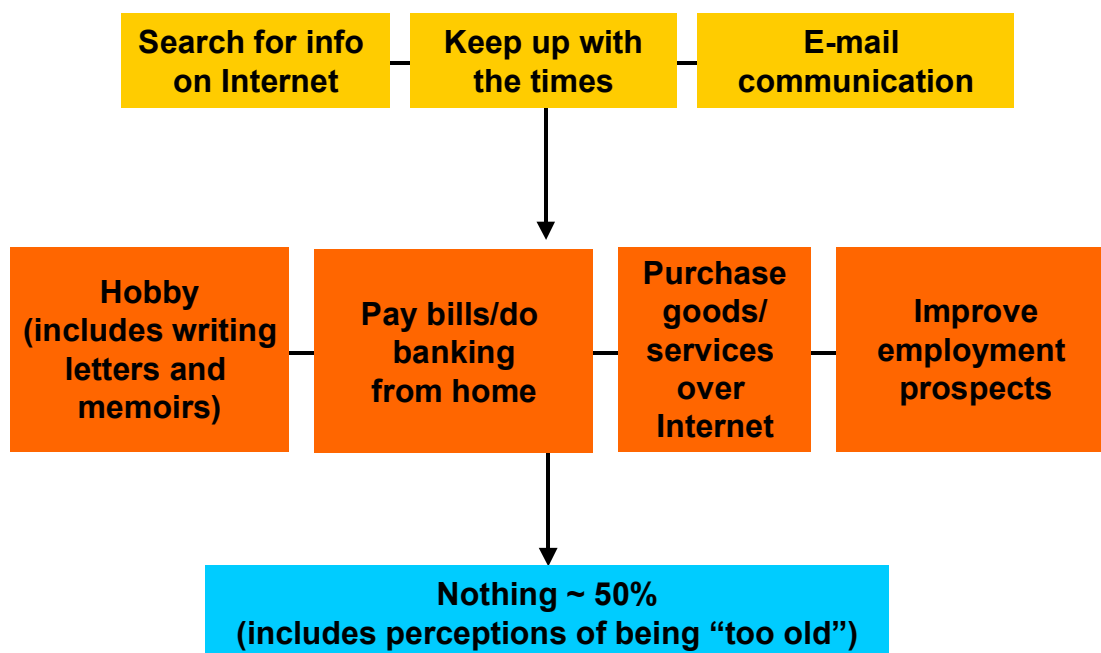


What Would Motivate Non-Users?

For those who do not currently use a computer, opinions are polarised between those who recognise the opportunities available to them but have not yet done anything to develop their skills and those who do not recognise any need and therefore have no interest to learn how to use a computer. The motivators are similar to those identified by current users - although predominantly personal in nature, seeing as these people have not already been required to learn for employment reasons – and are common across each of the target groups.

However, close to half of each target group indicate that nothing would motivate them because they are not interested, or are too old to need to learn.

Figure 17: Motivators for Non-Users



Please refer to Appendix 2 for detailed frequencies of responses by target group.

Examples of comments made by non-users who are keen to learn how to use a computer include the following:

"It would enable me to keep up with the modern world."

"It would be interesting, just knowing what to do with them."

"I would like to have e-mail access so that I can communicate with friends."



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Specific comments made by non-users who are not interested in learning, include the following:

"I'm too old to learn and have no need to learn. My daughter will do anything I need done on computer."

"I just don't like the idea of staring at a screen."

"I just don't want to know, I am not at all interested."





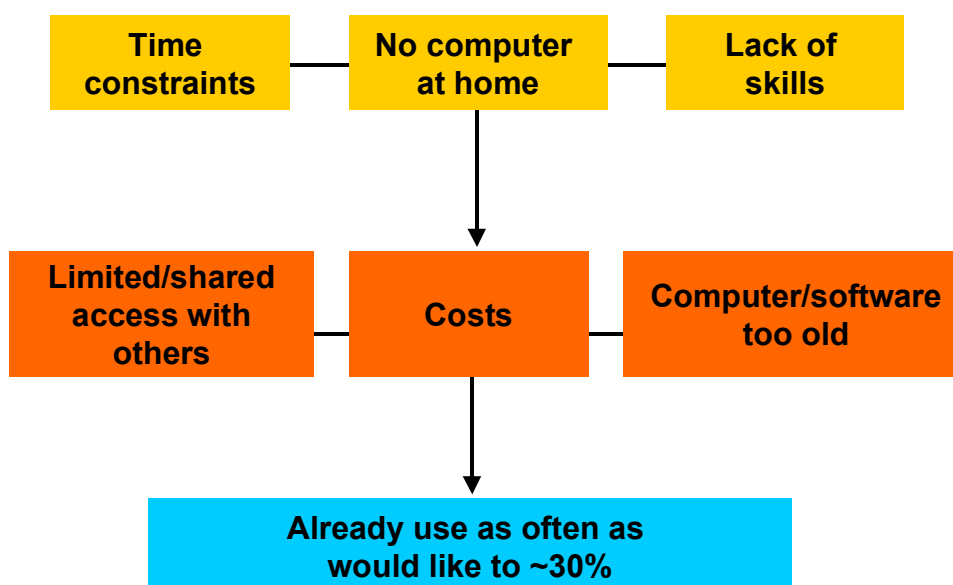
What Are the Barriers to Increasing Current Use?

The factors which stop people from using a computer more often are also common across the target groups. Interestingly, **not having a computer at home** is perceived as a key barrier, which highlights an opportunity to communicate other venues where computers can be accessed outside of work and home. Time constraints and a lack of higher level skills also present a barrier to increased computer usage.

Costs of technology and training, having to share access with other family/friends and outdated hardware and software are also prohibitive to increasing current levels of computer usage.

There are however almost one-third of each target group who do not wish to use a computer any more often than they already do and it is unlikely they would be open to further training.

Figure 18: Barriers to Increasing Current Use



Specific comments include the following:

"I can't afford Internet and e-mail access"

"I am not prepared to pay for the extra cost of Internet access."

"I only want to use it when necessary. I don't want to become the sort of person who sits in front of a computer all day."



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"It can become addictive – can take over people's lives."

"I use it all day at work so I don't want to use it when I get home."

"Internet access in the country is not very good - we often can't get online."

"I am still a little scared of computers."

"Fear of not knowing how to do much more with them."



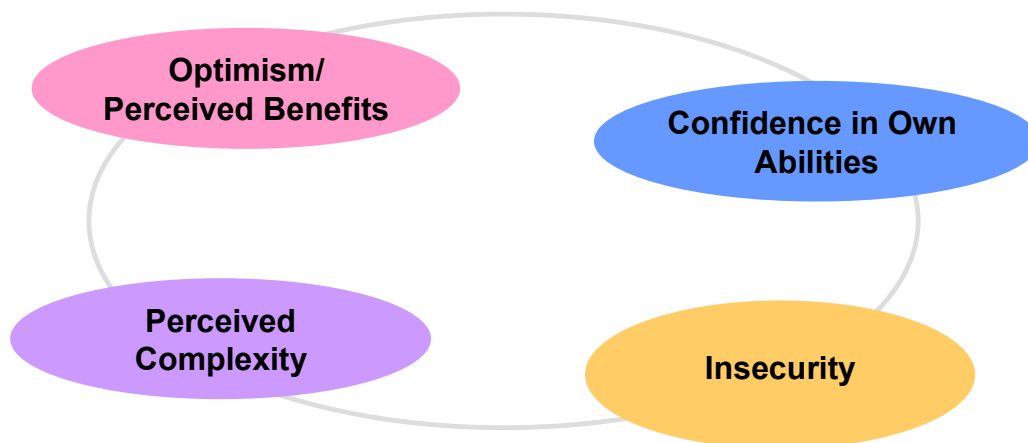


What Else do we Know about the Attitudes of the Various Target Groups?

To supplement the fundamental barriers and motivators to computer usage across each of the target groups, a model of Technology Readiness was developed to determine underlying attitudes towards technology. There is clearly a link between someone's attitudes towards technology and their uptake of computers and online services. In fact, a study which looked specifically at the uptake of online services identified a change management process which requires changes in behaviour **and** attitudes to make the transition from the 'familiar' methods to the 'unfamiliar'.

Four technology readiness factors were identified:

Figure 19: Technology Readiness Factors



In more detail:

- ◆ **Optimism/Perceived Benefits** – The extent to which someone recognises the importance of technology in today's society and the potential for technology to make their life easier. Low optimism is a barrier.
- ◆ **Insecurity** – Attitudes towards the security of online transactions, including perceived safety of providing credit card details over the Internet. High insecurity is a barrier.
- ◆ **Perceived Complexity** – The extent to which someone considers technology overwhelming and complicated to learn how to use it. High perceived complexity is a barrier.
- ◆ **Confidence in Own Abilities** – The degree to which someone is willing and confident to try new technologies without necessarily having any formal instruction or training. Low confidence is a barrier.



Optimism and security issues are best tackled in terms of communication – ie the benefits a computer can offer and the security mechanisms in place for Internet transactions. **Perceived complexity and a lack of confidence can best be dealt with in terms of the style of training delivery**, by ensuring that the training is easy to understand and provides reassurance that hardware is not easily damaged by touching the wrong button.

Figure 20 compares the technology readiness of each of the target groups on each of the four dimensions:

- ◆ **Seniors** fall behind on each of the four dimensions – optimism and security are both low, confidence is lacking and technology is perceived to be complex.
- ◆ **Low income households** also lack optimism and security, as well as confidence in their own abilities. Perceived complexity is not so much of a barrier to this group.
- ◆ **Non-working women aged 40 to 54** are low in optimism and confidence in their own abilities. Perceptions of insecurity and complexity are less of an issue to this group.
- ◆ The key attitudinal barriers for **non-working regional** people are perceptions of insecurity and confidence in their own abilities. Optimism and perceived complexity are less prominent among this group.

These present similar yet specific strategies for each target group – by dealing with each of these underlying attitudes towards technology, there is a greater likelihood of computer and online uptake.



Figure 20: Technology Readiness by Target Group

	Seniors	Low Income Households	Non-working Females 40-54	Non-working Regional
Optimism	Low	Low	Low	Average
Insecurity	High	High	Average	High
Perceived Complexity	High	Average	Average	Average
Confidence in own abilities	Low	Low	Low	Low





Training Delivery Options

How Do We Deliver the Training?

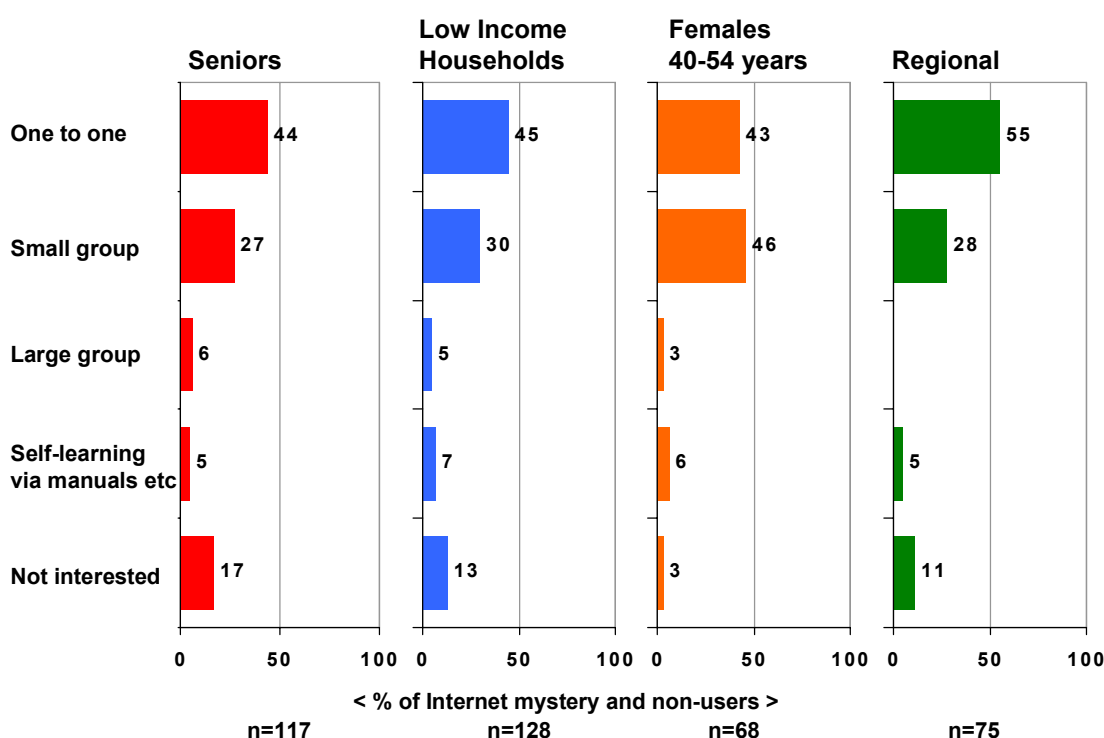




How Do We Deliver the Training?

One to one training and small discrete training groups are clearly the preferred options across each of the key target groups. Representatives from organisations who already provide training services to these groups, also agree that small, discrete groups in a relaxed, non-threatening environment are key success factors when delivering basic computer training.

Figure 21: Preferred Type of Training Delivery



In terms of the specific delivery options, those which were most positively received include:

- ◆ Supervised self paced training in a central location with a tutor at hand.
- ◆ Basic training at a central location with like groups.

Other options, including basic training at TAFE and more specific training sessions on Internet banking, were less attractive to each of the target groups.



Those in regional areas and females aged 40 to 54 years were the most receptive to the delivery options presented. Although low income households and seniors also expressed some interest, these target groups were least receptive overall.

Figure 22: Supervised, Self Paced in Central Location with Tutor at Hand

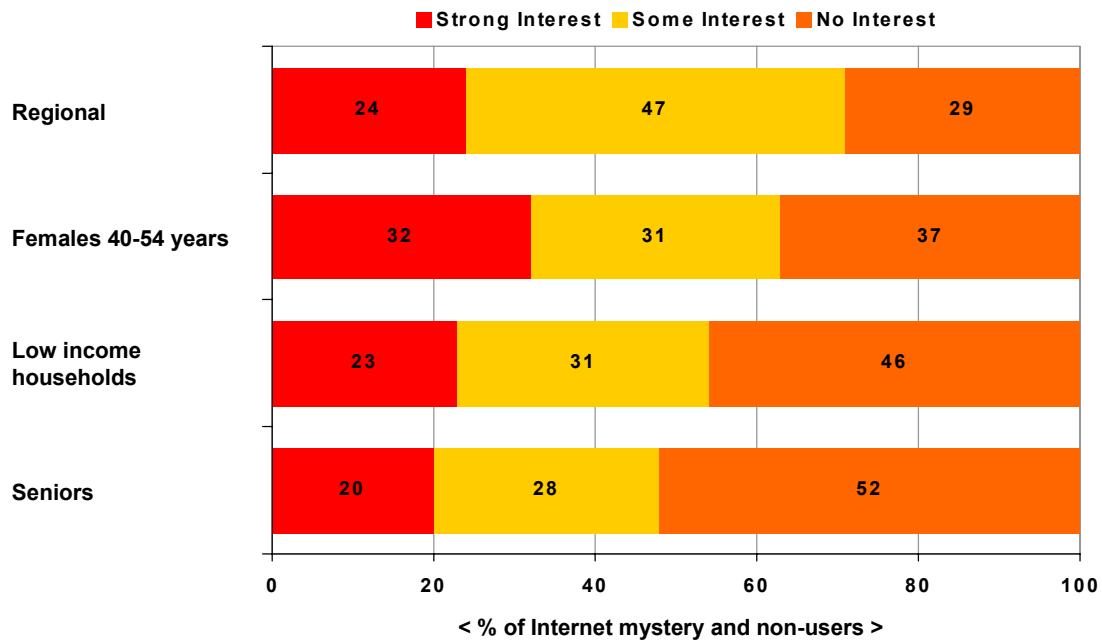


Figure 23: Basic Training at a Central Location with Like Groups

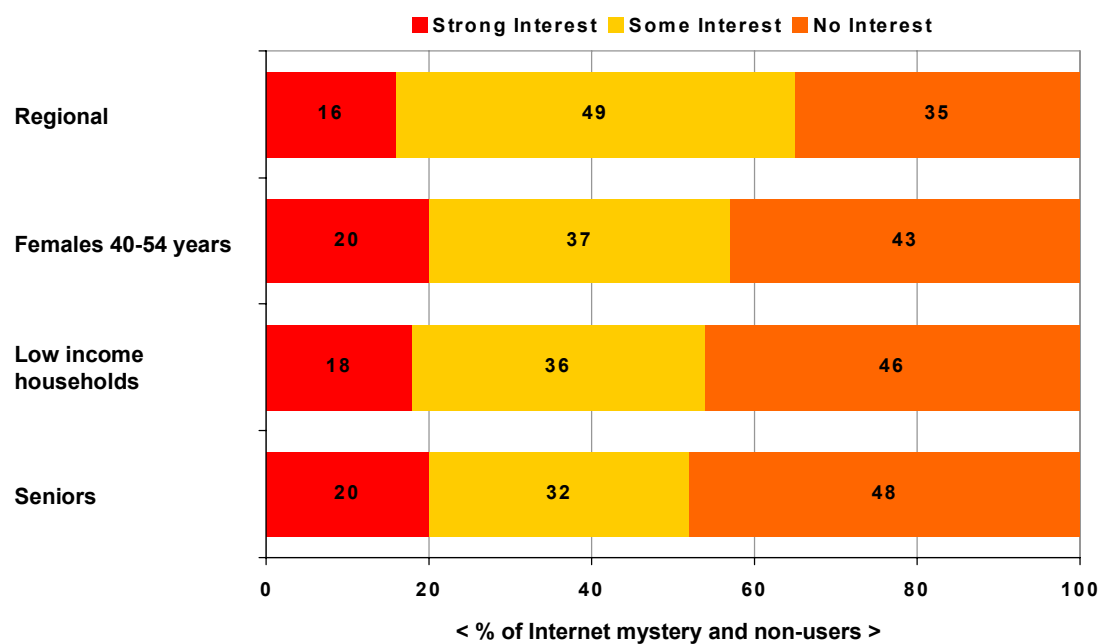




Figure 24: Basic Training at TAFE with Like Groups

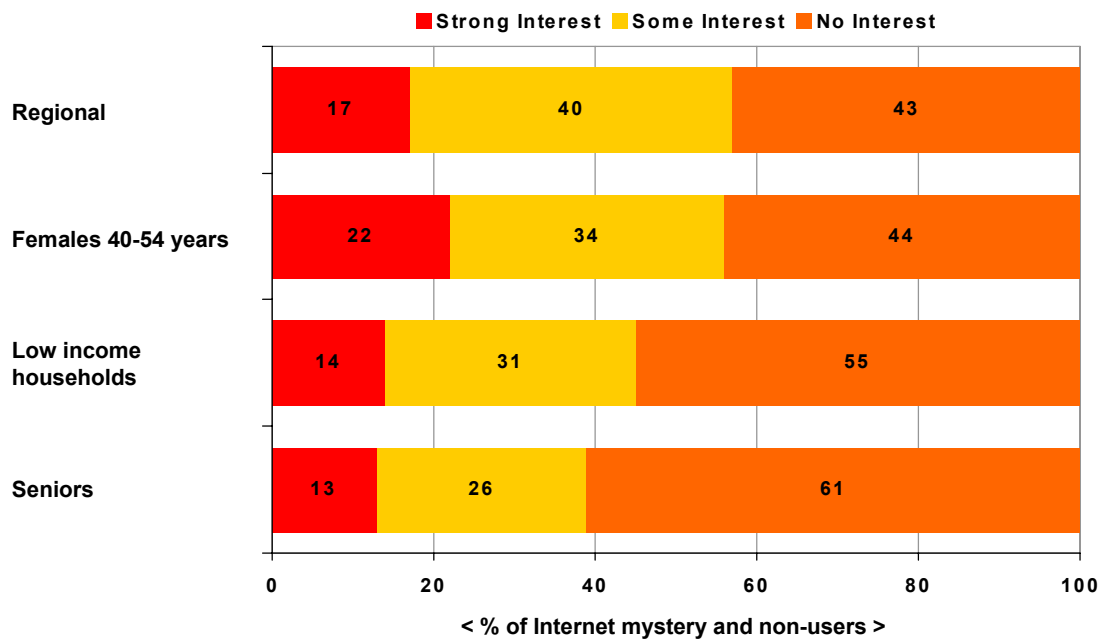


Figure 25: Training Sessions on Internet Banking/Bill Payment

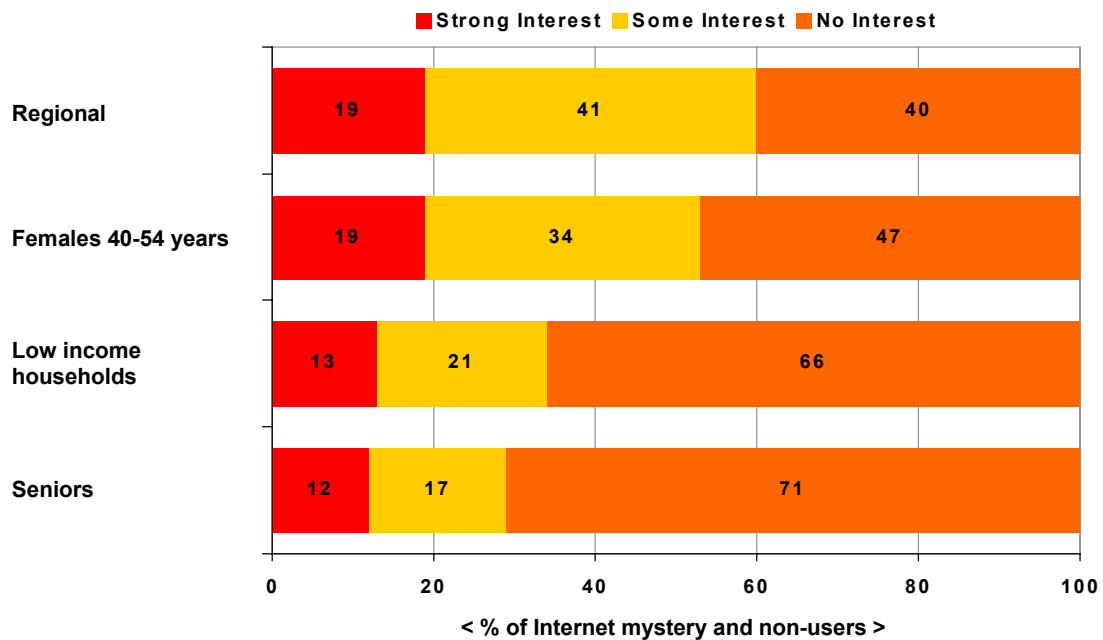
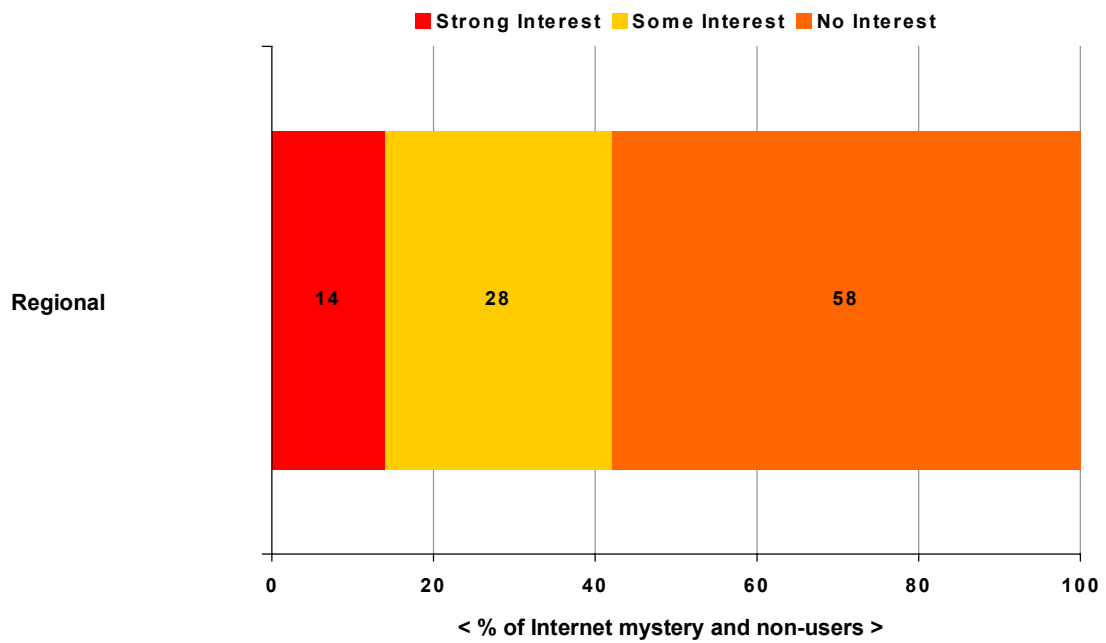




Figure 26: Supervised, Self Paced in a Mobile Unit (asked for Regional only)





Niche Target Markets





What are the Key Considerations When Developing Training Strategies for the Niche Segments?

A number of key considerations are common across each of the four niche target groups. Any strategy should take into account each of the following:

- ◆ **Flexibility** – The desired outcomes may differ from one individual to the next. For example, one may want to learn how to play games, another may want to learn how to type a resume. Once someone has developed the basic functional skills, any further training would need to be flexible enough to allow them to pursue those applications which interest them the most.
- ◆ **Individual needs** – Individuals within each of these groups may learn at different speeds. This needs to be considered when designing a training strategy for any of these groups.
- ◆ **Other basic skills** – These target groups may lack other basic literacy and numeracy skills, which prohibit them from effectively using a computer. Computer training may therefore be less of a priority to these groups.
- ◆ **Cost of technology and training** – A large proportion of these niche target groups would also fall into lower income categories and may not be able to afford the technology or the training.

Most importantly, there is already an existing infrastructure of training and support services being offered by various organisations who deal directly with each of these groups. There are therefore a number of opportunities for the Department of Training to add value to these existing services through the provision of additional funding and/or resource allocation.

Specific examples of existing services offered include the following:

- ◆ Access to computers at the organisation's premises – a number of these organisations encourage self paced learning with the opportunity to ask for help when needed. The problem with this in most cases is a lack of funding to improve or upgrade the facilities. There is also often an inability to provide a dedicated "tutor" resource to answer questions when they arise.
- ◆ Free or low cost distribution of 'old' computers donated by businesses – including someone who makes any necessary adaptations to the computer and then goes out to set the computer up at the person's home.



- ◆ Home tutoring services.
- ◆ Employment agencies identify specific skills and then send people to a registered training organisation. In fact, employment agencies recognised an existing Department service – *Profit From Experience* - as a positive initiative.
- ◆ There are also organisations who rent computers out cheaply to members of these target groups.

Indigenous Groups

Specific considerations with Indigenous groups, particularly those in remote areas include the following:

- ◆ **Cultural issues** – any training services should not be seen to be interfering with their values and customs.
- ◆ **Travel and access issues** – ability to access the community during certain seasons of the year, as well as access to the Internet via Internet service providers.
- ◆ The importance of a **non-threatening environment** – local community centres were preferred over TAFE for this reason.
- ◆ Preference for an **Indigenous teacher** – although not always necessary, this is preferred, or at least an Indigenous person in conjunction with a non-Indigenous teacher where possible.

Unemployed

Obviously the key motivator for this group is to seek employment. For this reason:

- ◆ **Accredited courses** may be more important to this group than to the others.
- ◆ Communications about computer training should be **outcome based**, explaining the link between the training objectives and on the job requirements.
- ◆ Different types of job may also require **different computer skills** (or none at all).



People with Disabilities

The key thing to remember is that all disabilities are different and that there are various degrees within each type of disability, each of which may impact on the training delivery methods. The key in most cases is the need to increase the confidence of someone in this target group through positive reinforcement and reassurance that the hardware is not easily damaged.

Other specific considerations include:

- ◆ **Physical barriers** – hardware may require adaptations (eg, height of table to fit wheelchair under) or special features to enable usage (eg, voice activated machines for the blind).
- ◆ **Transport** – access to and from locations may pose a barrier even if it is a central location.
- ◆ **Facilities** – if training is offered in a central location, it needs to service the needs of its users (eg, toilets, ramps etc).
- ◆ **Teachers** – as well as being able to teach the computer skills, teachers also need to be trained in dealing with people with a particular disability.

Non-English Speaking Background

The main barrier to computer usage is generally the **language** barrier. Other factors to be considered include:

- ◆ Potential **cultural considerations** across different nationalities.
- ◆ This group is often **motivated** by their children needing to develop computer skills, as well as a desire to keep in touch with family overseas.





Concluding Comments

This research has clearly identified a number of opportunities for bridging the digital divide in Western Australia. Fortunately, there are a number of fundamental principles which are common across each of the target groups identified, both in terms of motivators and barriers, as well as preferred training delivery options. However, one of the key challenges for the Department of Training and Employment will be to determine where there are already existing training and support services being offered, so that resources and funding can be targeted accordingly and not seen as a duplication of effort.

The Directors and staff of Market Equity would like to thank the Department of Training & Employment for the opportunity of working on this exciting benchmark project. We wish you every success with the Communications Plan and look forward to the opportunity of working together again in the future.

JULIE BEECK
Director

LINDA TAGNI
Account Executive



Appendices





Appendix 1: Target Groups Segments with Lower Computer Uptake

	Computer usage	Internet usage
Seniors (aged 55 years +)	30% computer usage compared to: 72% 40-54 years 83% 25-39 years 86% 18-24 years	220% increase in Internet <u>uptake</u> compared to: 67% 40-54 years 76% 25-39 years 57% 18-24 years
Unemployed individuals	35% computer usage compared to: 83% employed	23% Internet <u>usage</u> compared to: 62% employed
Households without children under the age of 18 years	42% computer usage compared to: 72% with children	27% Internet <u>usage</u> compared to: 47% with children
Low income households (under \$40,000)	57% computer usage compared to: 91% for incomes >\$40,000	39% Internet <u>usage</u> compared to: 74% for incomes >\$40,000
Regional households	62% computer usage compared to: 67% metro households	39% Internet <u>usage</u> compared to: 52% metro households

Source: ABS 8147.0



Appendix 2: What Would Motivate Non-Users?

UNPROMPTED

	Seniors (n=68) %	Low income households (n=65) %	Females aged 40- 54 years (n=20*) %	Regional (n=28) %
Nothing	52	49	50	39
To keep up with the times	9	12	10	25
Source of information – hobbies, genealogies	7	5	-	7
Too old to change – no advantages for me	18	15	-	18
E-mails for communication	6	6	10	4
Easier for writing letters/books	6	5	-	-
Work requirement/employment prospects	-	5	15	-

*Caution- small sample size

PROMPTED

	Seniors (n=68) %	Low income households (n=65) %	Females aged 40- 54 years (n=20*) %	Regional (n=28) %
Search for information on things that interest me	34	42	45	43
Communicate with family and friends by e-mail	31	34	45	25
Pay bills from home	13	14	20	25
Do banking from home	10	11	15	21
Take up a new hobby or share an interest with someone	19	20	15	25
Purchase goods or services over the Internet	3	6	20	14
Improve employment prospects	7	11	15	7
None - am not interested	54	52	50	50

*Caution- small sample size