Investigating the value of providing a census Internet option for small mobile devices

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Contents

1   Purpose of this report

This report presents the results of research undertaken by Statistics New Zealand to build an understanding of ways that New Zealanders access the Internet on small mobile devices.

The research was part of the 2013 Census development. It aimed to investigate the value of developing a census Internet design for small devices such as mobile phones.

Our results came from four focus groups that were held with young people and professional adults. Each group consisted of six to nine people who accessed the Internet on a mobile device. The specific objectives for these focus groups were to explore:

- the range of devices people use to access the Internet
- typical patterns of use
- the design features common to user-friendly mobile sites.
- how likely people were to fill out their census form on small mobile devices.

2   Summary of results and conclusions

Throughout this report, the term 'mobile' includes mobile phones and Internet-enabled MP3 players. It excludes tablet computers and laptops. The term 'mobile Internet' refers specifically to Internet on mobiles.

Results of our research

The results from our focus groups were informative. Participants were using a wide range of different devices to connect to the Internet, including mobiles, tablets, laptops, and desktop computers. The number of devices people owned generally increased with age. Otherwise, our overall findings were consistent across the groups – age made little difference.

How people were using the Internet on mobiles

Mobile phones were used for a wide range of activities, and infrequently used for telephone calls. Texting was the most frequent activity named.

The portability of mobiles made it easier and more convenient for users to connect to the Internet while doing other things.

Users connected to the Internet on mobiles both on the move and at home. However, slow loading speeds meant that mobile Internet could sometimes be frustrating to use when out and about.

Mobile Internet has broad appeal. While younger users access the Internet less frequently than older users, patterns of mobile Internet use do not differ greatly by age – a wide range of websites was accessed by all age groups.

Younger users were more concerned than older users about the costs of accessing the Internet. Older users were likely to be on a payment plan.

The choice to use mobile instead of fixed Internet was often determined by what users were doing and how quickly they needed to do it.

Users typically accessed the Internet on mobiles to obtain information they needed immediately and knew they could get quickly.

The websites users visited most frequently on mobiles were those that were updated or changed regularly, such as social media sites.

Users still preferred to use a bigger screen for some activities. This is because pages load faster on a PC and users can see more detail.

Longer, complex tasks were more likely to be carried out on a PC as participants felt the size of the screen made it easier to use for those things.

What made it easier for people to use the Internet on mobiles

The sites that people found easiest to use on mobiles were those designed specifically for mobile use.

Some of the sites users mentioned as being well designed for mobiles were Stuff, ASB bank, MetService, and Google.

Design features that users named as user-friendly included simple links, easy navigation, minimal content, plain presentation, and simple instructions.

What made it more difficult for people to use the Internet on mobiles

Things that made it difficult to use mobile Internet included both technical and design elements.

Loading times, connection quality, and poor access were technical features that frustrated participants.

The design elements that frustrated participants were those that made it difficult to move around the site, to read information, or to enter information.

Storing and printing information was named as a barrier to using mobile Internet for some activities.

Users spontaneously mentioned that they disliked filling out forms on their mobile.

How people felt about filling out census forms on mobiles

Participants wanted to "Do my census in whichever way is quickest and easiest."

Participants told us they were unlikely to fill out their census forms on a mobile, although some expressed mild curiosity.

Filling out a census form was viewed as a serious task, better done on a PC.

The length of the census form and the amount of keying required for some questions were factors that deterred mobile users.

The large amount of text and large number of response options on the census forms were identified as aspects that would be difficult to format for mobiles.

Most people would not persevere with a bad user experience, so a mobile Internet census option would have to be simple and highly usable.

The things that participants would most like a mobile Internet census form to have included: easy navigation, page-by-page presentation of questions, minimal keying requirements, reduction of content, and a progress bar.

Participants also preferred the idea of a census app over a mobile-optimised website.

Conclusions we drew from our results

We conclude that with the current technology available a mobile Internet census may not have a high take-up. The costs required to develop a mobile Internet option for the 2013 Census may therefore fail to bring substantial benefits.

Looking to the future: a mobile Internet option for the 2018 Census

Findings from this research are consistent with studies overseas, in particular findings indicating that mobile Internet users typically engage in simple, quick tasks on their mobiles.

Overall results suggest that a mobile Internet version of the census would have limited appeal in the current environment. The costs required to develop a mobile Internet option for 2013 Census may therefore fail to bring substantial benefits.

With further advances in technology, however, the mobile Internet experience is likely to improve in the future. Patterns of Internet use are set to change dramatically in the next five years. To prepare for these changes, a 'mobile first' design approach is recommended for the 2018 Census.

3   Background to our research

Mobile technology is changing rapidly. Current predictions suggest that by 2013 mobile phones will overtake PCs as the most common device worldwide for accessing the web. To respond to this trend it was important for us to evaluate potential changes to the pattern of Internet use so that plans for the 2013 Census Internet questionnaire could take those into account. Investigating the demand for a mobile Internet version of the census questionnaire was part of that work.

Potentially, a mobile Internet version of the questionnaire could provide an incentive for young people (known to be early adopters of new technologies) to participate in the census. It may also appeal to hard-to-reach groups, such as young males. However, there is currently very little information available, either nationally or internationally, that relates specifically to the design and use of questionnaires on small-screen devices. To our knowledge, most international statistical offices have only just begun to explore the potential of this mode as a data collection method, and few countries have offered a mobile version of their census forms.

Designing a small-screen version of the census Internet forms brings challenges and risks to usability and data quality. To build an early understanding of those issues, it was important to investigate patterns of mobile Internet use within the New Zealand context, including how people use their mobiles to access the Internet and what they expect to see and do on a mobile site. This research was a basis to begin to understand those patterns and trends, and to identify design features that may increase the usability of a small-screen design.

4   Results

This section presents the details of our focus group results. Please note that the term 'mobile' includes mobile phones and Internet-enabled MP3 players. It excludes tablet computers and laptops. The term 'mobile Internet' refers specifically to Internet on mobiles. For more detail about how we held the groups and who participated, see chapter 7 and appendix 1.

How people are connecting to the Internet

People use a range of different devices to connect to the Internet. Along with their personal mobiles, which they generally carried with them at all times, participants reported access to other devices such as desktops and laptops. Those devices were used in a variety of places, including home, work, or school. Use of the different devices was usually context specific. When they were out and about they might use their phone to check a map or timetable. When they were at home they were more likely to choose a desktop or a laptop to access the Internet.

As people got older the more devices they owned, with one participant reporting he had four different devices for his personal use.

> "I have an iPhone, a tablet, laptop, and computer. I'm pretty much always connected to the Internet." (Male, 23–29 years.)

The 18–22-year-olds were most likely to report using their mobiles as their default for everything they needed to do on the Internet.

> "If my mobile is closer than the computer, I will use my phone." (Male, 18–22 years.)

Focus group participants owned a variety of personal mobiles, with a fairly even split between iOS and Android operating systems. Some participants had the most up-to-date technology available; others had more 'basic' devices.

Only a minority of participants, particularly Apple users, reported upgrading their phones for the sole purpose of wanting the latest technology.

Most only replaced their phones when they had to, such as when their phones were broken or lost. However, participants did report that they would usually take the opportunity to upgrade their phones when they were replacing them.

> "Now I've got an Android – got it because better and newer technology than old phone." (Male, 18–22 years.)

How people use their mobile phones

Participants at our focus groups said they used their mobile phones to do many things other than phone calls. For example, they told us they used their phone cameras to take photos, played games on their phone, checked the time, and used the calendar, including using features such as setting alarms and reminders. Some participants also mentioned watching videos, listening to music, and voice recording, but these were used less often. New apps were popular with participants who had the newest phones, as they allowed them to do new and novel things, such as identify the names of songs on the radio, or track the path of the sun, for example.

When they were asked to make a list, some participants with the newest phones named as many as 28 things they used their mobile phone for.

> "I've listed 28 things. It gets used for an awful lot of stuff." (Male, 30+ years.)

> "It's not really a phone anymore. It's about five or six things that I used to have. It's just one thing now." (Male, 23–29 years.)

Our discussions with all four groups confirmed that mobile phones had changed communication patterns among all age groups, not just among young people. For example, all four groups said that texting was now the main and preferred way that they used their phone to communicate with others.

One or two people in all of the discussion groups said that they still preferred to phone their friends and speak to them directly. As one of those people explained:

> "I'd rather call than text. It's just annoying, and the buttons are too small." (Male, 30+ years.)

However, most other participants made phone calls infrequently.

> "It's relatively rare that I would actually use it as a phone, because there are so many other ways to communicate that the phone is only a fallback." (Male, 30+ years.)

Our discussions confirmed that communication patterns had changed among all age groups. Texting was the method used to communicate most frequently when using a mobile phone, but participants also mentioned newer communication channels such as video calling via Skype and messaging via social media websites.

How often and for how long people connect to mobile Internet

The amount of time spent online on a mobile was fairly similar across all the groups. However, there were some differences in frequency of accessing the Internet. Participants in the 15–17-year age group reported the least frequent use – some only accessing Internet with their mobile on a weekly or even monthly basis. Frequency of Internet use increased as people got older.

While the majority of participants reported spending a maximum of 5–10 minutes at a time on the Internet, it was common for participants to be connecting briefly for 'short bursts' fairly regularly throughout the day and night.

> "I have an iPhone that I use constantly from first thing in the morning. iPhones are so easy to use – you just use it quite regularly." (Female, 23–29 years.)

One participant noted that length of time spent on the Internet varied depending on his frame of mind.

> "Sometimes just a quick check of email, sometimes I might be bored out of my skull at a lecture and spend the whole hour browsing." (Male, 18–22 years.)

One person estimated they connected to the Internet 30–40 times a day. It was noted that the way the technology works, ie the person is notified if they get an email or an alert, means that people are frequently connecting or being prompted to connect to the Internet.

> "Always get alerts so you always end up on the Internet." (Female, 23–29 years.)

Cost of Internet access was not a major consideration when participants were accessing Internet, although younger participants (15–17 years) reported more that cost did affect what they did and when they used their phones. Many of the participants reported they were on plans with a data allocation and that this was in usual circumstances more than

enough for their usage needs. The majority of participants said they generally accessed free Wi-Fi when out and about.

Why people use mobile Internet

It was clear from our focus group discussions that accessing the Internet had become a central part of many of our participants' lives and a regular feature of their day.

Mobile Internet use wasn't restricted to occasions when our participants were out and about. All of our participants felt that the portability of mobiles made it easier and more convenient for them to connect to the Internet. This meant that they were now able to look up things on the Internet while doing other things, such as watching television, waiting for appointments, or completing other tasks. For example, users often found it more convenient to connect to the Internet on a mobile when they were at home because it was within easy reach. One participant explained:

> "If I want to look at something quicker or bigger, then I will use the iMac. But I usually can't be bothered getting off the couch to get to one of those." (Female, 23–29 years.)

However, others were less enthusiastic. As one participant explained:

> "The only reason I jump onto the Internet on my phone is if I'm bored. If I'm sitting in a car and waiting for something, or out, getting bored, that's the only time I jump on there. But otherwise I would rather be on the computer." (Male, 30+ years.)

Frequently the choice to use mobile Internet was determined by what the participant was doing and how quickly they needed to do it.

> "Where you are – if I'm out, the big thing is where you are and what you're actually doing." (Male, 15–17 years.)

The websites that participants were most likely to visit shared one common feature. They were the sites on which content was changing or updated regularly. The following quotes illustrate the difference between the sites that users visited most often, compared with those they didn't.

> "The things that are constantly being updated and you want to keep tabs on. Quick things. Updates." (Male, 18–22 years.)

> "How updated the information is. If it's Facebook or email it's constantly changing. Other things are more static – once you've looked at it once, it's not changing." (Female, 23–29 years.)

Other participants told us they used their mobiles to complete quick tasks, or to access information they needed immediately when they were out and about. Map websites were seen as particularly useful in the mobile context, and other sites where they could get information instantly.

> "I only use it for certain things that I can access quickly. Like Stuff, it's quite instant, but going to Internet banking, I'll only use it as a last resort with the phone 'cause it's quite consuming, and it's got to load up each time, the page. But if you want to read the news it's quick. So different things are quicker. So I might do it on a laptop at work, but if I'm out, the easy things I will, the things that are quick to access. So it's all about being quick for me. Unless it's the news, 'cause when you're bored, or when I was waiting here before, I read the news. It's gotta be fast." (Female, 30+ years.)

However, some of our participants said that loading speed was a deterrent to using mobile Internet.

"Because my phone just has to keep loading." (Male, 15–18 years.)

"When it goes down to 2G, that's when it gets annoying. When you're in an area and it drops to 2G – chug, chug – and the moment it goes to 3G, it ramps right up and it's great. But it depends what you're looking for. You might be on a map trying to find out where you're going, so you have to persevere." (Female, 30+ years.)

Sometimes cost was also mentioned as a barrier.

"When I'm not in a major centre. 2degrees have a broadband zone and they've got national data. National data is something like $5 for 10 gig, but broadband is like $20 for a gig, so as long as you stick to Wellington you're fine. But if I went home, 'cause my old man lives in Hastings, then I start using national data and that becomes a whole lot more expensive. So then cost is a factor." (Male, 30+ years.)

What sites people visit on their mobiles

Participants used the Internet on their mobiles to connect to a broad range of websites. Those websites included Facebook, email accounts, Twitter, online banking, games, Google searches, YouTube, weather, maps, timetables, and more. All four of our age groups visited a similar range of sites. For example, Facebook and Twitter featured strongly in all our discussion groups. Online banking and shopping websites such as eBay and Trade Me were also mentioned each time. The Inland Revenue website was mentioned in several of our discussions, but only people in our oldest age group reported visiting real estate websites.

All of the people in our focus groups said they used the Internet to send emails and connect to social media websites. Apart from texting, many said it was the thing they did most often on their mobile.

"First off for me is Twitter, Facebook, and foursquare, so that everyone knows where I'm going and what I'm thinking." (Male, 30+ years.)

"Facebook and Yahoo! most of all, closely followed by Twitter and my Gmail accounts, because I have got a couple." (Male, 23–29 years)

"I like to check my email and be on Facebook every day." (Female, 18–22 years.)

Searching information was another primary activity.

"Googling random things is also quite useful." (Female, 15–17 years.)

There were differences in how often our participants used their mobiles. Predictably, those that used the Internet on their mobile regularly were inclined to visit a wider range of websites than those who used their mobile less often. These frequent users also appeared to be more confident about using the Internet for most things they needed to do and were more likely to have newer phones.

Things people prefer to do on a bigger screen

Participants agreed that some things were easier to do on a big screen than on a small screen. Although participants in our 18–22-year age group tended to use their mobiles as their main means of accessing the Internet, those in our older groups often said that if they had a choice and it was convenient, they would prefer to do most things on a big screen. As these participants explained:

> "I'd probably prefer to do everything [on the big screen] to be honest, but I only use my phone because I don't have my computer when I'm out, so I would prefer to use… if I'm next to my computer I'll use that." (Female, 30+ years.)

One participant said she wouldn't do anything on her mobile that took more than five minutes.

> "If I was doing one specific task that took longer than five minutes, it would be better to be sitting down at a big screen." (Female, 15–17 years.)

Download speed was a big factor that affected participants' preference to use the big screen.

> "Just stuff that takes ages to download. If I do that on my iPhone it just takes way too long." (Female, 23–29 years.)

For example, several participants mentioned a preference to view images on the big screen. Sometimes this was because of the time it took to download, but at other times it was because of the size of the screen for viewing.

> "Anything with images – because my phone doesn't have the loading capacity and it's easier to see and load on a big screen." (Male, 23–29 years.)

> "Because you get to see more detail." (Female, 30+ years.)

Our participants also told us that they were more inclined to do task-based activities on their PC.

> "Anything serious – you wouldn't use your phone for it." (Female, 15–17 years.)

> "For me, it's about having a proper computer. It's more conducive to actually doing work." (Male, 15–17 years.)

> "Actually, flights we always book on the computer. Flights, hotels, anything like that, we would be on the computer, not on the phone." (Female, 30+ years.)

Participants also pointed out that there were some things you just couldn't do on mobile, such as storing or printing information.

> "If you need to keep something, it's better to keep it on the computer. You can't store files on your phone." (Female, 23–29 years.)

> "You can't keep it on your phone – like, keep it and print it off or anything." (Female, 15–17 years.)

Participants were particularly reluctant to fill out forms online and spontaneously mentioned these as something they didn't like to do on their mobiles.

> "Complicated forms that haven't been designed to work with a phone. Trying to book an Interislander ferry, for example, using their normal website on your phone – you can do it but it's not a pleasant experience." (Male, 23–29 years.)

> "Any online form I would use a computer." (Male, 15–17 years.)

Sites that required a lot of reading or entering of text were also mentioned as better to view on a big screen.

> "Anything with lots of reading. I'd rather see it on a big screen." (Female, 30+ years.)

> "Anything that involves a lot of typing." (Male, 30+ years.)

Participants also expressed some security concerns when using their mobiles. For example, one participant said he would use his PC rather than his phone to enter credit card information.

> "Anything that uses credit card information, I wouldn't do on my phone." (Male, 30+ years.)

> "I don't know. Up until a particular release of Android there was a flaw when you could stand close to a phone and use some kind of exploit to get into it to get that personal information out. So no, I don't use credit card on my phone." (Male, 30+ years.)

Features that make an Internet site mobile-friendly

Everyone told us that the Internet sites they found easiest to use on their mobiles were the sites designed specifically for mobile. There was unanimous agreement among all ages that sites with separate mobile versions were the most user-friendly and quick to load.

> "First of all it has to be optimised for mobile, 'cause there are some sites that you will look at and they haven't. And there are bits cut off and it won't fit the screen properly." (Female, 23–29 years.)

> "... otherwise you're like stuck with, like, anyone else's screen, zoomed into something quite small and you have to go into all the different parts of it ..." (Female, 15–17 years.)

Participants commonly mentioned the Stuff website as one that they liked and found easy to use. Other examples of websites that our participants thought were particularly mobile-friendly included the ASB bank website, MetService, and Google. When asked to identify why these sites were friendlier than standard sites, participants told us it was because they had smaller formats designed to fit onto a small screen. Moving around was easier on these sites. For example, information was presented in a simple scroll-down screen, somewhat like a newsfeed, without horizontal scrolling. Participants explained that these sites were simpler; there was less to read and fewer elements.

> "Like Stuff. You just scroll down, read that story and then go to the next story." (Male, 23–29 years.)

> "ASB site is really good. It's all separated into sections, like age, and you can go back to other areas." (Female, 18–22 years.)

> "MetService. You click on the name of the city. White page. Simple. Click. Is it going to rain? Yes. Ok, let's go." (Female, 23–29 years.)

Overall, participants felt the most important aspect was that sites should be easy to use.

> "Ease of use, ease of use. It's a small screen and you have to do that [pinching motion] to make it bigger and then to make it smaller. You don't want to press a button and it actually hits on the one next to it and it sends you off somewhere and then you have to go back, you know?" (Female, 30+ years.)

Participants often mentioned easy navigation and simple links as features that made a site easy to use.

> "Works well with a vertical scroll." (Female, 15–17 years.)

> "Uses links." (Male, 15–17 years.)

Simplified design was also a feature that made mobile sites user-friendly. These designs were typically characterised by minimal content, plain presentation and simple instructions, as the following quotes illustrate.

> "Only displays most important information, important parts of the website." (Female, 15–17 years.)

> "Loads fast, simple layout, works well with a scroll layout." (Female, 18–22 years.)

> "Dumbs it down so it's a lot easier to use." (Male, 15–17 years.)

One participant summarised his preferences this way:

> "Ease of use. It's a small screen and, first of all, it has to be optimised for mobile. Page has to be light in size [small in megabytes], no images. Make it so that regardless of how big or what shape your screen is, everything positions itself as it gets bigger or smaller. Keep the number of elements on the form down. No animations. No flash. List of menu options doesn't work well on the form." (Male, 30+ years.)

Features that make Internet difficult to use on a mobile

Only some of the things that made participants less likely to use Internet on their mobile were specifically about the design of the Internet site. Some things were linked to the technical aspects of mobile use. For example, cost, loading times, access restrictions, connection quality, and limitations associated with their specific mobile were all things that featured in our discussions.

Some highlighted the difference between sites that had been optimised for mobile and those that had not.

> "Loading time is longer for a non-optimised website and some won't load at all." (Male, 23–29 years.)

Some noted that you couldn't access all sites.

> "Some sites you can't get onto." (Female, 15–17 years.)

Problems relating to their Internet provider and the instability of connections were also mentioned by some participants:

> "Vodafone is not very fast." (Male, 18–22 years.)

> "2degrees drops Internet quite a bit." (Male, 30+ years.)

Another participant noted that the batteries didn't last very long on iPhones.

> "Battery life on an iPhone is the worst thing." (Female, 23–29 years.)

> "Probably just the battery life. As soon as you've used the Internet it's halved."

When asked to think about the aspects of design that made mobile sites difficult to use, discussions largely centred on three key qualities: the ability to move around the site, the ability to read information, and the ability to enter information. The design features that most annoyed or frustrated our participants when using their mobile were usually connected to one of these aspects. For example, most participants agreed that sites that were not optimised for mobile were difficult to navigate.

> "[They] are nearly impossible to view, you can't actually see what you're looking at and you need to scroll and move around a lot." (Female, 15–17 years.)

"If it isn't a mobile version you have to turn to landscape as PC design is for landscape." (Female, 23–29 years.)

"Scrolling, and just trying to find out where you are." (Female, 15–17 years.)

Navigation options differed between phone types. For example, one user had a phone with a roller ball mouse. This participant said that touch screen navigation was much easier.

"It's a bit tricky, but I can do it. Like I have got a roller ball thing that I have to use for the mouse, which is good, but I can't be bothered. So if it was a touch screen, it would be sweet as, but because I have to roll the thing and… I just can't be bothered." (Male, 15–17 years.)

However, touch navigation had mixed reviews from our participants and some felt this method could also be difficult at times. As one participant explained:

"You can zoom sure, but for me, I've had some frustration. Like click, back, click, back. Like, five times." (Male, 15–17 years.)

Another pointed out that zoom didn't compensate for poor design:

"Zoom is a good feature, but it would be better if you didn't have to use it." (Male, 30+ years.)

Participants also told us that many Internet sites were complex and difficult to view on their mobiles, making it hard to get around. In the words of one participant:

"A lot of time, if it's like the normal website, you can't actually see properly what it is. It's like, just massive and it's supposed to be on a big screen, and it's gone onto a screen this big. So you just can't see what's happening and you have to move around the whole thing." (Female, 15–17 years.)

Participants felt that sites containing a lot of information were especially difficult to use.

"Stuff that is too complex is frustrating in terms of – firstly loading time is increased and then also ease of use. If there is stuff flying everywhere then it's just kinda… ugh." (Male, 15–17 years.)

The size of text was another factor that was commonly raised by participants.

"The font size. Sometimes font size is too small. Takes you to the wrong place." (Female, 23–29 years.)

"You need a good font size. Sometimes even if it's been designed for mobile, you need to zoom." (Male, 30+ years.)

"Anything tinier than 10 point font [is too small]." (Female, 18–22 years.)

Participants told us that landscape orientation was sometimes helpful for reading or entering text on their mobile.

"Open it to landscape if you're typing or want to scroll – changes quite frequently." (Male, 22–29 years.)

"I'd usually do it sideways for websites that aren't [optimised for mobile]." (Female, 18–22 years.)

Small buttons and the need to double tap were features that our participants said made it difficult for them to use the Internet on their mobiles.

"Buttons need to be big enough to be keyed accurately. Small buttons can be frustrating – click, back, click, back." (Male, 15–17 years.)

"Double tapping can be a pain." (Male, 23–29 years.)

Generally, participants seemed to dislike entering data on their mobiles.

"I find myself reading a lot, but not keying a lot." (Female, 30+ years.)

For example, almost all of our participants disliked having to log in or enter a password when using their mobiles. One participant explained:

"Typing passwords and things like that, like logging into email, trying to double tap and it zooms – big pain." (Female, 23–29 years.)

"Yeah, I think that's why I don't use it for Internet banking, 'cause it's, you know, it's just too, too… it takes time." (Female, 30+ years.)

Another described entering passwords as "repetitive and painful". (Male, 23–29 years.)

When asked how well they were able to use drop-down menus on their mobiles, many of our participants felt that these didn't work as well as they did on a PC.

"Things like, on a normal screen it's quite common to have a list of menu options that drop down. It really doesn't work very well on a mobile phone. You have to go to a different approach." (Male, 23–29 years.)

Participants noted that there were differences in how these lists were displayed on different devices. For example, one user pointed out that on iPhones the drop-down lists were converted to a format specific to that interface. Another participant explained:

"Drop-down lists work on a good phone, but they're a pain, or don't work on older phones." (Male, 15–17 years.)

Most participants agreed that drop-down menus were sometimes difficult to use on a mobile. One participant explained:

"It can be tricky scrolling through lists." (Male, 18–22 years.)

Problems with entering information on a mobile

Participants told us that entering text was an activity that they often disliked doing on their mobiles.

"I find it a bit annoying actually." (Male, 30+ years.)

However, this didn't prevent users from entering text when they needed to.

"It's less easy than typing on a keyboard, but I wouldn't consider it a major obstacle." (Female, 23–29 years.)

Often participants' willingness to enter data on their mobile was influenced by the device they were using:

"I actually find that I text less now that I have an iPhone compared to when I had a Blackberry, which was a lot more agile." (Female, 30+ years.)

Participants mentioned improvements in the methods for entering data on mobiles, including the QWERTY keyboard, but felt that these did not completely solve the problem.

> "You can actually get very quick on this [indicating QWERTY keyboard], same as you can on a normal phone, but sometimes you just want to be able to type." (Male, 30+ years.)

The reasons that participants found it harder to enter text on their mobile was usually because it took longer, required more effort, and was less accurate.

> "Whatever it is, using a keyboard is a lot quicker and a lot more accurate." (Male, 23–29 years.)

Others pointed out that the design of the sites sometimes made it difficult to enter text. For example, entry fields were sometimes out of view.

Context also influenced the amount of keying people did. As some participants explained, if they were using their mobile while out and about, they had other things to do and didn't want to spend a lot of time responding.

> "If I decide I want to answer on the go. But if it was something important, I would wait until I was at home." (Female, 30+ years.)

Others told us they limited the amount they wrote on a mobile. For example, one user told us that if she needed to write more than a couple of words, she would go to her PC.

> "Definitely write less on my phone than I do on my computer." (Female, 23–29 years.)

All our participants, including our youngest group, told us they preferred to use full words when entering text on their mobiles. Most found abbreviated text difficult to read and frustrating. As one participant stated:

> "Yeah, like I hate abbreviations, so everything is like full sentences." (Female, 15–17 years.)

Other participants told us their behaviour had changed over time as newer technologies had emerged.

> "I have gone from abbreviating to full text. I can't always understand it now." (Female, 18–22 years.)

Several participants in the oldest age group told us that it was more likely to be their elderly parents who used abbreviated text language.

> "I do hate it when you text and people don't spell out the word, like 'u' for 'you'. And my Mum does it – I tell you it drives me nuts." (Female, 30+ years.)

Participants commonly pointed out that predictive text and autofill had a tendency to correct words anyway and this made it difficult to use abbreviations.

> "I write in full words, because it's easier, and my phone wouldn't actually let me because if I tried to write one word it would correct it to what it thinks it should be. So if I was to try to write in slang or whatever, then it wouldn't accept it." (Male, 15–17 years.)

How likely people are to fill out the census on a mobile

There was good general awareness of the census across the four groups. Although, it wasn't surprising that most of the younger participants could not recall ever having filled in a census form themselves.

> "I think my mum must have filled it out for me." (Female, 15–17 years.)

Of all the participants, only one (in the 30 years and over age group) had filled out the 2006 Census online, and only one other participant was aware that there had been an Internet option in 2006.

When asked if they would do an Internet census on their mobile, the immediate and unanimous response from all participants from all groups was 'No'.

A few of the participants did indicate an interest in seeing what census might look like on a mobile. One participant (in the 23–29-year age group) noted that if there was a tangible benefit, such as census results coming out quicker, that could encourage people to complete the census on a mobile.

With further thought, a small number of participants suggested that they might do the census on their mobiles, but only if the circumstances were right or as a way of filling in time.

> "If I had a lot of time waiting at an airport, maybe." (Male, 30+ years.)

One participant questioned the cost benefits of a mobile version.

> "Mobile interaction is a good step, but is the investment and time spent worth it? I feel like while I'd appreciate it being there I wouldn't probably use it." (Male, 30+ years.)

Participants said they preferred a census app over a mobile-optimised website. An app was seen as more suitable, partly because it would save responses locally (on the mobile) and therefore address any issues of connection security.

> "If you turned this into an app rather than a web page you could do a lot of funky stuff with it." (Male, 30+ years.)

> "If an app I would do but wouldn't do if a website. Because apps will store info locally on the phone." (Male, 18–22 years.)

We asked participants what they would do if they started filling in the census form on a mobile device and found it difficult. They gave us a range of responses. Some said they would persevere with the mobile version, some said they would switch to another mode to complete the form, and some said they would give up altogether.

> "Would stop if was taking too long and do it another way." (Female, 23–29 years.)

> "If it took too long I would give up." (Male, 23–29 years.)

Factors preventing people from completing the census on a mobile

The main reasons participants gave for not wanting to complete the census on a mobile were centred around the perception that it would be a slow, difficult, and error-prone process. There was general agreement that filling in census forms on a mobile would be more time-consuming than completing either the paper forms or an Internet form on a PC.

> "Because it's quite a big survey, with a lot of questions, it would probably take longer on your mobile phone than a computer." (Female, 18–22 years.)

> "... on a mobile I would be concerned I'd make errors." (Female, 23–29 years.)

Participants thought of census as a 'serious', 'formal' undertaking. For important tasks, requiring more than a few minutes attention or writing, participants would choose a PC.

> "… you wouldn't be as focused as sitting down at a PC to do it [the census]." (Female, 18–22 years.)

In line with this, the majority of participants said that the device they would use to access the Internet would depend on the context of the task as well as their physical location.

> "I can't imagine doing it [the census] on my phone 'cause I would be doing it at home and so it would feel more logical to do it on my laptop." (Male, 18–22 years.)

> "Mobile is for more casual use." (Female, 15–17 years.)

A PC was seen as a more appropriate option for filling in the census because of the number of questions and the amount of keying that was needed to answer them. Overall, participants agreed that the census form was too long to do on a mobile, with one stating that five to 10 questions was the maximum number they would tolerate on a phone.

> "I find this [the census] really, really unmotivating to do over a phone." (Female, 23–29 years.)

A mobile was not seen as a practical mode for these activities because of the limitations of the small format, particularly the screen and keyboard size.

> "Fingers would get sore. Small little phone and you're trying to hold it – nah." (Male, 30+ years.)

> "I think I'd be over it by the time I'd finished writing my full name in." (Female, 23–29 years.)

Participants pointed out that many census questions have a lot of text with a large number of response options. This is not ideal for the mobile format as they would require scrolling up and down to see all the options.

Participants also noted that the guide notes, specifically the income table in the guide notes, were difficult to display well on a phone.

Some participants pointed out that the predictive text function would be problematic. This would be a source of frustration because it could lead to errors if they were trying to enter a word that wasn't recognised. For example, one participant wondered what the predictive text function would do to iwi names.

> "Another issue is this auto correct business. No way some answers will be collected." (Male, 30+ years.)

Other concerns included longer loading speeds, instability of Internet connection, and potential loss of partially completed forms.

> "You wouldn't be confident it would go through [submit]." (Female, 15–17 years.)

Overall the perception was that completing the census on a mobile would be more difficult and less reliable than other modes.

> "If you had to you'd get by, but it would never be my first preference. It would be my last one. I'd rather do a [paper] form than fill it out on a phone." (Male, 23–29 years.)

What a mobile Internet census option might look like

We gave participants paper census forms to look at and asked them to consider how they could be designed for mobiles.

Many of the responses confirmed our assumptions – a mobile Internet census would have to be simple to navigate and content would need to be cut back to the minimum.

Participants said there should be the least amount of typing possible. Drop-down lists of response options or other 'select' functions for questions such as date of birth were preferable to having to type in text. Navigation should be easy and intuitive and there should be no need for horizontal scrolling.

A number of participants thought it was necessary to have a progress bar so that they would know how far through the questions they were.

> "Progress bar is very important so you know how long you're in for." (Male, 23–29 years.)

Earlier in the session participants had told us that they were familiar and comfortable with the scrolling page format through use of sites such as Facebook. However, for census forms, a number of participants said they preferred a page-by-page (question-by-question) approach.

> "One long, long page full of questions? I just wouldn't do it." (Male, 30+ years.)

Participants also felt that help information would need to load on a separate page and should display question by question only. All pages would need to load quickly and a mobile Internet census would have to be free to access.

While there was little enthusiasm for a mobile Internet option for census, participants generally felt that if it was designed to be simple and highly usable it wouldn't be too bad.

> "Wouldn't be that bad on an iPhone if just a lot of tick boxes. It'd just be really long-winded." (Female, 30+ years.)

5   Conclusions

We conclude that with the current technology available a mobile Internet census may not have a high take-up.

Our participants didn't like to complete forms on mobiles, and security was a concern for some people. They thought that completing the census on a mobile would be more time consuming, difficult, and error prone than other modes. There was little support for a mobile Internet census option and participants said they were unlikely to complete their census this way.

The costs required to develop a mobile Internet option for the 2013 Census may therefore fail to bring substantial benefits.

However, we did discover a lot about what would make a mobile Internet option for the census more appealing. The census form would need to be designed specifically for mobiles. The presentation would need to be simple, with single direction scrolling, minimised content, white space, and simple links. Keying would need to be minimised, with drop-down lists of responses preferable. A progress bar would be useful, so that people would know how far through the questions they were. A page-by-page approach may be preferable to a single page containing many questions, and help information would need to load on a separate page. All pages would need to load quickly, and a mobile Internet census option would have to be free to access. A census app may be preferable to a mobile-optimised website.

6 Looking to the future

The findings from our focus group research are consistent with the results of research conducted elsewhere. For example, studies show that social networking is accelerating the growth of mobile use (Murphy & Meeker, 2011) and people are now spending more time on mobile Internet applications than they are on static Internet (Rao, 2011). However, mobile Internet users typically connect to the Internet for short periods only. These short periods of activity, sometimes described as 'snacks', are usually around five minutes duration (Legatt, 2011). People are most likely to use their mobiles for location-related tasks, or for problem solving activities, such as finding small pieces of information, than they are for other activities (Hudson, 2011).

Other studies confirm that people dislike having to enter passwords (Wroblewski, 2008), and that Internet questionnaires take longer to complete on mobiles than on other devices (Johnson, 2010). They also show that questionnaires get better response rates from mobiles when they are short, and that people's answers from mobiles are typically shorter than their answers to other surveys (Johnson, 2010).

The results of these studies, alongside the findings of our research, suggest that a mobile Internet version of the census forms would have limited appeal. A poor user experience could lead to poor data quality and poor perceptions of Statistics NZ. The cost required to develop a mobile Internet version of the census forms may currently bring little gain for the organisation.

However, as technology advances and mobiles become more and more sophisticated, it seems certain that the user experience of mobile Internet will improve. Mobiles are predicted to become the preferred method for accessing the Internet within four to five years (Meeker, 2010). As mobile-friendly websites become standard, and mobile connections become cheaper and more reliable to access, users will increasingly opt for the convenience of mobile Internet.

Many organisations are now adopting a philosophy of 'mobile first' when designing for the Internet (Wroblewski, 2011). Those organisations recognise that the use of mobile Internet will increase dramatically in the future and that sites designed for mobiles will provide better experiences for their users. The constraints inherent in mobile design force developers to prioritise their business needs and opt for simplicity. Simple designs not only enhance people's experience on mobiles, but have the added advantage of enhancing people's experience on PCs as well.

We recommend an approach of 'mobile first' for the 2018 Census. This will respond to the trend towards mobile, and allow Statistics NZ to take advantage of the opportunities that this will present for data collection. Such an approach will prepare the organisation to meet a dramatically different Internet environment in 2018.

7 Methodology

This section describes the methods we used in our research, including the people who took part in our discussions, the questions we asked, and how we collected the information.

What we wanted to find out

The objectives for this research were to explore the following topics:

- the range of devices that participants owned and used
- typical patterns of Internet activity on a mobile – such as how often participants accessed the Internet, what sites they accessed, and how long they stayed connected
- design features that help make Internet sites mobile-friendly.

Essentially, we wanted to find out how people were using the Internet on their mobile and what that might mean for us when designing a mobile-friendly census form. We wanted to know what kinds of layouts and designs work well for a mobile user and what doesn't work well. What are the features that make a mobile website design user-friendly?

What we did

To research these issues, we held four focus groups with young people and professional adults. Focus group testing is a qualitative research method. It involves discussion groups in which people are asked questions about topics of interest to the researcher. Key themes and issues about a topic are identified through interactive discussions, and participants are encouraged to talk with one another and share their views. This methodology allows researchers to explore participants' perceptions, attitudes, opinions, and behaviours.

While qualitative research is a very good way to identify and explore key issues and behaviours associated with a particular topic, it cannot tell us how representative or prevalent those patterns are among the wider population. To find out whether the findings from our focus groups reflect the experience of people in the wider population, it would be necessary to conduct quantitative research.

How we did it

We held the four focus groups over a two-week period between 19 and 26 October, 2011. The duration of each group was between one to one-and-a-half hours. There were six to nine mobile users in each group. Those mobile users had a range of different Internet devices and they varied in the amount of time they spent on the Internet using their mobile. Those differences are shown in the table below.

Characteristics of focus group participants

Characteristic	Number of participants
Age (years)	
15–17	9
18–22	6
23–29	7
30+	8
Gender	
Male	14
Female	16
Frequency of mobile use	
Every hour	3
Every day	24
Less than every day	3

What questions we asked

We developed a topic guide for the focus groups. This guide listed the topics we wanted to cover and the questions we wanted to ask for each topic.

We started the groups by asking participants to tell us what kind of mobile they had and how often they used it. We then asked them to list the ways they used their phone and what Internet websites they visited using their mobile. Next we asked them to tell us the things they liked and the things they didn't like about Internet designs for mobiles. Finally, we talked specifically about the census and how that might work on a mobile.

Please see the appendix of this report for a copy of the topic guide.

Who we asked

We invited young people and professional adults who had some kind of mobile that was able to connect to the Internet to attend our focus groups. We identified those people through our own personal networks, the networks of other staff at Statistics NZ, and flyers that we put on the notice boards at Victoria and Massey University in Wellington. We sometimes asked volunteers to invite their friends.

Since we wanted to find out about Internet design for mobiles specifically, we only recruited people who used their mobile to access the Internet, but we did not require them to have any particular skills. Some of the people we recruited used their mobile infrequently, while others used their mobile a lot. The frequency of use ranged from almost every hour of every day to less often than every day.

How we ran the focus groups

We grouped our volunteers into four key groups. The first three groups consisted of those aged 15–17 years, those aged 18–22 years, and those aged 23–29 years. We asked adults of 30 years and over to come along to the fourth focus group, so we could see if there were differences in the patterns of use between age groups.

We held our focus groups at Statistics NZ's office in Wellington. Discussions lasted up to an hour and half. We explained to our participants why we were doing the research and what would happen to the information they gave us. We also told them that we would be recording the discussions and asked them to sign a consent form to show that they were happy for us to do that. Participants were given a $50 gift voucher as a thank you for attending.

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Appendix 1: Focus group topic guide: Mobile Internet

1. Warm up (10 mins)

Introductions

A little about Statistics NZ – produces key statistics for the country, such as statistics about the population (how many people, ethnic mix, etc).

A little bit about yourself – your name and how you heard about this focus group.

Kiri Saul and Lyn Kaye at the back taking notes.

Purpose of the group

To find out how people use the Internet on their mobiles, focusing particularly on young people.

Results will be used to help Statistics NZ to develop better ways to connect and interact with young people.

Housekeeping

Point out location of toilets/exits, etc.

Encourage participants to speak up. We want to hear from all of you. But let others finish talking.

Obtain agreement to tape the session.

Explain that:

- information will be used to write a report
- confidentiality will be protected; the report will not name or identify anyone personally
- we will be taping the discussion so that we can capture everything
- only Statistics NZ staff with a 'need to know' will listen to the tapes.

Obtain signatures to record that participants understand and are happy to have the discussion taped.

2. Use of Internet (20 mins)

I'd like you to start by thinking about the Internet. How do you connect to the Internet? Where are you when you do that, and what are you using?

Think specifically now about using the Internet on your mobile. What kind of mobile do you have?

Do any of you have more than one device? If so, which do you use most often and why?

How often do you connect to the Internet on your mobile?

How long do you typically spend on the Internet on your mobile?

Is cost a factor? Do you have a plan or do you prepay?

How often do you upgrade your mobile?

3. Primary uses (20 mins)

Exercise 1

Could you all take a sheet of paper and write down all of the things you use your mobile for?

Once participants have done this, ask them to rank the list from most common to least common.

Discuss as a group. Each to share their thoughts.

Exercise 2

Now I'd like you to write down the all the Internet sites you can think of that you visit on your mobile.

Once participants have done this, ask them to rank the list from most common to least common.

Discuss as a group. Each to share their thoughts.

What's different about the sites you visit most often, compared with the sites you visit less often?

Are there some sites you prefer to visit on a bigger screen?

What sites are those?

Why do you prefer the bigger screen for those sites?

4. Preferences (20 mins)

What do you think makes an Internet site mobile-friendly?

What are the things that make an Internet site hard to use on your mobile?

How easy or difficult is it to enter text on your mobile?

How easy or difficult is it to use drop-down lists?

5. Census (20 mins)

How much do you know about the census? Have you ever filled in a census form?

Did any of you who filled it out last time fill it out on the Internet?

Do you think you would fill out an Internet version of the census form on your mobile? Why?

Exercise 3

Hand out a copy of the census forms to participants.

What do you think a mobile-friendly census form would look like? What kinds of features would it have?

6. Wrap-up (5 mins)

Is there anything else you want to share about using the Internet on your mobile that we haven't already covered?

Thanks and wrap up.