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Google Homegrown /

Advanced Global Mobile Trends /

Prepared by Contagious Insider

www.contagiousmagazine.com / www.google.com/think/insights

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Methodology

Google Homegrown is an online community of Googlers from countries all over the world. It was conceived with the idea of quizzing Google's own, early-adopting employees for insight into a variety of subjects, beginning with Mobile.

To conduct this unique piece of internal research, Google's Market Insights team collaborated with market researchers BrainJuicer and trends consultancy Contagious (see 'Partners'). The Google team reached out to over 80 mobile early adopters throughout the network, and established a community with members from the following 19 countries:

Australia	Brazil	Egypt	France	Germany
India	Ireland	Japan	Kenya	Netherlands
Russia	Singapore	South Korea	Spain	Switzerland
Turkey	UAE	UK	US	

Throughout April and May 2011, the Google Homegrown community came together in an online forum to discuss their responses to three consecutive briefs. These briefs asked the members to explore how they use their mobile handsets, and how they've seen other people using them. The forum allowed them to comment on each other's ideas, observations and experiences to highlight common themes and areas of difference across the globe.

The forum was monitored and moderated throughout the process by BrainJuicer and Contagious in order to provoke further debate on the most pertinent subjects.

Google Homegrown /

Executive Summary

**'Smartphones are smart, and they're going to get smarter.'
The forum encouraged members to explore how they use their
mobile handsets, and how they've observed other people using
them. Six key trends emerged (as outlined in this report); some
highlighting universal or common global behaviours, others
demonstrating regional nuances and differences.**

A. Rules of Engagement
Complex contact strategies, contstant device useage and proactive battery
management characterise advanced mobile usage around the world.

B. Multiscreen lives
Smartphones have become an integral part of the television experience and vital
to seamlessly accessing content and media across multiple devices.

C. Local life
Whilst the internet has for years been about reaching out beyond virtual and
real borders, our smartphones are the key to unlocking local opportunities,
experiences and information.

D. Mobile: The Bridge Between Online and Offline
People are increasingly using their smartphones to blur the digital and physical
with digital interfaces that result in real world actions and handsets that recognise
and understand real world objects.

E. mCommerce
Convenience is king when it comes to the digital wallet, mobile commerce and
mobile financial management.

F. Health and wellbeing
Applications and tools that help us to better quantify, understand and regulate our
behaviour and physiology are becoming increasingly popular.

In this report we have explored the key themes of the research; contextualised these
themes within broader trends; and included a sample of quotes from the forum to
support our findings.

Trend A: Rules of Engagement

Rules of Engagement

Our Homegrowners, as you'd expect of people quick to seize upon new technologies, epitomise the 'always on' nature of 21st century communication. We asked the community how they used their handsets to keep in touch – and the finding was unequivocal. Everyone had developed their own set of rules dictating the channels they used to contact different groups of people.

For some, the intimacy of voice was for family whilst email and SMS were reserved solely for work, or particular friends. Others preferred the immediacy and directness of voice for their work colleagues, with SMS and instant messaging being the best way to continue light hearted chatter with close friends. The choice and strategy for each was dependent on things like the perceived technology proficiency of recipients, time of day and location.

Importantly, this fragmentation of contact channels works two ways. As new channels layer with (rather than replace) each other, it has meant that whilst there are more ways to contact the individual, the way those channels are prioritised offers levels of privacy. Sharing a Twitter handle or even phone number is one thing, but access to someone's BlackBerry IM pin code can mean something else. Whilst we've opened up new routes for people to access us, we're also trying to create some sense of control through categorisation and sorting.

As members of a worldwide workforce, the Homegrown community also offered insights into international communication challenges. When travelling abroad they are avid users of applications which make keeping in touch with home more affordable and convenient. Viber, Nimbuzz and Skype over both data and Wi-Fi connections were frequently mentioned, as was the platform agnostic Whatsapp IM service.

References to social networks were in no short supply either – but mainly as a connecting tool for communicating with particular individuals in their network, or to get a message out to more than one person at a time.

So the Homegrowner's experiences point to a future of continued – and welcomed –connection channel fragmentation and layering. Whilst this means more platforms to handle, it offers people more control and levels of intimacy, in an increasingly open world.

Always on to always active
Interestingly, social networks, voice calls and messaging services took up little of the most impassioned discussion within the community. With a wealth of new functions, courtesy of the mobile web and apps, there are new expectations of smartphones, set by the joy of discovering solutions to simple everyday problems via mobile, or just the benefit of having a second (or third) screen to multitask with.

Trend A: Rules of Engagement

The community was most fascinated with services and content that could fit in to their everyday habits. A number recited a list of applications and functions that came into play throughout the day – meaning their devices are not just switched on around the clock, but that they're also ever-active; constantly being used for searching, browsing, buying and playing.

Live long and prosper

'Always on' and 'ever active' are behaviours that put the stamina of smartphones well and truly to the test; battery power is at the forefront of the minds of Homegrown members whenever they use their handset. Despite the increasingly complex functionality of smartphones, battery life was still one of the key factors in choosing their next handset. Consequently, plenty of our members described the importance of using apps to help preserve power (such as Advanced Task Killer and Juice Defender) by killing unnecessarily active programs. They also proactively manage their network connections throughout the day: for example toggling Wi-Fi settings and activating In-flight modes whenever appropriate to ensure the last drops of juice can be used to their fullest when needed.

As well as using app-based phone power management users are highly conscious of charging opportunities. Plenty of members now own more than one charger so that there's never a chance of getting caught out in the red zone: one for work and another for home, so that their phone is, in fact, (to coin a phrase of one contributor) 'on a leash' for most of the day, every day.

Key takeaways and implications

- As community members add new layers of communication channels to their mobile phone, they are in turn taking control of how they can be reached. Everyone has their own rules for engagement and recognising the importance of these hierarchies is vital.

- The most frequently cited uses and applications of phones for our community members were those that slotted in to their everyday life to solve existing problems – rather than those that created new experiences.

- Our community members' phones were 'ever active' – constantly in use throughout the day. Keeping applications and content mean but lean is vital for users who are increasingly concerned about battery life.

Trend A: Rules of Engagement

In their own words / Contact Strategies

'A mix of calls, SMS, and email. No Instant Messaging. Interestingly, it seems different people tend to have a preference for one type of communication. Some contacts are calls-only, some mostly SMS. Email reaches pretty much everyone. Personally I prefer calls as they're more efficient than trying to type on a small keyboard or the touch screen. This is changing now that I have Swype installed - it improved my input speed significantly.'

– M, UK

- -

'I usually call everyone in my family, but with friends I use email, SMS, Facebook messaging and WhatsApp depending on what the others are using. When I contact a group of friends I usually use Facebook since it is very easy to choose more than one contact. When it is urgent I call, when it is just for the fun of it I use What's App, and if I just want to say hello I use Facebook.'

– M, Germany

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'In regard to instant messaging, I specifically use Google Chat. I find that most of my friends have Gmail addresses, so it's the most convenient system. I'll often use IM to keep in touch with friends who may be an ocean away since it helps overcome time change and international calling issues. I often find that I use chat a lot during my commute. I ride the bus to work, so I'll be pretty idle and it's easy for me to chat with my friends through IM then. IM is great for catching up and helps me multi-task; I may not be able to have six phone calls concurrently, but I certainly can have six IM conversations!'

– F, Australia

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In their own words / Passion Points

'I'd say when I use my mobile for communication, it's rather with email and IM than with calling and SMS. I use my phone to keep up to date on my various Google Reader news feeds and podcasts. I also use bluetooth headphones to listen to the latter. I tend to at least try out every feature my phone (or any technical device I own has). Some uses are simply limited by external factors, like there are no other NFC devices. Others are limited by my finite time - e.g. listening to music. Because I always have my phone with me, I sometimes use it to read ebooks, even though it's not a pleasant experience. For entertainment I rather use a couple of short games (up to three in rotation) than watching video.'

– M, Australia

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'So when on Wi fi at work, I'm using the App market, downloading some funky or brain teaser sort apps and generally using the phone when I have a minute to myself and nothing to do.'

– M, India

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Trend A: Rules of Engagement

'I use my phone through my whole day - the sleep cycle alarm I downloaded... news over morning coffee... music on my way to work... email when I'm away from my desk. I check Facebook at lunchtime (and other times!) as well as personal email. I use mobile search all the time - like to solve arguments over dinner, and being new to Sydney Google Maps, Google Places and Urbanspoon are all super helpful, as is the camera to capture unexpected fun moments. I recently discovered Qantas m-ticket which is awesome. I've also got a few health & wellness apps now - Livestrong Calorie Counter, MyCalmBeat breathing app, and Sleep Cycle which I love.'

– F, Spain

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'I think I'll explain from morning to night. Morning: At home in bed and in the shower, and on the subway/train during my commute. Why: To check my calendar for the day, check the weather, check for urgent email, and then in the shower I usually use a waterproof speaker enclosure to listen to a podcast (NPR or other talk radio), then on the commute check the news, and either listen to a podcast or study Japanese (using an app). During the workday: At work, in the office. Why: To check my calendar and email as I'm away from my desk. After work on the subway/train, at home. Why: To kill time on the commute (read news, listen to podcast), and check for urgent email. At night: In bed. Why: Check my calendar for meetings for the next day, set my alarm for the next day. Sometimes listen to podcast while I drift off to sleep. On the weekend it is quite different: Everywhere, on the street, on the train, etc. Why: Mainly to access maps and research places to go and get directions on how to get there.'

– F, Australia

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In their own words / Battery Life Management

'I am not quite sure if I handle efficiency in the right way. I do switch certain functions on and off to maintain battery life, like notifications (email, Facebook, etc.), alerts (breaking news) and GPS. But I don't know how far switching off GPS saves me any battery life. I am not always in a position to be able to charge my phone. That's why I sometimes have to switch it off during the day. On some rare occasions I carry a second battery with me.'

– M, Germany

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'My phone is usually on a leash during weekdays - when sitting at my desk and during the nights in the weekend. This means that I have a charger at home and at the office. However, my home charger is in the living room and I am too lazy to take out. Therefore I don't charge it at night during weekdays (as I use the phone as an alarm clock) and I don't have a charger at my bedroom - having three chargers is too much for one phone.'

– M, Netherlands

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Trend A: Rules of Engagement

'I know Android features a native App killer but I'm trying to find the best ways to save battery so, before locking my screen, I kill my running apps with the app Juice Defender / Ultimate Juice: Not convinced that it really helps saving the battery but downloaded anyway and see some improvements. When it comes to managing battery life I use different type of apps: First of all thanks to Widgetsoid I can quickly access different settings which have a huge impact on battery life: 3G, Wifi, and Brightness. When I want to save battery, I deactivate 3G and Wifi and turn the brightness to 30%. When it comes to Apps, which can help, I use Advanced Task Killer which allows to kill apps temporarily and Juice Defender / Ultimate Juice which has different parameters if you really want to save some battery. I have to say that I'm not really convinced about the efficiency of these apps, as I still need to charge my battery every night and it is really annoying.'

– M, Ireland

Trend A: Rules of Engagement

Adopted Technologies

www.whatsapp.com
A popular cross-platform mobile instant messaging application

www.juicedefender.com
Using this app, users can prolong battery life and get more done

www.nimbuzz.com
Using this app, users can prolong battery life and get more done

http://jaumard.android.free.fr - widgetsoid
Widgetsoid helps Android phone owners customise their phones and toggle applications

　　　　　　　　　　　　　　　　　　　　　　　　　Think with Google

Trend B: Multiscreen lives

Multiscreen lives

New screens have become pervasive in the lives of people the world over, with touchscreen smartphones and, more recently, tablets joining televisions and computers in everyday technology vernacular. Google and Ipsos MediaCT recently released study results from the first half of 2011 showing that numbers of smartphone users across markets who use their phones whilst also watching TV are comparable across markets: this is true of 49% of users in the US, 53% in the UK, 52% in France, 43% in Indonesia, and 49% in South Africa. This trend is indicative of new behaviours, enhanced experiences and different opportunities to engage and connect to viewers.

The Homegrown community was no different. The majority had used more than one screen simultaneously – most often when watching television. But they didn't just describe the way they talk to friends or contribute to a conversation on messageboards or social networks. A wide range of tasks and actions were discussed where at least one additional screen was used.

New layers to television entertainment

When discussing and sharing experiences of their multiscreen lives, three categories of activity emerged from the community; multitasking, synchronous and linear. 'Multitasking' refers to the simultaneous use of screens where the content or actions being experienced in each are not related to each other (such as general internet browsing, or texting whilst watching a favourite programme), with attention alternating between the two. Principally, members reported using these extra screens when their interest and attention was waning in a programme, opting instead to contact friends and family, or check activity on their social network profiles.

'Synchronous' behaviours involved instances where the content or actions on each screen were related in some way. A number of members highlighted use of social search (such as Twitter Search or Google Trends / Live Search) to help them monitor and analyse how the conversation or buzz around a programme develops, letting them become part of a 'virtual living room' of many thousands. Searching for further information about topics within a programme was also popular (such as searching IMDB for a particular star bio), as was creating 'to do' lists and reminders prompted by what had been seen on TV (places to visit or products to research later in more detail, for example).

This type of behaviour is something that developers have already latched onto: GetGlue was amongst the applications that the community mentioned having experience of, allowing television viewers to 'check in' to programmes and other entertainment properties, emphasising the communal nature of broadcast TV.

Trend B: Multiscreen lives

Away from television, a number of members also referenced using a computer and their mobile handset in synch, using the handset to photograph an on-screen QR code in order to access content conveniently when they're on the go.

The search for seamless sync
The third category explored by the Homegrown Community was 'linear', where rather than used simultaneously, screens are used to access the same content immediately after each other, such as when reading documents on desktops and then continuing to do so on the way home through a mobile. Whilst there are tools available designed to meet this demand with a cloud based solution (such as Evernote), for many it still proves more convenient simply to email links and documents, to be retrieved from inboxes through different devices, and downloaded in an appropriate format from there.

As consumers increasingly become increasingly dependent on the cloud, the reliable synchronisation of content and services across web-enabled screen devices will be vital. They are less likely to differentiate by platform in the future; saving content for consumption at a later point will be expected to work whenever, wherever, and with whichever device they require.

There was also some discussion of the emerging codes of courtesy in social situations being defined by multiscreen use, with some members commenting that different combinations of screen usage may go on to have differing levels of acceptability.

Key takeaways and implications

- Community members like to watch or read content across multiple devices, so content that is flexible is vital – platform neutrality helps them.

- TV is truly social and almost all of our members had experience of the 'virtual living room' – conversations about programs take place as they happen, not just the day after at work or school.

- If a program raises a question or inspires, our members are motivated to find out more there and then on another screen. Harmonising touchpoints will enhance their experience.

Trend B: Multiscreen lives

In their own words / Multitasking

'Sometimes use my Android phone together with my iPod touch and my home and work computers, basically syncing information (contacts, appointments, tasks, etc.) back and forth. There are some applications (especially Gmail, Google Calendar, Remember the Milk and Kindle) that I use across all these screens seamlessly. As I said before, I love the cloud-y aspect of these apps, and the ability to have my data always updated regardless of the last used device. I'm now going to buy a tablet (probably a Xoom) and see in which situations and contexts I'm going to use it most (probably at the office and in my living room at home).'
– M, Brazil

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'Multiscreen: yes!! I am usually using my laptop, ipad, ipod touch, laptop and watching TV at the same time while at home. I have all these devices around me and as soon as the movie/show I am watching starts to get a bit boring or slow, I pick up one or more of the devices and surf the web, reply to emails, etc. Currently none of the screens interact with each other.'
– M, UAE

- -

In their own words / Synchronous

'Multiscreen has taken over my life! Main way is I never watch TV without at least one more screen open, often a mobile, sometimes also a notebook or tablet. How do they differ? Ok, so let's say I'm watching live sports on TV. Smartphone will be used for texting about the game and/or keeping a twitter search on. Notebook will be used for either Google Real time search on the game, or Tweetdeck pulling in Twitter and Facebook feeds on the game. Tablet will often be used to search for more/immediate information on what I'm watching on TV. All devices are connected in that they're all being used to enhance TV.'
– M, UK

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'I use the phone while i use the TV. While using the tablet, the relationship is mutually exclusive, as in I use only the tablet and only pick up the phone when there is a call to answer or SMS to respond to. With the TV however, while shows are going on, I still use the phone to look up information about something I saw on TV, say wiki info about a person or a place or some note on where I would like to travel. Between a TV and phone, both are equal weight, whereas phone and tablet, tablet would be the preferred one except again where call/SMS is involved.'
– F, UK

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'My mobile is the second screen that I use to get more information about content on the first screen - looking up the location of the Kardashian's NYC store, learning more about a product I see at the movies, setting reminders for myself, watching extra content on YouTube etc.'
– F, Australia

Trend B: Multiscreen lives

In their own words / Linear

'I do use my phone in conjunction with my laptop. Not simultaneously, but in quick succession. I stop using the laptop, pick up the phone, do something quick like check for a phone number or browse for something and then get back to work.'
– M, India

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'I often use a combination of my phone and either my laptop or my tablet. I sometimes send webpages from Chrome on my laptop to my phone to continue viewing on the go. I also use my phone to scan QR codes on my laptop screen.'
– M, Kenya

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In their own words / Codes of Courtesy

'One cultural limiter is the "rude factor" if you're watching TV with someone but scanning a second screen simultaneously - not quite on a par with texting while chatting but annoying to many!'
– F, UK

- -

'Cultural factors limiting screen size? I think there are some, using a laptop in a group of friends would seem out of place, but using a mobile would be fine. Using a tablet strikes me as it would be reasonable, but I haven't really tried, so I can't be sure.'
– F, US

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Trend B: Multiscreen lives

Homegrown Tipped Technologies

http://bit.ly/gPwa0Y - Chrome to Phone
Chrome based extension that allows users to push content to their mobile phones

www.evernote.com
Evernote allows users to capture their ideas and then access them wherever and on whatever device they choose

www.getglue.com
Users of GetGlue can check in to TV programmes, so that they can discover new favourites and see what others are watching

www.intonow.com
IntoNow helps users identify the TV shows their watching, check in to them and find out what their friends are watching

Trend C: Local Life

Local Life

The fact that location based services were an area of intense discussion within the community emphasises both the necessity people feel for such utilities, as well as the curiosity that we have with our local environment: whether that's where we live or somewhere we're visiting.

At the simplest level, most community members were frequently making use of applications and tools that identify where they are and help them arrive at a different location. A number had anecdotes about how these services had come to their rescue on a number of occasions, or created new opportunities.

Whilst the internet has helped people to discover and explore the unfamiliar in the real and virtual worlds, smartphones are being used to to unlock local life with enhanced knowledge, convenience and opportunities.

Recommendations and deals will drive success

One of the key insights from the discussion was the way in which mobile was cited as a means to an end; a tool for getting things done as opposed to simply a media channel. Rich in-app experiences and immersive journeys / games were rarely discussed by members). On the other hand the depth of information available about local services in the form of reviews was often emphasised: that two or three sentence reviews from three years ago are not enough; they want frequency, volume and insight whilst still on the go. People ultimately want to look up, not down.

The community wants to enjoy their local neighbourhoods or new pastures armed with three things: reviews, recommendations and deals. Building quality into developing these pillars at the hyper-local level will require a groundswell of participation from users and developers in order to make the tools genuinely useful.
Rich hyper local services: the challenge ahead
One of the clear desires from the community was that hyper-local information and services improve; that quality of information available on businesses, events and opportunities around the corner be as rich as that which can be found for the heart of busy urban centres like Tokyo, Barcelona or Sao Paulo.

What was clear from the community's preferences and desires though was that this doesn't always necessarily involve improving the quality of information and services available at the local level within apps that have a broader geographical reach. Many favourably discussed tools and applications that were limited in scope by their hyper-local nature, but had offered depth of knowledge and valuable local understanding.

Trend C: Local Life

Cabbie, a popular tool for our community members in Singapore, for example, is an application that can book and cancel local taxis more efficiently than telephone calls to do so, and is built upon the core knowledge of the way that taxi business operates in the region. Also based on a car theme, bey2ollak, in Egypt helps inhabitants of Cairo negotiate the city's complex and heavily congested roads.

The community's discussion revealed a truly deep and diverse opportunity in mobile at the local level, demonstrating that even at a time of ever accelerating globalisation, a touch of local knowledge holds premium value.

Key takeaways and implications

- The desire for more location based services and utilities is there – and specifically at the hyperlocal level. Whilst this is rich in tech oriented urban centres and sprawls our community wanted a better spread.

- In addition to the provision of local services, triangulation with data relating to personal preferences should help deliver more relevant and useful information to individuals.

- Users expect to benefit from an experience at their destination – the mobile experience should be a means to an end. However, a bit of creativity and fun won't cause any harm, as long as it's opt in and not at the expense of important information.

Trend C: Local Life

In their own words / Local Life

'Being able to give you a list of 5 coupons, let's say, which are based on your current location and interests is going to be a huge thing. I don't think that the GPS location needs to be that accurate. If it can do triangulation on the user and tie this in with their interests, that should be good enough. I believe that users are more likely to offer more details about their interest in order to get a great bargain. Who doesn't love a great bargain right?'
– M, UK

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'I think that apps that will make even more sense, will be even more useful and make life easier will be those that provide very local information with rich quality, such as traffic information, local commerce and services information, etc. My life would be improved with this focused on very local and rich information.'
– M, Brazil

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'The app that I find really useful is Cabbie. It's an application that is created by local cab providers to locate and book a cab over the app.' –
F, Singapore

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'I think apps and sites will take in to account the users physical location in the future, presenting opportunities to the user based on their location.'
– M ,Singapore

- -

'I also think that AR apps could be something great for businesses: let's say you're in a street / Commercial centre and you can use your screen to check where you can bike these Nike shoes that you've seen previously, you could also have a social layer where your friends would recommend you this shop vs another one.'
– M, Ireland

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'Cairo has bad traffic. One of the popular applications on the mobile is a local traffic application where users generate the content by updating the traffic situation in the main roads. The application is called "Bey2olak" which means in Egyptian: "I heard that." Now #bey2olak is one the most popular hashtags on twitter in Egypt where people find news about traffic.'
– F, Egypt

- -

'Everywhere, on the street, on the train, etc. Mainly to access maps and research places to go and get directions on how to get there. True story: I was biking and got a flat tire. I used my phone to search for a bike shop in the area and then used walking directions to guide me through the Tokyo maze.'
– M, Japan

Trend C: Local Life

Adopted Technologies

www.bey2ollak.com
Traffic application that comes to the aid of Egyptians negotiating the city's unique traffic problems

http://bit.ly/iTygkc / Cabbie
Cabbie helps people in Singapore book a licensed taxi quickly and conveniently

www.lovefre.sh
Lovefre.sh helps users find retailers supplied by local food producers

www.urbanspoon.com
Urban Spoon recommends restaurants in your local area, offering reviews, sample menus and price guides

Trend D: Mobile: The Bridge Between Online and Offline

Mobile: The Bridge Between Online and Offline

For the Homegrown community, the omnipresence of the mobile phone reflected an increasing reliance on the device to augment our everyday, physical lives - resulting in profoundly more useful, relevant or meaningful experiences.With the ubiquity of the term 'multiscreen', it can be easy to forget the defining quality which sets the mobile phone apart from a computer or a TV – its portability.

The community members' insights are in fact consistent with the growing trend of 'post-digital' behaviours - a concept which suggests that as communications are increasingly served through digital channels, this only emphasises the need for the central messages or services to resonate on a tangible, human level. Put simply, something means a whole lot more if you can see, touch or engage with it in the real world.

Many community members are already using basic applications or services which blur the lines between the physical and the digital, such as maps, or taxi ordering services. For the others, however, seamless, post-digital experiences are something to look towards in the future. Common expectations include the streamlining and automation of existing, mundane process – be it paying bills, booking a table at a local restaurant or checking in for a flight without having to wait in line.

The quest for seamless connectivity: tags, codes and apps
The most widely recognised enablers of post-digital connections were visual tags – such as Quick Response (QR) codes – which most community members associated with advertising or branded communications. In particular, they cited the simplicity and versatility of the QR code because it can be used on any surface or screen as a way to connect them to online content, platforms or portals. There was also reference to the discretion and 'opt-in-to-engage' ethos of the technology; that we can choose whether or not to jump down the rabbit hole as opposed to experiencing an interruption.

The Homegrown community did, however, recognise that some of their experiences of QR technology exposed its limitations. These include the barrier to entry created by having to download a dedicated QR reader app in order to scan a code – as well as the fact that they look slightly ugly and could be tricky to integrate into existing promotional materials. Some treatments of the technology that had been experienced were also deemed gimmicky – though this was tempered with the view this was usually based on the quality of content being linked to, rather than the code itself: a useful lesson for those hoping to apply the technology.

Trend D: Mobile: The Bridge Between Online and Offline

Augmenting the physical world

Augmented Reality (the process of superimposing virtual content onto a physical object or environment) was one of the most popular - and divisive - topics discussed by the Homegrown community. Many members had tried the technology, although few were regularly using dedicated AR applications on their mobile phones. The consensus was that AR was not yet advanced enough to affect our daily lives in a genuinely meaningful way, but that it will play a profound part in the future of mobile utility. Indeed, it is estimated that by 2012, between 150 and 200 million people worldwide will be using Augmented Reality applications on mobile devices, compared to just 600,000 in 2010 (Perey Research & Consulting, Montreux).

One issue raised by Homegrowners was that AR too often feels like a novelty, and that the technology was far better applied to new, groundbreaking services – as opposed to supplementing (and potentially) cluttering existing platforms with pointless virtual layers. A good case of best practise in applying the technologuy is the Word Lens iPhone application. This app translates foreign text – be it on a sign or a menu – when viewed through the device's camera, and displays the copy in the user's pre-determined mother tongue. This is a service which quite simply couldn't exist without AR.

The importance of preserving the analogue qualities associated with certain products or services was also expressed by the community. One user, for example, explained how they would always want to hold and read a physical menu in a restaurant. However, they would welcome access to a virtual layer of content which provided more in-depth information about the food such as where the ingredients were sourced or what wine may complement their dish. As with the implementation of any emerging technology, successful applications of AR – and other technologies that blur the digital physical divide – will be those which don't sacrifice the user experience, but rather reduce friction from their physical, everyday lives.

Key takeaways and implications

- The community's discussion around QR and AR demonstrates the interest and fascination with technology that can help link the digital and real worlds.

- The members had experienced a wide range of applications of this type of technology; from advertising to business cards to logisitics – highlighting the breadth of need for bridging technologies.

- The split in opinion over these experiences shows that it is the quality of content, tools or layers of information being linked or added to that will define the success of technologies that bridge the online and offline divide.

Trend D: Mobile: The Bridge Between Online and Offline

In their own words / The Bridge Between Online and Offline

'My most frequent multi-screen use case is actually scanning QR codes onto my mobile as a cross-device copy & paste operation. I even have a browser bookmark to create a QR code based on what's selected on the webpage or the page's URL if nothing is selected.'

– M, UK

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'I have some experience with augmented reality: I use Layar (scan a place and you can see pictures from users) and I've seen some nice applications like Peugeot's last App where you can take a picture of your phone in your environment and share it. I think augmented reality can become huge in the future.'

– M, Ireland

- -

'As mentioned above, I scan QR codes all the time: in fact I compulsively scan them whenever I see one!'

– M, Kenya

- -

'I've just started to scan QR codes and barcodes; this is a new experience to me. I think there are still many opportunities, not fully pursued, in this field'

– F, Brazil

- -

In their own words / Skeptics

'I have scanned barcodes, QR codes, used Google Goggles, Layar and other apps with AR. It is still hard for me to get use to these technologies because it does not give much value added (AR vs a map, I prefer a map).'

– M, Spain

- -

'These are nice gimmicks but nothing to exciting or interesting. Usability is still very basic.'

– M, Germany

- -

'I have installed and used quite a few AR apps but novelty aside I don't find that they actually enhance usage at the moment.'

– M, UK

- -

'I tried augmented reality but think it's not ready for prime time yet. I see many uses in linking digital and physical world, especially for information transfer. I think NFC or other location aware technologies are probably more useful than active "scanning" of some sort (unless you're only interested in one specific object).'

– M, Switzerland

Trend D: Mobile: The Bridge Between Online and Offline

In their own words / Indecision

'I think the beauty about a QR-CODE is that an offline code can be used online; and that the user decides to interact with it or not. The negative thing about it is that you kind of need to see the code, start a program, point your phone at it and accept the code. Quite a few steps… even though they are quite simple.'
– M, Netherlands

- -

In their own words / The future

'I wish restaurant menues and business recommendations will be more integrated and accesible - today I feel that there are too many places to go get the information and way too much spam to really get the "social" opinion.'
– F, US

- -

'I think the breakthrough with using the mobile as a monitoring device will happen when there are affordable and widely available accessories that use common protocols and do the specialist monitoring tasks (heart rate, blood pressure, blood sugar level etc) and use the phone as the control and reporting device. There are already some neat products out there, such as FitBit, but they all operate in a 'stand-alone' manner.'
– M, UK

- -

'Our digital and physical presence will merge. Today, people choose a device in the physical world that allows them to define themselves in the digital world. They are as cognizant about their digital image as they are about their physical image. - I would love to be able to have an application that acts as a concierge: book my flights, hotels, taxis, pay my bills, book restaurants, alert me when there is a special occasion, and at the same time it's able to figure out the best deals by hooking into groupon, etc.'
– M, UAE

- -

Trend D: Mobile: The Bridge Between Online and Offline

Adopted Technologies

http://bit.ly/dgDrwG (Google Goggles)
Goggles allows users to search the web using pictures taken with their smartphones

www.layar.com
Augmented Reality tool that displays digital information in the user's smartphone's field of vision

http://questvisual.com/ (Word Lens)
Translates text from one language to another using a smartphone camera

www.stickybits.com
With Stickybits users can scan barcodes to check reviews and recommendations on based on their favourite products

Trend E: Digital Wallet and mCommerce

Digital Wallet and mCommerce

A hot topic for discussion within the Homegrown community, and a strong indicator of regional differences, was mobile commerce, payments and the digital wallet. Whilst more mature smartphone markets like Europe and North America are on the cusp of change in terms of mobile finance and payments, the community recognised that countries such as Kenya (through its SMS money transfer service M-Pesa) and Japan (already up to speed with NFC) have long been happy to handle money through their handsets.

Why the reticence up until now in markets across Europe and North America? With banks on every city street corner in these regions, it might be a question of necessity. The convenience of the SMS transfer system in Kenya called M-Pesa far outweighs going to a bank. Japan, with a more widely deployed NFC infrastructure, has benefited from consumers being more accustomed to dealing with financial matters and making purchases using their mobile.

But with wireless payments systems set to become commonplace the world over (Google has launched Google Wallet on selected Android handsets and with certain retail partners), we wanted to know what would motivate people to rely more heavily on their handsets as a personal finance tool in future.

Their answer? For most Homegrowners, convenience is king – as well as the prospect of having more room in their pockets and bags. Being able to dump the wallet, often a bulging repository of loyalty cards and plastic, in favour of their phone is seen as a major plus point, helping them to streamline their lives.

Leave The Wallet At Home

In-store transactions and personal financial management were two key uses that Homegrowners explored in detail. Daily purchases for non-substantial amounts were the most frequently mentioned usage type – contactless payments through mobile for marginal habitual transactions like snacks and drinks, rather than special occasion purchases, frequently cropped up. Few of the community described their idea of mobile commerce as an extension of typical internet shopping – the focus throughout was convenience over experience, incorporating the in-store context rather than replacing it. Scanning barcodes to check prices with apps such as Barcode Scanner and PriceGrabber was a behaviour highlighted by a number of members, as they sought the best price possible at the point of purchase, or simply sought more information about the item.

Trend E: Digital Wallet and mCommerce

Mobile Money Management

Perhaps most interesting though was the potential seen in more serious utilities like mobile money management and bill payment. The capability of smartphones to deliver detailed real time information, as well as to make downtime productive is clearly something that can benefit busy lives. With people juggling more transactions directly through their accounts than ever before, taking the time to analyse and understand our financial situation at any point can be a challenge – convenient mobile tools and payment systems for things like utility bills and even taxes would be widely welcomed.

Whilst enthusiasm for these types of tools was generally positive, the members didn't simply throw caution to the wind. They want verification and authentication systems, encryption and security in place. Combining these demands with the benefits of convenience that the Homegrown members believe are clear, will be key to mobile finance success.

Key takeaways and implications

- Convenience is king. Homegrowners aren't seeking immersive mobile shopping experiences through their mobiles unless they are useful or add value – ultimately, they want simplicity through seamlessness, security and in-store tools that help them to shop smarter.

- Digital clutter frustrates users just like physical clutter. Points and loyalty schemes are loved, but it should be recognised that the more there are, the less they're likely to be appreciated.

- People want to make time to understand and manage their financial situation on the move, so building contextual tools to help them to do that is vital.

- Consumers will need tools, security and processes to reassure them that if they lose their mobile their details, identity and other sensitive information and assets will be protected.

Trend E: Digital Wallet and mCommerce

In their own words

'Mobile payment makes my life easier and keeps my wallet thin. Japanese market has already developed differently from the rest of the world because the mobile has been the main way of accessing the internet for a long time while PC has been in the US and Europe.'

– F, Japan

- -

'Expensify: handy if you're travelling and if you want to keep all the receipts in on place (found on mashable).'

– M, Ireland

- -

'Barcode scanner is a cool tool for checking goods offline and comparing them with online deals, love it.'

– F, Germany

- -

'I would like to see more apps that simplify my daily life on the go: paying bills, accessing online banking, viewing credit card transactions, and so forth. I am traveling all the time and the more my life is simplified the better.'

– M, UAE

- -

'I think the UK/US are actually behind places like Africa where they have mobile payment systems like M-Pesa. Developing countries are skipping desktop internet in favour of mobile Internet.'

– M, UK

- -

'An embedded master loyalty card would be great, I wouldn't have to carry around 10 different loyalty cards. In Japan every store seems to want you to register as a customer and get a loyalty card. Let me easily share some of my information and register in one swipe and click (or something like that).'

– M, Japan

- -

'The idea is to tell people we don't need to be dependent on so many different things, just one thing - instead of many little gadgets (which are stealable, loseable and breakable). So it will minimize the worry you have to one device.'

– M, Singapore

- -

I would like an App that could sync with my bank account when I buy something cause I regularly follow my expenses and there is nothing that is fast and that would be easily synced with the software I use.'

– M, Ireland

- -

Trend E: Digital Wallet and mCommerce

Adopted Technologies

www.google.com/wallet
Google's NFC-based solution to help people pay for goods using their smartphones

www.pricegrabber.com
Users can scan barcodes of products in shops to find the very best prices available

www.expensify.com
The Expensify application helps business people enter cash purchases and upload receipts on the go

http://bit.ly/r4kPcX / M-Pesa
SMS based banking service popularised in markets such as Kenya

Trend F: Health and Wellbeing

Health and Wellbeing

How reliant will we become on our mobiles in the future? Being able to contact people, entertain ourselves in downtime and even manage our finances is one thing - but some members of our Homegrown community also explored how mobile could provide them with a better sense and understanding of 'self'.

This use of mobile phones currently combines the trends of data visualisation with growing interest in monitoring multiple aspects of our day-to-day lives. Whilst this behaviour was more niche amongst members than some of the others explored in this report, its emergence points towards an even more personal relationship between users and their smartphones. Why? Because our handsets could become home to in-depth personal physiological and behavioural data.

The data can be used to generate charts and graphical representations of our behaviour, leading to a greater knowledge and understanding of our bodies and lives. As Gary Wolf, contributing editor at Wired magazine and co-founder of Quantified Self (http://quantifiedself.com), believes, we can use this information forself-improvement, self-discovery, self-knowledge. In short: 'To act more effectively in the world we have to get to know ourselves better.'

Opportunities already exist to monitor activities and feelings such as spending, mood and symptoms and, as sensor technology becomes more sophisticated and less intrusive, people will be able to monitor themselves increasingly accurately across more and more aspects of their lives.

Creating a Quantified Self
Amongst the aspects of life already being measured by the community members were sleep patterns (using applications such as Sleep Like An Droid, Sleep Cycle, and Sleeptimer) and exercise performance, using apps like MyTracks and CardioTrainer to measure routes and speed of running or cycling with data stored on the cloud and accessible on the one personal device that is always connected and always with us: our mobile phone.

Other members were keeping detailed diaries of every meal, snack and drink taken, in order to better understand their diet, count calories and achieve personal goals. One member referred to the use of a set of scales (made by Withings) that records their measurements and hosts the results on the internet, allowing them to create time-based analysis and as a result track their progress.

This shift in the use of smartphones indicates a change in perception, where the device is now viewed as having a 'haul in' role with regards to gathering data, rather than exclusively 'reach out' uses.

Trend F: Health and Wellbeing

Sickness to Wellbeing

As well as using their mobile phones to haul in data, a number of members within the community were using their handsets to provide them with nudges towards better health and wellbeing, using apps such as DrinkingWater, MyCalmBeat, and Livestrong Calorie Counter. These types of application are currently used to gently remind users of behaviours or actions – such as drinking more water, using breathing exercises to control stress and eating more healthily. At this stage the personalisation of the advice they offer is minimal – but their existence points towards a future where our handsets could be more frequently consulted for personal medical information and advice.

Whilst online hasn't bought about the predicted revolution in health care that some predicted it would, could the mobile be the catalyst to transform it in the future?

Key takeaways and implications

- With a number of Homegrowners taking part in this type of behaviour, exploring new ways of exploiting the personal and always on nature of smartphones is set to continue.

- Users are interested in gaining information and data about themselves, as well as receiving advice that can gently help or remind them to be more healthy.

- The applications referenced by the community centre on simple functionality: regulation, reminders, performance tracking and event logging. Whether people would like more complex outputs from their mobile regarding health remains to be seen.

Trend F: Health and Wellbeing

In their own words

'I use Cardio Trainer on the phone and monitor distance walked/jogged not just when I am working out but at all times. I also use a food logger to enter (roughly) meals eaten in a day. The best part about this is I can sync it with my laptop so I don't need to enter info through my phone unless I have to.'
– M, Singapore

- -

'Life activities tracking" is my name for this nebulous type of activity I use my phone for. I use the Google-created My Tracks app to monitor my cycle commute; I could see improvements in the key numbers over time and it fit with how I was feeling. Was I tired and having a bad cycling day? I knew what the app was going to tell me before I even checked. Another example is Sleep As An Droid which monitors sleep patterns. It can wake you up (gently) before your alarm is due as it detects light-sleep. This is supposed to be the best moment to wake and not feel groggy.'
– M, UK

- -

'Tracking my health or wellbeing is a good idea that I will look into it and see how I can get it done with currently apps. I never thought about a mobile innovation that would improve my quality of life. If I would suggest or create one now, it would be a plug that I just put a drop of blood and I gives me all the information about my blood at that time.'
– M, Brazil

- -

'I have used my mobile to monitor my time and distance when out walking or jogging though never for tracking things like heart-rate or blood pressure.'
– M, UK

- -

'Not for cardio or nutrition monitoring, Yes for route tracker Physical/digital presence link in future: the smartphone will act as a sixth sense, providing all sorts of information about surrounding environment. In terms of health we'll have a virtual representation of ourselves in the cloud (with all health related data) that can be accessed through any device.'
 – F, Ireland

- -

'I exercise a lot and try and eat healthily so an app that could track my exercise and food intake in the background and fully automated would be worth a significant amount to me - don't have the time to input much data but my phone is always with me so is the obvious place for this.'
– F, UK

- -

Trend F: Health and Wellbeing

'So basically have my biometrics in the phone, and have my phone help me decide if the produce I'm consuming is right for my body type. Another app I'm waiting for.'
– F, Singapore

- -

'A couple of apps you could try (easy, low maintenance ones!) would be CalmBeat (relaxed breathing), Sleep Cycle (monitors your sleep patterns) and Pedometer (tells you how much incidental exercise you do each day).'
– F, Australia

- -

Trend F: Health and Wellbeing

Adopted Technologies

http://mytracks.appspot.com
MyTracks helps users record heir GPS data and view stats such as time, speed, distance and elevation

http://bit.ly/hgXqzU (Sleep As An Droid)
Monitors the user's sleep patterns and wakes them up at the best time in their sleep cycle

http://bit.ly/g9Cqdb (MyCalmBeat)
Helps to reduce stress and increase focus by regulating breathing

http://bit.ly/hskRZf (DrinkingWater)
Drinking Water helps remind users to drink water at regular intervals throughout the day and monitors hydration levels

Review

Smartphones are smart, and they're going to get smarter

The Google Homegrown Community was encouraged to explore and discuss how they use their mobile handsets, and how they've observed other people using them. Six emergent trends have been outlined in this white paper: some highlighting universal or common global behaviours, others demonstrating regional nuances and differences.

The members' experiences with new mobile technologies, platforms and applications suggest that handsets will be at the heart of any task where they can reduce friction and help solve problems; from banking and shopping, to exercise and dieting. They can do this by blurring the digital and physical worlds, helping both to interpret each other: such as translating signpost when travelling abroad, or providing product information in store simply by scanning the barcode. For our community members, convenience is king, rather than immersive experiences.

Access to these types of tools and opportunities is changing behaviour. An array of communication channels has encouraged Homegrown members to sort and categorise their expanding social circles, helping them to take better control of the way people can contact them by building layers of privacy, and creating new rules for engagement and communication codes.

Meanwhile, in addition to the 'always on' culture that has grown out of the use of mobile, an 'ever active' trend is emerging: Homegrown members constantly task their handsets and rely on them to entertain, retrieve information, to process and even enhance the television experience: Rather a sixth sense than an extra limb, our phones are becoming our primary 'go to' resource.

The experience and enjoyment of our local environment is being radically altered by mobile too. The community offered a glimpse into their experiences of the mobile web, revealing its value as tool for discovery and opportunity. Services that offer depth over breadth, including detailed information and specialised local utilities, were strongly advocated.

Using the smartphone as a harvester and hub for all sorts of personal data, as some of our Homegrown members do, will also rapidly increase. Monitoring of physiological reactions and behaviour should help to improve health and wellbeing – potentially one of the most radical evolutions of the mobile yet.

Google Homegrown. What happens next?

Partners

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