



*Use of Mobile Phones
as a Vehicle to Increase Internet Use
to Improve Health & Wellbeing
in South Australia*

A report on research conducted
under the *Health in All Policies Health Lens Initiative*
for the Department of Health South Australia
and the Department of Further Education,
Employment, Science & Technology

December 2009

Authors: Dr Lareen Newman & Ms Kate Biedrzycki

Australian Health Inequities Program
and
Southgate Institute for Health Society & Equity
FLINDERS UNIVERSITY

CONTENTS

Executive Summary	1
Main report	4
1. The policy context	4
2. Findings from Phase 1 research	5
3. Rationale for Phase 2	7
4. Research approach	8
5. Results of focus group research	10
a) Infrastructure & Hardware	10
b) Skills and support	10
c) Cost	13
d) Content	15
6. Findings from a global literature scan	17
a) A framework to move from solutions to recommendations	17
b) Solutions elsewhere in the world	19
i) Infrastructure & Hardware	19
ii) Skills and literacy support	20
iii) Cost-offsetting	24
iv) Content	25
Additional resources	28
References and bibliography	29

Executive Summary

“Given time, low cost broadband mobile phones connected to the mobile broadband network have the best long term potential to ensure complete inclusion of all in the UK to the broadband Internet” (Digital Britain 2009:70)

This report is written to help inform policy directions to achieve the Broadband Usage target in the South Australian Strategic Plan while supporting improved population health under the SA Government's *Health In All Policies program*. This report details potential solutions to increase broadband use via mobile phones for lower-income and socioeconomically disadvantaged South Australians. Solutions were suggested in late 2009 by 30 Adelaide residents in three focus groups (age range 25 to 55). Additional solutions come from an associated project in late 2008 with 55 Adelaide residents on general digital technology use, and from a literature scan in late 2009 of solutions to increase mobile internet use elsewhere in the world, particularly for lower-income and socioeconomically disadvantaged groups.

The main finding from the 2009 Adelaide focus groups was that all **participants had a mobile phone that was internet-capable, yet only a few used this capability**. Some had already tried but given up. Along with general lack of awareness of what the internet on a mobile phone might offer them, the main concerns about starting or continuing use were affordability, security/safety and lack of skills and support. However, people were amenable to offering potential solutions that could be the basis for recommendations and action. This report covers solutions under four areas: Infrastructure/Hardware; Skills & Support; Cost; and Content.

An overriding theme was lack of awareness about benefits that internet on the mobile phone might offer, and fear of "giving it a try" due to expectations of incurring high bills or being "ripped off". People would be encouraged to try free internet options, or to increase use of the full internet on their phones, if they could become aware of how to access content relevant to their lives, knew how to do this so that allowance use and expenditure is transparent, and knew how to get support so that their experience is positive.

The academic literature suggests that **people go through an ordered set of steps to progress from being a non-user of internet on mobile to a full ongoing user**. The literature scan, and in particular evaluations of the Canadian and UK governments' national digital inclusion initiatives, show that people can be assisted to progress in their level of use. Solutions and recommendations can therefore help progress people through all steps, or move them to the next step. Some recommendations such as those addressing general awareness, cost and trust issues, have the potential to move the whole population to increased internet use.

Infrastructure & Hardware solutions to support greater population level digital use include having an explicit jurisdictional digital inclusion strategy and associated initiatives to support all citizens (for example Governments of Northern Ireland, England, Wales, Canada and Brazil). Further infrastructure support which is already available online to support consumer rights and skills acquisition in relation to digital technology could be

made available offline if the people who are currently offline are to transition to the online world (eg DBCDE and some ACMA information on cybersafety). Written materials currently aimed at teens (eg on “mobile phone safety”) was attractive to focus group participants who recommended it be written appropriately for the “average adult Australian” and advertised in the offline world eg on radio, posters, brochures at libraries etc. Telecommunications companies should develop an industry code of ethics and fair trading. Developing lower-cost phones with larger screens and buttons would facilitate web-viewing and make internet on mobile more attractive, as would expanding the number of mobile-friendly websites and finding ways to make people aware of their existence. Writing instruction manuals in ‘1-2-3’ jargon-free guides with pictures would also assist, particularly for those with low language or technical literacy and/or with English as a foreign language.

Skills and general support are required to address the **major barriers of lack of awareness and low skills**. A good proportion of people cannot imagine going beyond talk on a mobile phone. A solution is to find ways to raise awareness of affordable options for internet on mobile phones (especially prepaid), to show people how to use internet on their phone without incurring unexpected costs, showing them relevant mobile-friendly websites, and providing personal support to give their free mobile internet content “a try”. Such support is provided for lower-income and disadvantaged groups in the UK’s national network of UK Online Centres (which specifically includes training for mobile phone use), Canada’s Community Access Program, and Cybercentres in some US cities.

The key components of this solution are local personalised support on a cost-free drop-in basis, a place which is familiar, welcoming and easy to travel to, and where literacy problems, low income and lack of internet-knowledge are not looked down upon. Relevant locations include local libraries, community centres, drop-in centres, regional shopping centres, NGO offices and Centrelink. People want access to government “cybersafety” pamphlets in similar places and at point-of-sale, written for “the average Australian adult”. A free 24-hour independent and trustworthy phone helpline was also suggested for support and as an avenue for redress eg re cost comparisons, overcharging, unfair contracts, skills, safety, features, where to get more help.

Cost solutions relate to (a) contract and pricing; and (b) options to reduce cost or provide free or subsidised phone use. There was general agreement that many lower-income people will pay no more than \$15 prepaid over as long a timeframe as possible. Adding, say, \$8 per month for internet/data was not affordable for most, and many were unaware of combined prepaid talk+text+data packages which can be more affordable. Many said they would be more interested in mobile internet if it were free, subject to a guarantee of no hidden extra costs. In particular, people want greater clarity, simplicity and transparency in phone contracts, greater detail about what pricing includes or excludes, clarity about what a certain data amount provides (eg 10 webviews) and an independent source providing personalised cost-comparisons for lower-income budgets.

People also offered suggestions to make internet on mobile cheaper or free. This includes making portal sites free for prepaid users or concession card holders, allowing regular amounts to be deducted from welfare payments to cover internet services as a

basic need, providing the option for the institutional landline subsidy to concession holders to be transferable to a mobile phone, offering phone/internet recharge as an alternative on existing incentive schemes (such as petrol subsidies offered by supermarkets which are useless for those without personal vehicles), and companies offsetting mobile internet costs by advertising (as with free-to-air commercial TV).

Content ideas were also put forward. Free content already on mobile phones can encourage people to “have a try” but for many will first require a trustworthy guarantee of no hidden costs. Many also require awareness-raising of what content is relevant to them, and to seeing how this is different and more beneficial than their current information channels. Particularly attractive content is transport timetabling and real-time progress mapping for buses and trains. Raising awareness of the existence of internet social networking may also increase use. Other content options focus around ordering fast food and supermarket deliveries, and nominating a set number of free-access websites (as with nominating a set number of phone numbers that can be called for free).

Increased pushing of text alerts by providers, including government, could also support an increased range of use on the mobile phone, moving people further towards ongoing internet use. People already like receiving text alerts for appointment reminders and particularly welcome “important” texts. The government is seen in this category but must identify itself on incoming alerts. Lower-income people would welcome a reply-paid service for mobile phones that mirror reply-paid enveloping or they will be suspicious of providers shifting costs onto them as consumers. Those who do not understand texting require support to deal with such texts, or texts must arrive on the phone's front screen.

The cost-free aspect of Wi-Fi hotspots is particularly attractive, although many lower-income people's phones are not Wi-Fi capable. Many people are also unaware of what Wi-Fi actually is and require plain English explanation on Wi-Fi signage (“*Wi-Fi available here - this means free internet on your mobile phone*”). This could particularly apply at SA Government sites.

Main Report

1. THE POLICY CONTEXT

In 2007 South Australia was challenged to implement the European Union's *Health in All Policies* approach (Stahl et al 2006) by Adelaide Thinker in Residence Professor Ilona Kickbusch. She laid out a series of steps to guide the South Australian (SA) government in the development of its own individual approach. In responding to Professor Kickbusch's challenge, SA embarked on a policy learning process to translate the policy into practice and in the process developed an innovative early stage Health in All Policies model which is supported by the Minister for Health and the Executive Committee of Cabinet.

The Health in All Policies (HiAPs) program is an innovative strategy of the SA Government which aims to reduce the negative impacts that policy decisions of non-health sectors have on health and wellbeing. The health and wellbeing of South Australians is largely influenced by the social determinants of health - factors that tend to lie outside the influence of the health system but that are strongly affected by the policy decisions of other government and non-government agencies. The HiAP approach is based on working together to achieve win-win outcomes, ie that enable both improved population health outcomes and the realisation of other sectors' goals.

A key part of the model is applying a *Health Lens* to South Australia's Strategic Plan (SASP) targets, plans, policies and proposals in partnership with key lead agencies. The Health Lens assists policy and decision-makers both within and outside the health sector to recognise interconnections and appreciate the important role that non-health policies play in promoting health and wellbeing.

One of the initial *Health Lens Initiatives* supports SASP Target 4.8 on *Broadband usage* which is "to exceed the national average by 2010 and be maintained thereafter". The Information Economy Directorate of the Department for Further Education, Employment, Science & Technology (DFEEST) has lead for the achievement of this target. As part of this Health Lens Initiative, SA Health and DFEEST contracted Flinders University to assist by providing research for two phases of the project.

This report relates to Phase 2 of a project, conducted from August to November 2009, on the specific topic of *Use of Mobile Phones to Increase Internet Uptake to Improve Health & Wellbeing*. Phase 1 of the project was undertaken between May 2008 and February 2009 on the general topic of *Digital Access and Use as 21st Century Determinants of Health & Wellbeing: the Impact of Social & Economic Disadvantage*. The 2009 Adelaide Thinker in Residence, Genevieve Bell, also had a focus on digital technologies in regional SA and presents her final report in February 2010.

2. FINDINGS FROM PHASE 1

The research for Phase 1 was conducted with participants from lower-income and socioeconomically disadvantaged areas of metropolitan Adelaide. These groups are known to have lower digital technology use when compared with the whole South Australian population (see Glover et al 2006). However, there is little international literature exploring the factors affecting digital technology within these groups, particularly in Australia. Phase 1 therefore comprised 6 focus groups with 55 people in different areas across Adelaide. The focus groups explored:

1. What digital technologies are accessed and used by people of lower socio-economic background in South Australia?
2. For what reasons and in what ways are people of lower socio-economic background accessing and using these technologies (or not accessing and using them)?
3. In what ways does having, or not having, digital access and usage contribute to, or detract from, health and wellbeing for these groups?
4. What are the pathways by which having or not having digital access and usage contribute to, or detract from, health and wellbeing for these groups?

The main findings from Phase 1 were that:

- Three quarters of participants were in the intended age range of 25-55, and they were more socially and economically disadvantaged than the South Australian population as a whole.
- Almost all resided in areas of lower socioeconomic status, three quarters lived in rented housing and had an income equal to or less than the state average, two-thirds were living with some degree of perceived financial strain, most were in lower occupation groups, one in ten was a sole parent with children, over half had children under 18 living at their home at least some of the time, over a quarter were Australian Aboriginal, two-fifths spoke a language other than English at home.
- Only just over half had a computer at home, but almost everyone had a mobile phone. Yet, there was a wide variety in how often people used their mobile phone, or what features they had the skills or finances to use.
- Cost and lack of skills were barriers to using digital technologies for some people, to using them more often, or to using more of their features.
- But participants also spoke about **many direct benefits for their general health and wellbeing**. For example, with a mobile phone people felt safer being able to

contact others if they were out late at night or had missed their bus, they could keep in touch more with friends and family.

- With the internet they had opportunities they would probably not otherwise have had, such as they could find job adverts easier, or could look for work after business hours, or apply for a job online, enrol for a TAFE course, or find their own information without someone else doing it for them (eg parenting or health information, checking the weather to go fishing).

3. RATIONALE FOR PHASE 2

Based on the findings from Phase 1, the rationale for conducting Phase 2, and the research component associated with this, was as follows:

- Most participants in Phase 1 at least owned a mobile phone even if they could not get access to a computer.
- Recent data shows that 83% of Australian adults have a mobile phone (including 79% of retirees and 63% of the unemployed - Australian Communications & Media Authority – ACMA - 2009).
- In the time since the start of Phase 1, mobile phone handsets on the market have been increasingly updated to include internet capability, whilst the once high costs of mobile internet connection (or “data download” to a mobile phone) are falling.
- Data from Western Europe suggests that more than a third of consumers will access the Internet using their mobile phones by 2014, and that mobile internet adoption was set to grow to 39 percent in Western Europe in 2014, from 13 percent in 2008 (Reuters 2009).
- An April 2009 survey in the USA by the national Pew Internet & American Life Project shows that use of the internet on mobile devices grew sharply from the end of 2007 to the beginning of 2009 and that internet access on mobile phones “serves as a substitute for a missing onramp to the internet” for African Americans, so that the digital divide between African Americans and white Americans diminishes when mobile use is taken into account (Pew 2009).
- The SA government's policy is to encourage greater use of internet access to its services and information so it is important to find ways to ensure that all South Australians have the supports to enable them to do this successfully.

Therefore, although some participants in the Phase 1 research in SA needed mobile phones and/or internet access to be more affordable, needed new skills to use more features, or needed more trustful sources of support, **it was hypothesised that mobile phones could be a more affordable, convenient, and easier-to-use way to support increased access to the internet and its benefits, than using a computer, for the majority of the SA population and also particularly for those in lower-income and socioeconomically disadvantaged groups.**

4. RESEARCH APPROACH

The aim of the research component of Phase 2 was:

- a) to conduct focus groups to explore solutions to increasing internet access via the mobile phone for people in these groups/populations in South Australia.
- b) to conduct a literature scan on the use of mobile phones to increase internet use, particularly among lower-income and socioeconomically disadvantaged populations in order to identify potential solutions.

The research asked focus groups about four areas:

1. **Infrastructure & Hardware**

- who has a mobile phone
- is it internet-capable
- are people on prepaid or plans (and why?)
- how did they acquire their current mobile phone (phone company; department store, gift).

2. **Skills and support**

- what types of content would be more or less useful via internet on mobile (eg transport timetables).

3. **Cost**

- what do people consider affordable for mobile phones/mobile internet (buying, using, upgrading, maintaining)
- how could mobiles/internet be packaged to help people be able to purchase and use it
- how influential are “hidden costs” on mobile-internet use
- with which type of organisations/people would they feel safe negotiating contracts and “small print”
- would better knowledge about free Wi-Fi connections support people to try using the internet on their mobile phone.

4. **Content**

- what types of content would be more or less useful via internet on mobile (eg transport timetables, events information, supermarket specials, health information, weather).
- feelings about being sent text message alerts (eg government safety warnings re heat, bushfire) or links to important information
- feelings about being sent text reminders (eg to renew car registration, for doctors’ appointment)
- feelings about being sent text messages which require the user to pay to respond.

The research design emulated that of Phase 1 in being based on focus group discussions with people from low-socioeconomic backgrounds in metropolitan Adelaide. Three focus groups were conducted in two outer-suburban and one inner-city area of Adelaide in November 2009. To expedite the recruitment process, two focus groups were held at the same locations as in Phase 1 groups, while a third group from Phase 1 was no longer available and so a new location was organised.

To maximise chances of recruiting people from low socio-economic or disadvantaged groups, recruitment was again organised in areas identified by Glover *et al* (2006) and ABS (2002) as being of lower socio-economic status according to education level, income, and occupation group. A focus was again made on recruiting in the 25 to 55 year age range, which is the main family formation and working age group. The 3 focus groups, with a total of 29 participants, were:

- 1 women-specific community support group (16 participants -“Women’s group”)
- 1 men-specific community support group (6 participants - “Men’s group”)
- 1 group living in community rental housing provided at an affordable price to people on low incomes and/or at risk of homelessness (8 participants - “Housing group”)

The project manager and research assistant conducted the 3 focus groups, mostly in the presence of the groups’ usual community worker who had assisted with recruitment. The same schedule of questions was used for each group, with additional areas explored as raised by participants at the time. The question schedule was developed based on the findings from the Phase 1 research, input from the project’s Joint Expert Working Group, and findings from the literature scan. Focus group discussions were recorded and transcribed verbatim so that the data could be analysed for solutions and other themes. Each participant was thanked for their participation with a free lunch which preceded the group discussion, and a shopping voucher valued at \$30.

The literature scan was conducted in August and September 2009 and included a search of both academic publications as well as the internet. Much of the literature was in government reports and the “grey” literature, whilst the most up-to-date information came from web-based articles. A full reference list and bibliography are supplied at the end of this report.

5. RESULTS OF THE FOCUS GROUP RESEARCH

The results are presented in four sections, according to areas of interest identified in Phase 1:

- a. Infrastructure & Hardware
- b. Skills & Support
- c. Cost
- d. Content

The results particularly focus on solutions to increasing internet uptake for lower-income and socioeconomically disadvantaged groups.

A. INFRASTRUCTURE & HARDWARE

Almost all participants had a mobile phone which was internet-capable, yet only a few were currently using this capability.

Greater use could be supported by:

- Finding a way for people to **discover what benefits internet-on-mobile could offer them** and to overcome their perception that the internet is a luxury. Some had given their phone's internet button "a try" but had been put off forever by incurring unexpectedly large bills.
- **Lower-cost phones having bigger size screens** and bigger buttons (and a keyboard for some people) if people are to use the internet on their phone. Very few had i-Phone type phones with larger screens (these are too expensive for those on limited income). Need simple, big button handsets - literature scan shows these do exist but people need to be made aware of them.
- **Making web sites more mobile-friendly**, as they are hard to read on small screens.
- **Clearly differentiating free access** internet content and paid content so people cannot "push the wrong buttons" or confuse the two.
- **Raising awareness about lower-cost imitation i-phones** eg iTouch bought on E-bay for \$150 not \$800 - this raised interest in the group.

B. SKILLS & SUPPORT

A key theme to arise throughout the three group discussions was the need for awareness raising, as it was hard for a good proportion of people to imagine going beyond talking on a mobile phone. There is a need for:

- raising awareness of affordable options for internet on mobile phones – especially highlighting affordable prepaid options for talk + text + internet. People need an

environment that can encourage them beyond talk (which is the only use that many saw for a mobile phone) and also beyond talk+text for others.

- raising awareness of how to use internet on mobile without incurring unexpected costs.
- raising awareness that internet access can be good on less-than-expensive phones (with smaller screen size and buttons etc) especially on mobile-friendly websites.
- raising awareness of how and where people can get support to use internet on their phone and to be shown content that is relevant to them so they will give mobile internet "a try", including the free content they already have.
- people's main awareness and information channels are currently friends, television and radio (tended not to be print media – probably due to literacy issues for some).

The solutions people suggested were wide-ranging, as follows:

- **Ensure people's first mobile internet experience is positive**, or they can get "burned" for life and never try again. Need supports in place if free internet trials are to be taken up.
- **Provide personalised learning options** run by a person (ie not a machine). Provide a person/place to help them to do this face-to-face; somewhere they are used to going and trust.
- **Provide a safe environment for people to try out and practice using mobile internet** – particularly somewhere where a person can help with personal needs to learn mobile phone and mobile internet features – people want this to be somewhere they are familiar with and feel comfortable going, that is easy to get to and provided for free, where they feel welcome and know they won't be treated "like an idiot" because they are not internet-savvy – locations suggested were libraries, community centres, drop-in centres and regional shopping centres. They must also accommodate users with literacy problems.
- **Build skills to build confidence** (eg "I wouldn't know where to look on my phone to see what features are free"). Skills limit what people can use.
- **Provide guidance on how to navigate** particular websites that are relevant to them eg Centrelink site. (Don't just direct people to the site without checking if they require support – some were very angry and disempowered after some Centrelink offices had directed them away from personal support at a counter to a computer that they did not know how to operate).
- **Centrelink is a potential 'capacity building' site** depending on how it's implemented, especially because people are often directed to use the computers when they go to Centrelink but aren't confident to use them (mentioned unprompted in two groups).
- **Centrelink as site to provide a general flyer AND personal support** for more complicated queries about using the internet, especially for those that can't read. Seen as location which understands that people coming to them are usually on tight budgets.

- **Make adult “general population” pamphlets available** on “mobile phone safety” and “consumer rights” - available in places they go, posted out with all Centrelink information, and provided by law at all points-of-sale and police stations.
- **Fridge magnets with key safety points and key phone numbers** would be helpful. Especially wanted the contact number for the Telecommunications Ombudsmen which many had not heard of - need to clarify that this is independent and not privately financed by the Industry (or people are suspicious).
- **Raise awareness of what benefits mobile internet can offer “the average person”**. People aren’t even thinking that using internet on their phone could be an option for them, even if their phone has this capability.
- **Free 24-hour phone helpline** for any queries eg for cost comparisons, overcharging, unfair contracts, skills, safety, features, where to get more help. Must be provided by someone who is trusted, reliable and familiar.
- **Simple and protective contracts** are needed (not ones designed to “rip you off”).
- **Legally require full consumer support** at all Points-of-Sale - how to use features; what free-of-cost features available; fine details about the contract including pricing and how to check the “as-you-use” balances on the phone; what happens when you go over your limit, what happens when you click on the wrong button, what happens if the recharge doesn’t occur in the set period, how to lodge a complaint etc; ending with offer to return if any further support needed. DVD-based support could be useful but not everyone has a DVD player at home. AND companies cannot be the sole support as not everyone trusts them.
- **Provide easy avenue for redress**, such as a phone helpline, when people feel they have been unfairly “taken for a ride” or want to check on suspiciously high bills, unstated costs or unintended subscriptions accompanying responding to TV competitions, etc.
- **Develop an industry code of ethics** to improve consumer trust (as per previous item) and find a way to make all consumers aware of this (eg legal requirement to provide information upon purchase).
- **Allow people to take contract texts away** from shops before they buy, so they can go through the fine print with someone they trust.
- **Computing/internet/mobile phone courses need to be affordable and accessible** (TAFE is not affordable, WEA not accessible in all areas) and well advertised so people are aware they are being offered.
- **Build on existing skills** - eg if people know about Bluetooth, then explain the internet as just another way to download, upload, communicate etc
- **Centrelink could subsidise learning around internet on mobiles**, in the same way they pay for literacy/numeracy training as a key competency to get work.
- **Make instruction manuals simpler** – ‘1-2-3’ jargon-free guides with pictures.
- **Put a basic tutorial on the actual phone**, but need to show people how to find and use this - touch screen options can be helpful.

C. COST

This section covers solutions in two areas: Contract and pricing issues; and ways of reducing the cost or providing free access or free/subsidised phone recharge. There was general agreement across the groups that most prefer to pay for a \$15 prepaid as a maximum, over as long as possible - adding \$8 per month for internet/data is not conceivable. The highest cost phone plan in the groups which included internet, was \$30 a month. Some would use mobile internet if it were free, subject to a guarantee of no hidden extra costs.

Contracts and pricing issues

As with the groups in Phase 1, the participants in Phase 2 mentioned their use of mobile phones and internet on mobile as being constrained by lack of clarity with phone contracts, lack of detail about what pricing included or excluded, predatory marketing from telecommunication companies, and pricing which was inappropriate to their needs. They suggested the following solutions:

- **Requiring clearer contracts** so people know what's "safe" to use and not. Most would feel reassured to at least "try" the internet on their mobile if they could trust what they were being charged for.
- **Putting laws in place** to prevent trading by unsupported carriers.
- **Providing contracts which guarantee no hidden costs and clear as-you-use pricing** information on the mobile phone, showing dollar amount to be incurred (eg to look at a particular site), dollars paid for, amounts used, amounts remaining.
- **Explaining what people can get for data limits** eg 100 MB = 20 emails, 10 web views. Participants were more interested once data amounts were discussed and understood. Also, the idea of using phone as a modem or gongle made it more appealing. This needs advertising, as this makes internet-on-mobile (IOM) more marketable.
- **Providing a data "counter" on the phone** to reflect approximate number of tasks or minutes left (eg 25 emails left; 10 Google views left) and a cut-out when the limit is reached. There was an assumption that balances cannot be checked on a plan because a written bill is posted out. Some phones already had this "counter" but most did not know how they would find this on their particular handset.
- **Raising general awareness of the "real cost" of mobile internet** - eg there was excited discussion in two groups of someone's lower cost internet/talk/text plan which involved an extra \$8 per month for internet access.
- **Marketing/advertising phones as computer alternatives or mini-computers** for those who cannot afford a computer.
- **Establishing cost-comparison phone lines or websites** to check phone/data costs – these exist but only one person knew this. Need single point of

independent advice for cost/benefit comparisons (including for those without internet, so they can find out what mobile internet package to start on).

- **Sending pushed update alerts from a trusted independent source** about which telecommunications companies currently provide the best value for money deals.
- **Providing cost information** as part of standard financial counselling/budgeting advice to lower-income groups (eg through NGOs, Centrelink).

Free access or cost-offsetting

Also as with participants in Phase 1, those in Phase 2 mentioned the financial cost of buying and using a mobile phone, and internet on mobile, as barriers to starting or increasing use. However, a wide range of strategies was put forward, as follows:

- **Providing “free internet timeslots”**, as per “free text” timeslots. However, free internet trials are only taken up if people can trust they have no hidden costs or subscription traps. Many of those with free internet options already on their phones had not yet felt safe to “give it a try”.
- **Making portal sites free for prepaid users** or advertising if this is already so – perceptions are that Telstra 3G free internet sites are only available with a plan.
- **Providing the option for a regular amount to be deducted from welfare payments to cover internet services** so that people do not have to budget - “if the government wants us to use what is becoming a basic item, they need to support us doing that”.
- **Providing a subsidy for internet use on mobile phones by concession holders**, as per the current landline subsidy (and particular as many lower-income people are giving up landlines anyway).
- **Putting more options into prepaid deals** (similar to what is available via plans), including credit that never expires.
- **Genuinely tailoring some plans to low-income people** – making them available in smaller data amounts or price denominations as-needed (ie not long 2-year plans). Bringing down data costs and combining with prepaid text/talk (note: this is already available with a few companies, but only one person knew about it for prepaid).
- **Providing mobile phone credits/vouchers** as per fuel vouchers, or advertising lower-cost recharge on shopping receipts. Free recharge via loyalty cards.
- **Offsetting costs by advertising**, as with free-to-air commercial TV. Some would accept advertisements to their mobile if it reduced their cost of mobile internet.
- **Reducing speeds for standard access by charging premiums for faster rates**, or making full use of bandwidth so mobile internet becomes more attractive.

D. CONTENT

People were asked what content would be useful to them on their mobile phone, both generally, and through pushed text alerts. Strategies to consider include:

General content

- Providing **free content encourages “have a try”** but requires a trustworthy guarantee of no hidden costs.
- **Developing strategies to raise people’s awareness of content relevant to them** - a few participants already use free maps, free weather, free TV guide, free news, and free access to The Trading Post on their phone (with the latter, they particularly liked the ability to search only for information for their area, which is not possible with the print version). Email was useful for professionals “on the go”.
- Identifying points of difference and **benefits of mobile internet as opposed to computer internet** eg awareness-raising of enhanced convenience and real-time benefits when away from home.
- Providing **content that is “handy while on the go”**: transport timetables, renew a car license or car registration online. Some men liked the idea of looking up dating or “escort” websites.
- Providing the ability to **check real-time progress of buses and trains** on a free map would attract many – particularly as a good proportion do not own a car and so use public transport.
- Encouraging **awareness of the benefits of social networking sites** eg a few were using or had tried Facebook on their phone.
- Exploring the use of **shopping options** eg ability to place a grocery order online via the mobile phone for delivery to your door.
- Exploring possibilities of **attraction with food content** (eg Pizza Hut’s new WAP application evoked interest,).
- **Coupons** sent via text could encourage use - similar to junk mail in the postbox.
- Making it possible to **nominate a set number of websites accessible for free** rather than chosen by the company – similar to 20-minute low-cost/free talk/text to specified numbers.
- Using the internet on mobile **to make face to face contact** (eg via video phone?) eg with friends, with service providers because some people do prefer face-to-face contact.
- **Subsidising Wi-Fi enablement** or making all phones Wi-Fi enabled - free Wi-Fi is very attractive, but most phones are not Wi-Fi enabled.
- **Advertising what Wi-Fi is** - signs should say “*Wi-Fi available here (free internet on your mobile phone)*” - some have seen the signs but have no idea what Wi-Fi

means for them. This could particularly be done at SA Government sites to start with where Wi-Fi is already available for free, eg Women's & Children's Hospital.

- **Advertising free Wi-Fi locations** and making more Wi-Fi hotspots in locations relevant to lower-income people - libraries are a good start and easy transition for those already using computer internet there; bus stops and train stops were also suggested to be free Wi-Fi zones.
- Providing support to **show people how to put passwords on their phone** if they are to use it for any personal content (including doctor's appointment information for some). Trust needs to be built re privacy of personal content especially if content such as banking or Centrelink look-ups are to be more attractive via internet on mobile phones.

Pushed Text Alerts

- People already **like receiving texts for appointment reminders** eg some are already receiving dentists, doctors, hairdressers, Centrelink.
- Some **already receive text alerts for shopping specials** from department stores but ignore them as not important ("junk mail"). Government alerts were however seen as "important" and would be opened.
- **Publicising government alerts** that can be sent to a mobile - make it standard for service providers to ask people if they would like text alerts/appointment reminders sent to their mobile phone (but don't assume they will always have the phone on and receive them).
- **Government is trusted but must identify itself** on incoming texts or people will not have the trust to open them – must be seen as important compared to "junk mail".
- **Pushed alerts on important topics** may be a good way to target low status populations and introduce them to internet on mobile through links, but this must not cost the receiver.
- **People will reply to texts if they are important** (eg specialists appointment) but will not always have credit to respond, or follow links – suggestion to make text responses "reply paid by sender", as a reply paid envelope would be if sent out with a letter.
- **Pushed alerts should be sent to the phone's "front page"** for those who do not understand texts or how to open texts (or need to be shown by someone how to access them).
- **People dislike viral text marketing**, but trust sources such as government. Set up a No-Call Register to prevent marketing text/calls to mobiles.

6. FINDINGS FROM THE LITERATURE SCAN

a) A FRAMEWORK TO MOVE FROM SOLUTIONS TO RECOMMENDATIONS

A framework derived from **innovation diffusion theory** helps consider how to apply solutions to increase the uptake of internet on mobile phones. This theory posits 5 stages of innovation adoption: knowledge, persuasion, decision, implementation, and confirmation (see Rogers 1964). An individual can reject an innovation at any step, because they can experience both positive and negative consequences related to the innovation.

Research shows that important factors influencing uptake of technology innovations are technical compatibility, technical complexity, and relative advantage (perceived need) (Bradford & Florin 2003; Crum et al 1996). **Technology acceptance models** suggest that awareness needs to be raised of how technologies can be useful to people, as well as ways to make use easy and relevant to their daily life (Davis 1989).

The characteristics of a technology also influence its uptake, including how easily it can be experimented with, so that to increase the use of internet on mobile a key factor is **the ease with which existing free-internet options can be experimented with in a supported environment**. Culture change theories also suggest that individual behaviour is more likely to change if the social environment is supportive – this environment includes **supportive government policies and actions**, such as those which contributed to reducing smoking behaviour and the increased wearing of seatbelts.

Figure 1 over the page provides the overview of an organizing framework for the solutions in this report.

The focus group research suggests that **people go through an ordered set of steps to progress from being a non-user of internet on mobile to a full, ongoing user**. Solutions and recommendations may therefore address issues that move people through all the steps, or may move people from one step to another. Some recommendations, such as those addressing general awareness, cost and trust issues, have the potential to move everyone in the population along the scale to increased use, from whichever step they are currently at, towards becoming an ongoing user. We also need to recognise that people are at different stages of uptake, which will require different, targeted solutions.

CULTURE CHANGE

- Policy environment
- Supportive contexts

- Compatibility of technologies to people's lives
- Behavioural change

IoM NON USER	Knowledge and awareness	Interest & persuasion	Decision making	Trial, engagement or use	Evaluation: reflection on experiences	Ongoing USER or discontinued use
	<ul style="list-style-type: none"> ▪ What is internet on a mobile phone (IoM)? ▪ What's involved in using & benefiting from it? 	<ul style="list-style-type: none"> ▪ Ease of use ▪ Benefits compared: <ul style="list-style-type: none"> -to usual information sources -to internet on PC ▪ Cyber safety ▪ Cost appropriate ▪ Trust e.g. Telcos ▪ Compatible with life circumstances ▪ Appropriate skills ▪ Knowing support is available 	<ul style="list-style-type: none"> ▪ Weighing up options ▪ Becoming informed ▪ Deciding whether to engage in using, or preparing to use IoM ▪ Deciding how to engage e.g. which carrier, which type of plan, which handset, which avenues for support ▪ What content is useful to me 	<ul style="list-style-type: none"> ▪ Participation in pathways to using IoM ▪ Includes learning about & seeking information re IoM ▪ Includes addressing any other barrier e.g. trust, skills 	<ul style="list-style-type: none"> ▪ Weighing up 'is it worth it'? ▪ Understanding benefits vs costs ▪ Were experiences good or bad, empowering or disempowering? ▪ Consideration of whether to engage more or less, or not at all 	<ul style="list-style-type: none"> ▪ Depth and frequency of use
Hardware solutions	<i>-WiFi on lower cost phones would increase accessibility</i>	<i>-Telcos legally obliged to give after sales support</i>			<i>-Retailers helpful with hardware post sale</i>	<i>-Advertise what WiFi is and increase reach e.g. shopping centres</i>
Cost solutions	<i>-Reassurance of being able to quarantine calls from data allowances</i>	<i>-Offer mobile subsidy as alternative to present landline subsidy</i>		<i>-Pushed alerts from independent source re cost options</i>	<i>-Avenues for redress re unfair billing, marketing etc</i>	
Support & skills solutions	<i>- Provide opportunities to raise awareness and teach skills</i>	<i>-Mandatory provision of cyber-safety and ombudsman info at point of sale</i>	<i>-Personalised help at community sites</i>	<i>-Kiosk drop in centres tailor learning for new skills</i>	<i>-Opportunities to share & mentor new skills with internet</i>	<i>-Diffuse success stories for further uptake</i>
Content solutions	<i>-Govt cyber safety campaign for the "average" Australian.</i>	<i>-Govt content as 'lure' whilst offering support to use it</i>		<i>-Real time bus location -Trading Post</i>		<i>-Allow flexibility in contracts e.g. to get nominated free sites</i>

b) SOLUTIONS ELSEWHERE IN THE WORLD

The solutions suggested by the focus groups, along with the framework in which to consider recommendations for action, are further supported by the literature scan which searched for potential solutions elsewhere in the world around mobile internet use, particularly for lower-income and disadvantaged populations. The findings from the literature scan are presented in four sections: i) Infrastructure & Hardware; ii) Skills and supports; iii) Cost-offsetting; iv) Content.

i) INFRASTRUCTURE AND HARDWARE

Cost-comparison: Online there are many regularly updated tools that allow consumers who have internet access to compare the cost and features of current mobile phone plans to help them select plans appropriate to their budget and use, or to “find the cheapest mobile plan”. On its website the DBCDE particularly recommends the Whirlpool online Broadband Plan finder, and the ACMA provides online fact sheets. However, people who are not yet internet users, but who want to find out what contract or prepaid would help them start out with mobile internet, require an independent offline alternative to access this information.

Simplified, larger phones: Some people in both Phase 1 and Phase 2 focus groups said they wished there were a simple low cost phone available, including with larger buttons, and simplified use, both for normal talk and text as well as to support internet use on mobile. In fact, a range of such phones already exist but there appears to be no way for people to become aware of these.

Industry code of ethics and fair trading: Some companies have initiated Good Practice Guides for accessibility to certain groups, or are developing targeted content for low-income groups eg Orange UK (2003).

National government digital inclusion strategies: Governments appear to have four main structures that can support low SES and disadvantaged groups in terms of digital inclusion: 1) an explicit national digital inclusion strategy and related nationally-coordinated population level initiatives; 2) industry regulations for consumer protection; 3) consumer IT-related information support (which should also be available offline); and 4) guidelines for government accessibility. Some national governments already have M-portals.

Some governments have an explicit **National Digital Inclusion Strategy or Digital Inclusion Unit**. These include the **Government of Northern Ireland** which has had a Digital Inclusion Strategy since 2003 (Office of the First Minister, 2003); the **Welsh Assembly Government** which has a Digital Inclusion Unit; the **Brazilian Government** which has a Federal Government Digital Inclusion Committee and has had a Digital Inclusion Public Policy since 2003 (Mori & Asumpcao 2007); and **Hong Kong** which has a Taskforce on Digital Inclusion.

The UK Cabinet Office published its **Digital Strategy, Connecting the UK in 2005** and outlined actions to tackle digital exclusion. These included the Digital Challenge and the Computers for Pupils programme. An internal review of this strategy in 2007 recommended coordinated government leadership to address digital inclusion, which led to the establishment of a **Digital Inclusion Minister** and a **Ministerial Committee** in early 2008, supported by a **Cross-Government Digital Inclusion Team (The Digital Inclusion Taskforce)** (see “Delivering Digital Inclusion - An Action Plan for Consultation”, 2008). The UK also has a **Digital Inclusion Champion** (UK Dept of Communities & Local Government 2008b), **UK Online Days**, and **national social marketing campaigns** to increase the population's motivation and knowledge around IT use. An international comparison report concludes that Australia has little national strategic policymaking around digital inclusion and takes a more bottom-up approach (see “An Analysis of International Digital Strategies: Why develop a digital inclusion strategy and what should be the focus?” UK Dept Communities & Local Govt 2008a).

The Digital Britain Report 2009 (UK Department for Culture, Media & Sport 2009, p39) states: “The Media Literacy Working Group brought together all the relevant Government departments, the BBC, industry, education and Third Sector to develop a central focus, a clear agenda and a fresh and radical new approach, driving Digital Participation in the UK. At the heart of the Group's recommendations was a fresh new approach to coordinating the number of activities already taking place in this area... **It is important that Government provides clear strategic leadership and vision.** To do so, we believe it is now vital to move away from media literacy as a discrete subject and term and to **move towards a National Plan for Digital Participation.**” “Commitment to the earliest release of radio spectrum to support next generation wireless technology will further build the capability of this option for many people (p36); the next generation of mobile phones are developing PC functionality. The mobile industry has shown extraordinary capacity to take complex technology and make it simple, reliable and very low cost. Given time, low cost broadband mobile phones connected to the mobile broadband network have the best long term potential to ensure complete inclusion of all in the UK to the broadband Internet”. “Government can play an important part in creating a compelling online offer through the delivery of public services online. Today, websites such as NHS Choices, DVLA, Directgov and many others are successfully serving the general public online. To maximise the opportunity afforded by broadband ubiquity, Government will need to become genuinely “of the web”, not just “on the web”.

ii) SKILLS & LITERACY SUPPORT

The Canadian national government established national Community Access Programs in 1994, the UK has had a national network of UK Online Centres since 2000, and Wales has a new Communities 2.0 initiative. The Canadian and UK centres have both been evaluated – they are proven to increase PC-internet skills and access, particularly in “deprived areas”. Alongside learning how to use digital technologies, they give help

with setting up an email account, how to better use the Internet etc. The online version also offers an audio option.

The UK's national mobile phone training

The UK Online Centres' MyGuide training now specifically includes “sit down together” **training on how to buy and use a mobile phone, how to send and receive calls and texts, and what other features are on a phone.** Centres were established in 2000 by the former Department for Education and Skills and are now run by the UK Online Centres team with funding from Department for Business, Innovation, and Skills via the Learning and Skills Council as a partnership between Government, Industry, the voluntary sector, and consumer groups to increase access to digital technologies to those who are disadvantaged. Centres are based in voluntary organisations or community settings, those managed by the local authority, those in further or higher education settings and those in public libraries. Funding for MyGuide development is from the UK Department for Children, Schools and Families, and includes a simple introduction to email, the Internet and the wider applications of digital technologies eg online public services (MyGuide 2009).

An independent evaluation shows the UK Online Centres are “meeting the needs of a unique population of users who would be unlikely to go elsewhere in the absence of UK Online Centres... centres *initiate* the process by raising awareness of the benefits of technology and helping them to start their journey” (Cook & Smith 2004). Importantly, the Centres mostly address online literacy stages 1 and 2 (skills improvement and then further online engagement). They also found that **“taking technology out to local, familiar and safe environments was essential to reach new audiences”, with 74% of customers “socially excluded”, and 93% accessing online government services via the centre.**

Linked to the UK Online Centres is an “established **calendar of digital inclusion and skills events” to engage, motivate and support non-users to get online.** UK Online Centres also run a national PR campaign to raise awareness about the benefits of being online. “Our experience of marketing digital to the digitally excluded shows this doesn't need to be an expensive TV advertising campaign to be effective - harnessing local intermediaries and making use of community connections is vital in driving responses and stimulating footfall”.

The Estelle Morris Review of ICT User skills in Britain says its main recommendation is the development of a ‘**Digital Life Skills Entitlement**’ to enable adults without Digital Life Skills to request up to 9 hours to cover a core set of online learning modules, building on the ‘Myguide’ service; approach any learning provider in the scheme to receive support to learn the basic skills they need to get online through a UK online centre, Adult and Community Learning Provider, FE College, Learndirect, or a Unionlearn Centre or other approved provider; and access a single helpline and website for online learning modules (Digital Britain Report 2009).

Canada's Community Access Programs (CAP)

Running since 1994, CAP is the cornerstone of the **Government of Canada's Connecting Canadians Initiative** which provides affordable public access to the Internet in public locations like schools, libraries and community centres, and provides computer support and training so people can develop the skills they need to use it effectively. By March 2002 there were 9,200 sites across Canada. It is especially designed to close the "digital divide" for people who might not have computers or Internet access in their homes or workplaces. 50% of users have no computer/Internet at home. Community organisations appear to apply to join the program, and it encourages "CAP Networks" (eg local library boards to join together for mutual support) (Industry Canada 2009a).

The 2004 Evaluation Report of CAP identified a need for CAP to continue so as to continue providing affordable Internet access, and to address those segments of the population that had still not "bought into" the benefits of the digital world. People use centres for e-mail, learning and training, job searches, accessing government services and information. Users report increased knowledge about, comfort with and use of the Internet and ICT, and even some improvement in their economic situation (e.g., development of job skills, assistance with job search, selling locally produced goods over the Internet). Canada also has "**mobile CAP sites**" which take laptops to people who cannot get to centres (Industry Canada 2004).

The Welsh Government's new Communities 2.0 initiative

"This initiative is to be delivered in partnership with the Wales Cooperative Centre and others, and aims to build on the success of its previous Communities@One by providing community groups, social enterprises and individuals with support to use technology" (Andrews 2009a). **Communities 2.0 will be a more co-ordinated approach to digital inclusion**, working with community groups and voluntary organisations to help them engage with technologies, and helping new and existing social enterprises to engage with ICT by providing training, mentoring and business support (Andrews 2009b).

Other countries

UNITeS is a global volunteer initiative to help bridge the digital divide. It supports volunteers to apply information and communications technologies for development (ICT4D) and **promotes volunteerism** as a fundamental element of successful ICT4D initiatives. (i.e. ICT people help other areas of development by volunteering). <http://www.unites.org/html/unites/unites.htm>. International NGO ICVolunteers runs **Cyber-volunteers** which involves a worldwide network of 10,000 volunteers with skills in computer training, programming and, above all, smart use of mobile phones and computers offering their time, energy and skills for various social projects that use mobile networks and other information technologies (IT) (<http://www.cybervolunteers.info>).

In Bangladesh, the Grameen Phone Company's Community Information Centres provide internet and other communication services in villages. Piloted in 26 centres in 2006, and now expanding to 560 across Bangladesh covering 40,000 people, the Centres work with the Society for Economic and Basic Advancement to select and train entrepreneurs to run the centres. People pay a small fee to access email or web pages, for business and personal purposes, from accessing health and agricultural information to using government services to video conferencing with relatives overseas. Grameenphone also trains entrepreneurs to give people advice on setting up email accounts and make best use of the Internet (Wikipedia 2009).

Australia

Unlike Canada, England and Wales, **Australia appears to have no national ICT-learning programs to increase digital skills across the population or in socioeconomically deprived areas or groups, and no government initiatives to help migrate all citizens from being non-users to users of internet on mobile.** Australia does have several programs targeted at some specific groups (eg seniors, children, Indigenous, regional) but nothing appears to be targeted at lower SES populations in general.

The ACCC (Australian Competition & Consumer Commission) has an online section "Learn about mobile phones, landlines and internet services" and subsections eg on "How to make an informed choice between internet service providers", "Find out more about mobile phone contracts, shopping on your mobile, what to do if you have problems with your handset, 3G, premium content and more". Also: "making a complaint" and "You can also contact our Infocentre or the office of fair trading in your state or territory if you are unsure of your options". **However, people in the Adelaide focus groups were unaware that this information exists and most would require it to be available offline, at least to get started.**

Brisbane's West End Community ICT project (Partridge, McAllister & Hallam 2007) is an evaluated 10-month project of community-based community-directed **ICT training**. It found that ICT training does empower and change people's lives, that ICT training for community groups should be provided via **specialised learning environments** where group members can learn and grow at their own pace and style, that ICT training with only a small number of community members can still have considerable impact on the larger community group through shared narratives and support by the training participants with the other community members.

The ACMA's Cybersafety Contact Centre website provides information including how to use a mobile phone safely. **However, the layout suggests this is directed only at teenagers.** Focus groups were keen for this to be provided in a style for the "average adult Australian" and also as a free offline alternative.

The Australian Bureau of Statistics' 2011 Census will again ask for Dwelling internet connection, but **mobile phone internet access can be included only as part of the "Other" response.** It would be useful to participate in the community consultations for the 2016 Census which will be held by the Australian Bureau of

Statistics (usually a year or two after completion of the previous Census) in order to discuss the possibility of adding a question on **Person internet connection which includes a specific measure of internet access on a mobile phone** (which is usually person- rather than dwelling-specific).

iii) COST OFF-SETTING

Free credits or rewards are being increasingly offered by private companies and public institutions. For example, with **digital coupons** customers can save money by printing coupons from websites or e-mail or get them sent to their mobile phone as a promotion code or image (Skidmore 2009). Phone time can be offered as a shopping reward, with US supermarket chain Kroger teaming up with its wireless phone marketing partner, i-wireless LLC, so customers using the Supermarket's branded credit card **earn free mobile phone minutes** over a network on i-wireless phones sold at the grocery stores - shoppers can earn 30 minutes per \$100 spent, with 20 free minutes for every \$100 spent a month. Company officials and wireless analysts say those costs would be the lowest in the industry, which has been lowering prices and adding features to draw new customers (<http://www.wirelessguide.org/2009/090603.php>).

Free credit incentives are also being used to reward health compliance. China is to test a new treatment protocol for tuberculosis by offering free mobile phone credits to sufferers who send text messages to health care centres with a unique code proving they have taken their drugs. (If pills are taken then a home urine test reveals a code to be SMS-d to the health service) (Foster 2009).

Prepaid minutes are also offered in the USA for good behaviour at school. 2,500 New York City public school students received an exemption from the city's overall ban on mobile phones and received a free Samsung flip-phone. They could earn prepaid minutes for good behavior and high test scores, and teachers could send them text messages, reminding them of deadlines. The project was later abandoned for lack of money (Richtel & Stone 2009).

Free access via Wi-Fi Hotspots

Those who have a Wi-Fi enabled phone (usually the more expensive phones) can take advantage of further cost savings by accessing the internet at a Free Wi-Fi Hotspot. An Adelaide bus trial will allow internet users on phones or laptops to tap into the Podmo mobile entertainment network via both regular Wi-Fi and Bluetooth which 90% of mobile devices have – “to bring some level of connectivity and entertainment to a wider range of commuters” (Digital Media 2009).

Some Adelaide libraries already provide free Wireless access but may require people to go into the library and register to use it. However, lower income groups are less likely to be library users and many lower income users currently do not have a Wi-Fi enabled phone.

Internode is providing free Wi-Fi hotspots at local cafes in Adelaide, while free Wi-Fi is available at a range of other locations including SA Government sites such as the Women's & Children's hospital, the Adelaide Aquatic Centre, Modbury Hospital etc. Australian McDonalds have Free Wi-Fi at 92% of their locations (Computerworld 2009) and some municipal broadband projects (ie Wi-Fi cities) exist in the USA, **but researchers question whether these are accessible to the socially and economically disadvantaged** (Gangadharan 2008; Karpowitz, Raphael & Hammond, 2007).

Low-cost access to mobile data and voice

In Australia Woolworths has teamed with Optus prepaid for budget-conscious and budget-limited adults to provide a 'no-frills' mobile service (Braue 2009). Swedish Retail Store Ikea offers Pay as You Go Phones in Britain (August 2009) to the 1.4 million who belong to their customer loyalty program. Prices were to be 25% lower than competitors, with a flat rate (Brignall 2008). The LifeLines India initiative has been developed by OneWorld Asia with British Telecom and Cisco. Farmers pay a small fee of five rupees (US\$0.12) to access FAQ information about agriculture and animal husbandry issues by landline or mobile phone, or they can lodge a personal query that is responded to as a voice message. In late 2008 services were apparently used by 100,000 farmers from 2066 villages across India (Lifelines 2009). Question Box is a similar service in India and Uganda, but the phones are provided free to users (Pokharel 2009).

iv) CONTENT

There is some evidence of what content people want to be available now via mobile internet, but there is more information about what is being offered by companies or service providers that could potentially be attractive. However, Wilson (2006) notes that '**content is not king**' so it is important not to assume that content is the major draw-card in pulling people to use data on a mobile.

The little evaluation of what content is attractive on mobile phones or on internet generally shows that a wide range of functional information is wanted - Social Connection, Entertainment/Leisure, Weather, Shopping, Banking, Education, Housing, General Info, Govt Services & Information. **However, low-income users may not want to pay for high data download costs.** On the other hand, industry is offering much content that they either perceive to be attractive (or have conducted market research to establish *is* attractive), which is also very functional. For example, Nokia have developed the Nokia Life Tools mobile phone for the poor in developing countries, and Woolworths/Optus provide low-cost voice-only and voice+data options in Australia. Audio information on mobile phones is also provided for those with low literacy in developing countries or on the internet. Free credits or incentive systems are being used and may make some content more attractive. Governments are also using SMS Alert Pushes for particular content (especially safety and health), and now setting up Mobile Portals (see Worldbank for mGovernment developments).

SMS ALERT PUSHES (especially by Government for safety, disaster, health)

The UK's Beat the Bugs program is the nation's first ever campaign to limit head lice in a local school by pioneering an SMS 'outbreak alert' system. An evaluation showed that 77% parents support Outbreak Alert Text Messages (ResponseSource.com 2009). The **US Government** is considering using SMS alerts for natural disasters and terrorist attacks (McCullough 2005), and the Bangladeshi Government plans to send non-inbox Flood and Cyclone Alerts that automatically flash on mobile screens (Textually.Org 2009). The FrontlineSMS:Medic website asserts that 'Patients now receive SMS reminders to take their medicine, saving time and money travelling to local clinics (Textually.org 2009). Young people living in the slums of Nairobi receive texts alerting them to job opportunities in the city (Kiwanja 2009). Frontline SMS:Medic is a free text message software aimed at charities and NGOs. A pilot project trained community health workers to send text messages to hospital staff to get their assistance

Industry seems to also be designing content that supplies functional knowledge or opportunities for advancement (business, education) or money savings.

- **Nokia Life Tools** content-driven mobile setups for the poor in developing countries (presumably provide functional knowledge) - low cost, locally targeted content on mobile phones for developing world - 4 content options offered - Agriculture, Education, Entertainment, Alerts (Nokia 2008). "Life Tools has easy interface to Reuters Market Light, which delivers information on crop prices and such over the SMS network, as well as applications including exam revision guides and cricket scores, all on the most basic of handsets". Trialed in India, farmers pay 60 rupees a month for the service, which is delivered in a range of languages. (http://www.theregister.co.uk/2009/04/08/nokia_life_tools/).
- **KTF (Korea's second-largest wireless operator)** offers **educational content** to help students study on their mobile phones for the Test of English as a Foreign Language exams - the most common English ability test in Korea with about 1.9 million taking test every year (Asian Life).
- **Grameen Bank Village Mobile Phone Program** - women take out small loan from Grameen Bank to start a business providing a mobile phone service to their neighbours in rural areas of Bangladesh (wikipedia.org/wiki/). **Grameen Bank + Bill Melinda Gates Foundation + Columbia University Public Health** are creating a **network of Community Knowledge Workers using cell phones** to disseminate critical agricultural data to farmers to help improve crop yields and find markets for produce - poor people already have the phone or buy one with a microfinance loan, but the organisations say they need to work out how to train people in culturally appropriate ways to move from current methods to phone methods (Lesser 2009).
- **Google Sub-Saharan Africa**, orchestrated through Grameen Foundation (Johnson 2009) "saw the tremendous potential in developing innovative approaches for **providing information through mobile services that can benefit the poor**" (Google's SMS technology). Started in Uganda, AppLab allows users to send a text message seeking information on a number of subjects such as health advice or weather forecasts for farmers. Mobile is also a banking tool in remote areas - phone credits are used as cash replacement, and ability to send/receive credit by phone is

a flexible replacement for traditional banking eg in Uganda, where just one in 10 citizens has their own bank account. **Blockbuster movies** will soon be available on Motorola mobile phones (Vanacore 2009). **Facebook Mobile** has been developed (with over 65 million active users) (Cellular News 2009). **FreedomFone in Zimbabwe** provides **news via audio to mobile phones** (voice access addresses literacy issues). They intend to add an alternative where people can either call or text for the latest news (IdeaLab 2009). **MobilED in South African schools** delivers **Wikipedia via mobile phones**. Users could originally text a query and be called back by a speech synthesizer reading the relevant text, which ensured comprehension - the voice services was eventually abandoned as too expensive to run on South African telephone charges, and replaced by a purely data-based service (IdeaLab 2009). **IBM's Spoken Web (the World Wide Telecom Web)** is working on creating an all-audio version of the web via voice-sites linked to specific phone numbers (instead of a URL). Trialled in VoiKiosks with NGO information.

Government Wireless Portals

Canada's Government Wireless Portal (2009) provides border wait times, a currency converter, economic indicators (population, unemployment rate etc), member of parliament contact information, passport offices, national parks, a list of 1800 toll free numbers, and weather. Canada has some of the highest cell phone costs in the world and Telecommunities Canada (2008) was calling for a National Digital Inclusion Strategy only last year.

The **French Government** was building a mobile portal for mid-2009, to bring together applications and services of general interest freely available on mobile phones connected to the internet (Baritault 2009; Murphy 2009). **Bahrain** has E-government services available for mobile phones_ (2009 - <http://www.futuregov.net/articles/2009/may/26/bahrain-e-government-services-now-mobiles/>).

7. ADDITIONAL RESOURCES

a) **The Australian Bureau of Statistics** produces regular publications which include information on Household Access and Use of Computer and Internet. A question has also been included in past 5-yearly Censuses which seek face-to-face input from every individual and household in Australia (ie does not rely on computer or landline contact). Customised Census data is available and can be provided to show how computer/internet use is associated with other questions asked on the census form (eg income, gender, area of residence, disability etc). Link: www.abs.gov.au

The 2011 Census questions ask for Dwelling internet connection, and provides for mobile phone internet access to be included only as part of the "Other" response. In light of the research findings in this report, it would be useful to participate in the community consultations for the 2016 Census which will be held by the Australian Bureau of Statistics (usually a year or two after completion of the previous Census) in order to discuss the possibility of adding a question on Person internet connection which includes a specific measure of internet access on a mobile phone (which is more likely person- than dwelling-specific).

b) **The Public Health Information Development Unit at the University of Adelaide** - has developed interactive mapping and tabulation of 2006 Census data showing Broadband access and use in South Australia. They are now developing the same maps for all other states/territories. Link: www.publichealth.gov.au

c) **Australian Communications and Media Authority (ACMA)** - conducts online and landline surveys only (ie not face-to-face so misses people who are mobile-phone only and who do not use the internet). Tends to look only at users (rather than non-users).

d) **In the USA, the Pew Internet & American Life Project.** One of seven projects making up the Pew Research Center, a nonpartisan, nonprofit "fact tank" that provides information on the issues, attitudes and trends shaping America and the world. The Project produces reports exploring the impact of the internet on families, communities, work and home, daily life, education, health care, and civic and political life. The Project's reports are based on nationwide random phone surveys, online surveys, and qualitative research. This data collection is supplemented with research from government agencies, technology firms, academia, and other expert venues. The Project releases 15-20 pieces of research a year. Link: <http://www.pewinternet.org/>

e) ***Social Capital and the Digital Divide: implications for online health information*** (2006), Iolande Principe, Unpublished PhD Thesis, University of South Australia, School of Social Work & Social Policy.

f) ***The Mobile Web - Overview and Guide for Libraries***
http://eprints.rclis.org/15024/1/mobile_web_ltr.pdf

8. REFERENCES & BIBLIOGRAPHY

- Andrews L (2009a), 'Aiding digital inclusion key to tackling social and economic exclusion Deputy Minister tells Eisteddfod goers', Media Release, Welsh Assembly Government.
<http://cymru.gov.uk/news/latest/090804digitalinclusion/;jsessionid=mvvfKhcPk1hTmvdcthny6p28cV2sJnDnTHLTg5LVjZGRXnK3KjFI-600962393?lang=en&ts=1> Accessed 14 September 2009.
- Andrews L (2009b), 'Consortium awarded contract to deliver project to bridge the digital divide', Media Release, Welsh Assembly Government
<http://cymru.gov.uk/news/topic/housing/2009/090319digital/;jsessionid=94CyKtsQGSyIp231d5Ng35PvFnM0XnThh14kWp515n5Qb42CnFTn!-327878142?lang=en&ts=1> Accessed 14 September 2009.
- Asian Life (2007), 'Cell Phones Boost English Studies',
<http://www.asianlife.com/magazine/view/articles/id/645838561> Accessed 11 September 2009.
- Attewell J (2005). *Mobile technologies and learning: A technology update and m-learning project summary*. Learning and Skills Development Agency, London.<http://www.m-learning.org/knowledge-centre/m-learning-research.htm> Accessed 11 September 2009.
- Australian Bureau of Statistics (2002). *Adelaide: A Social Atlas, 2001 Census of Population & Housing*. Catalogue number 2030.4. Commonwealth of Australia, Canberra
- Australian Communications & Media Authority (2009). *Convergence and Communications: Report 1: Australian household consumers' take-up and use of voice communications services*.
www.acma.gov.au Accessed 1 September 2009.
- Baritault A (2009), 'France launches mobile portal for senior citizens', 27 April
<http://www.muniwireless.com/2009/04/27/france-mobile-portal-for-seniors/> Accessed 17 September 2009.
- Bradford M, Florin J (2003). Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning systems. *International Journal of Accounting Information Systems*, 4(3), 205-225.
- Braue (2009), 'Woolworths, the fresh prepaid mobile people', (4 August 2009). CNet Australia.
<http://www.cnet.com.au/woolworths-the-fresh-prepaid-mobile-people-339297734.htm>
- Brignall M (2008), 'Ikea launches cut-rate pay-as-you-go service: rivals in disarray as furniture company introduces sim card-only package', The Guardian (UK) 9 August 2008.
<http://www.guardian.co.uk/money/2008/aug/09/internetphonesbroadband.consumeraffairs>
Accessed 14 September 2009.
- Bure C (2005), 'Digital Inclusion Without Social Inclusion: The consumption of information and communication technologies (ICTs) within homeless subculture in Scotland', *The Journal of Community Informatics*, 1(2): 116-133. <http://ci-journal.net/index.php/ciej/article/view/251/213>
Accessed 14 September 2009.
- Cellphone News (2009), 'Training Centre DVDs for Blackberry Smartphones Now Available from Simple Learning', 29 August.
http://www.cellphonenews2.com/stories/516074/Training_Center_DVDs_for_BlackBerry_Smartphones_Now_Available_from_Made_Simple_Learning.html. Accessed 17 September 2009.
- Cellular News (2009). Facebook Mobile Passes 65 Million Active Users (7 September).
<http://www.cellular-news.com/story/39478.php> Accessed 11 September 2009.
- Centers for Disease Control & Prevention (2009). *Wireless Substitution: Early Release of Estimates From the National Health Interview Survey, July-December 2008*. US Government
<http://www.cdc.gov/nchs/data/nhis/earlyrelease/wireless200905.htm>
- Choice Magazine (2008), 'Next G phones: review & compare to find the best mobile',
<http://search.choice.com.au/consumer/Choice%20Computer%20Magazine>.
- Computerworld.com.au (2009), 'Maccas the hot spot for 3G users: chains report surge in free wireless uptake', http://www.computerworld.com.au/article/303190/maccas_hot_spot_3g_users Accessed 17 September 2009.
- Cook J, Smith M (2004), 'Beyond formal learning: Informal community eLearning', *Computers & Education*, 43: 35-47. Accessed at www.sciencedirect.com 14 September 2009.
- Crum, M. R., Premkumar, G., & Ramamurthy, K. (1996). An assessment of motor carrier adoption, use, and satisfaction with EDI. *Transportation Journal*, 35(4), 44-57.
- Davis, FD (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.

- Department of the Digital Broadband Communications and the Digital Economy (2009). *Australia's Digital Economy: Future Directions*. Commonwealth of Australia.
www.dbcde.gov.au/digital_economy/final_report Accessed 7 September 2009.
- Department of Immigration & Citizenship [Australia] (2009). Homepage on the Internet - Our Information & Services - Contacting Us. <http://www.immi.gov.au/about/charters/client-services-charter/3.0.htm#> Accessed 17 September 2009.
- Digital Media (2009), 'Adelaide commuters get free wi-fi', 27 Aug,
<http://www.digital-media.net.au/article/adelaide-commuters-get-free-wi-fi/495944.aspx> Accessed 7 September 2009
- Fitzpatrick M (2008), 'Korea is totally wired', *Sydney Morning Herald*, 15 May,
<http://www.smh.com.au/news/web/korea-is-totally-wired/2008/05/13/1210444445336.html>
 Accessed 11 September 2009.
- Flicker S, Maley O, Ridgley A, Biscope S, Lombardo C, Skinner H (2008), 'e-PAR: Using technology and participatory action research to engage youth in health promotion', *Action Research*, 6(3): 285–303. Accessed at www.sagepub.com on 9 September 2009.
- Foster P (2009), 'China offers free mobile phone credit in the battle to fight tuberculosis' (1 April).
<http://www.telegraph.co.uk/news/worldnews/asia/china/5088848/China-offers-free-mobile-phone-credit-in-the-battle-to-fight-tuberculosis.html> Accessed 11 September 2009.
- Gangadharan S P (2008), 'What's meant by digital inclusion? An interrogation of municipal broadband policy in the city of San Francisco', Paper presented at the 58th Annual International Communication Association, Montreal, Canada, 25 May.
http://www.allacademic.com/meta/p_mla_apa_research_citation/2/3/4/8/2/p234823_index.html
- Glover J, Hetzel D, Glover L, Tennant S & Page A (2006). *A Social Health Atlas of South Australia*. 3rd edition. Public Health Information Development Unit, The University of Adelaide, Adelaide.
- Government of Canada (2009). Government of Canada Wireless Portal on the Internet.
<http://canada.gc.ca/mobile/wireless-eng.html> Accessed 14 September 2009.
- House of Commons (2009), 'Digital Inclusion in Wales', Welsh Affairs Committee.
<http://www.publications.parliament.uk/pa/cm200809/cmselect/cmwelaf/305/30511.htm>. Accessed 14 September 2009.
- Industry Canada (2004) 'Evaluation Study of the Community Access Program (CAP), Audit & Evaluation Branch, <http://www.ic.gc.ca/eic/site/ae-ve.nsf/eng/01420.html>
- Industry Canada (2009). Community Access Program - homepage on the Internet.
<http://www.ic.gc.ca/eic/site/cap-pac.nsf/eng/home>
- International Development Research Centre - website http://www.idrc.ca/es/ev-136691-201-1-DO_TOPIC.html
- Johnson B (2009), 'Google joins push to send Ugandans vital information through their mobiles', *The Guardian (UK)*, <http://www.guardian.co.uk/technology/2009/jun/29/google-launches-applab-in-uganda> Accessed 11 September 2009.
- Juniper Research (2009), 'Low Cost Handsets Markets, Opportunities & Forecasts 2009-2014
<http://www.juniperresearch.com/shop/viewreport.php?id=183>
- Karpowitz C, Raphael C, Hammond A (2007), 'Participatory Democracy and Municipal Broadband Policy: A Silicon Valley Consensus Conference', *Paper presented at the annual meeting of the Midwest Political Science Association, Palmer House Hotel, Chicago, IL, Apr 12, 2007.*
http://www.allacademic.com/meta/p199372_index.html
- Kiwanja Mobile Database http://www.kiwanja.net/database/kiwanja_browse.php Accessed 11 September 2009.
- Kleine, D & Unwin T (2009), 'Technological Revolution, Evolution and New Dependencies: what's new about ict4d?', *Third World Quarterly*, 30:5,1045 — 1067.
<http://dx.doi.org/10.1080/01436590902959339>
- Lesser H (2009), 'Cell phone projects to use technology to boost health care, food production in Africa', *VOANews.com* (5 March), <http://www.voanews.com/english/Africa/2009-03-09-voa5.cfm>. Accessed 14 September 2009
- Lifelines (2009), 'Lifelines Agriculture', <http://lifelines-india.net/lifelines/agrisubpage/> Accessed 11 September 2009.
- McCullough LK (2005), 'Emergency Alerts: Coming to Your Cell Phone? Feds consider a system to deliver warnings to the public via text messages', *PC World*,

- http://www.pcworld.com/article/122025/emergency_alerts_coming_to_your_cell_phone.html#commentsjump. Accessed 11 September 2009.
- Mobile Choice Magazine http://www.isubscribe.co.uk/title_info.cfm?prodID=11170&catID=26
- Mori CK & Asumpcao RO (2007), 'Brazilian Digital Inclusion Public Policy: Achievements & Challenges', *The Journal of Community Informatics*, 3(3). Special issue: Community Informatics in Latin America and the Caribbean. <http://www.ci-journal.net/index.php/ciej/article/viewArticle/424/339> Accessed 14 September 2009.
- Murphy M (2009), 'French government building a mobile portal', *Mobile Industry Review*, 24 July. http://www.mobileindustryreview.com/2009/07/french_government_building_a_mobile_portal.html
- MyGuide (2009). www.myguide.gov.uk Accessed 11 September 2009.
- Nokia (2008), Media Release: 'Inform, Involve, Empower - Nokia's service mantra for emerging markets with Nokia Life Tools', 4 November. <http://www.nokia.com/press/press-releases/showpressrelease?newsid=1266168>. Accessed 11 September 2008.
- Office of the First Minister (2003). *A Digital Inclusion Strategy for Northern Ireland*. Government of Northern Ireland. <http://brise.ernact.net/TW/TWDocs/2/Digital%20Inclusion%20Strategy%20NI.pdf> Accessed 14 September 2009.
- Orange UK (2003). *Mobile Industry Good Practice Guide for Service Delivery for Disabled and Elderly Customers in the UK*. Available at: <http://www1.orange.co.uk/codesofpractice/>
- Organisation for Economic Cooperation & Development (2009). *OECD Communications Outlook 2009*. <http://browse.oecdbookshop.org/oecd/pdfs/browseit/9309031E.PDF> Accessed 11 September 2009.
- Partridge H, McAllister H & Hallam G (2007), 'Community ICT projects: do they really work? Reflections from the West End Connect project one year on', *Communities and Action: Prato CIRN Conference*, <http://www.ccnr.net/prato2007/archive/partridgehallam.pdf> Accessed 14 September 2009.
- Pew Internet & American Life (2009). *Wireless Internet Use*. <http://www.pewinternet.org/~media/Files/Reports/2009/Wireless-Internet-Use.pdf> Accessed 11 September 2009.
- Pokharel P (2009), 'How Talking into a Mobile Phone Can Help Change Lives' <http://www.pbs.org/idealab/2009/09/how-talking-into-a-mobile-phone-can-help-change-lives243.html> Accessed 9 September 2009.
- ResponseSource.com (2009), 'Txts gv parnts pwr 2 fite hed lice', http://www.responsesource.com/releases/rel_display.php?relid=38119 Accessed 11 September 2009.
- Reuters (2009). Report 1 Sept. Available at: uk.reuters.com/article/idUKTRE57U1KH20090831
- Richtel M & Stone B (2009), 'Industry Makes Pitch That Smartphones Belong in Classroom', *New York Times*, <http://www.nytimes.com/2009/02/16/technology/16phone.html> Accessed 14 September 2009.
- Rogers, E M (1964). *Diffusion of Innovations*. Glencoe: Free Press.
- Rubinoff, D (2005). Life histories in cyberspace: life writing as a development tool for rural women *Geoforum*, 36(1): 59-75. Science Direct <http://www.sciencedirect.com/science> Accessed 10 Sept 2009.
- Schuppan, T (2009). E-Government in developing countries: Experiences from sub-Saharan Africa. *Government Information Quarterly*, 26, pp. 118–127. Accessed 10 Sept 2009 at Science Direct <http://www.sciencedirect.com/science>
- Schwittay A (2008), 'A Living Lab: Corporate Delivery of ICTs in Rural India'. *Science Technology and Society*, 13 (2):175-209. Accessed at www.sagepub.com 10 Sept 2009.
- Silverphone UK (2009). Available at <http://www.silverphone.co.uk/shop/index.html> Cited 3 September 2009.
- Skidmore S (2009), 'New generation of coupons means users clip less' (27 August), Cellular News. <http://www.cellular-news.com/story/39344.php> Accessed 11 September 2009.
- Telecommunities Canada (2008). *Towards a National Digital Inclusion Strategy*. http://www.tc.ca/digital_inc3.pdf
- Telstra <http://www.telstra.com.au/mobile/prepaid/latestoffers/>
- Textually.Org (2005), 'In Mobile Phones, Older Users Say, More Is Less', available at: <http://www.textually.org/textually/archives/2005/08/009545.htm> Accessed 3 September 2009

- Textually.Org (2009), 'Disaster-prone Bangladesh trials cell phone alerts', June 24, 2009.
<http://www.textually.org/textually/archives/2009/06/023931.htm>. Accessed 11 September 2009.
- Troutman, M and Timpson, S (2008) Effective Optimization of Web Sites for Mobile Access: The Transition from eCommerce to mCommerce. *Journal of Interactive Advertising*, Vol 9(1).
<http://www.jiad.org/article111> [Accessed 6 Sept 2009]
- Tung L (2009), 'Woollies: Customers don't want mobile data', (3 Aug 2009). ZNet Australia.
<http://www.zdnet.com.au/news/communications/soa/Woolies-Customers-don-t-want-mobile-data/0,130061791,339297704,00.htm> Accessed 11 September 2009.
- UK Department for Culture, Media and Sport, And Department for Business, Innovation and Skills (2009). *Digital Britain*. UK Government.
<http://www.culture.gov.uk/images/publications/digitalbritain-finalreport-jun09.pdf>. Accessed 9 Sept 2009.
- UK Department of Communities & Local Government (2008a). *An Analysis of International Digital Strategies: Why develop a digital inclusion strategy and what should be the focus? Research Report*. <http://www.communities.gov.uk/documents/communities/pdf/1000425.pdf> Accessed 17 September 2009.
- UK Department of Communities & Local Government (2008b). *Delivering Digital Inclusion: An Action Plan for Consultation*.
<http://www.communities.gov.uk/publications/communities/deliveringdigitalinclusion> Accessed 14 September 2009.
- UK Online Centres (2009). <http://www.ukonlinecentres.com/corporate/about-uk-online-centres/about-uk-online-centres> and <http://www.ukonlinecentres.com/> See also *commissioned Review of Research on UK Online Centres*
<http://www.ukonlinecentres.com/images/stories/downloads/researchoverview.pdf> Accessed 11 September 2009
- Vanacore A (2009), 'Blockbuster to offer movies on Motorola phones', Cellular News (18 August).
<http://www.cellular-news.com/story/39183.php> Accessed 11 September 2009.
- Wikipedia (2009), GrameenPhone.
http://en.wikipedia.org/wiki/Grameenphone#Other_activities Accessed 14 September 2009.
- Williamson A (2006). *Computers in Homes: Literature Review*. Prepared for the 2020 Communications Trust. Wairua Consulting Ltd, Waitakere, NZ.
- Wilson, J (2006), '3G to Web 2.0? Can Mobile Telephony Become an Architecture of Participation?' *Convergence*, 12: 229. www.sagepub.com Accessed 9 Sept 2009.
- WNN WiFi Net News (2009), 'McDonald's Free Service in Australia Fills Restaurants', 13 May.
http://wifinetnews.com/archives/2009/05/mcdonalds_free_service_in_australia_fills_restaurants.htm Accessed 17 September 2009.
- Worldbank mGovernment Report
<http://web.worldbank.org/WBSITE/EXTERNAL/TOPICS/EXTINFORMATIONANDCOMMUNICATIONS/EXTTECHNOLOGIES/EXTDEVELOPMENT/0,,contentMDK:21534706~menuPK:559467~pagePK:64020865~piPK:51164185~theSitePK:559460,00.html> Accessed 11 September 2009.
- World Health Organisation (2009), Homepage on the Internet. <http://www.who.int/en/>
- Worham J (2009), 'Mobile Internet use shrinks digital divide', *New York Times*, 22 July.
<http://bits.blogs.nytimes.com/2009/07/22/mobile-internet-use-shrinks-digital-divide/?hp>