JAMES CRABTREE, MAX NATHAN AND DR. SIMON ROBERTS

MobileUK
Mobile Phones and Everyday Life

iSociety

Contents

Foreword – Neil Holloway

NEIL HOLLOWAY
MANAGING DIRECTOR,
MICROSOFT UK

I believe that technology has the capacity to fundamentally improve people's lives, and improve the world in which we live. We are now two years into what my company have called the 'Digital Decade'. We think that by 2010 a combination of hardware and software innovation with broader social trends will change the way computing fits into our society. Mobile technology is a central part of this vision.

We are confident that new mobile devices – from smart phones and PDAs through to TabletPCs and beyond – will begin to change the way we understand computing. More importantly, we think it will spark fundamental advances in the way we live and work.

But, as this report outlines, visions of a mobile future must be built on a firm understanding of the present. The way people use mobile technology at the moment matters just as much as future technical possibilities.

Because of this, MobileUK is a helpful reality check. Computer companies have no monopoly on wisdom, and we must be prepared to learn from our customers.

We must be aware that technology for its own sake is never as powerful a tool as technology that makes sense in the everyday life of a user. We must constantly make sure that the tools we provide are useful, affordable and comprehensible. Ideas like those contained in this report help us meet this challenge.

Through Microsoft's continuing work with The Work Foundation, and in particular by supporting the iSociety project, we make a continuing commitment to investigate the real impact of new technology on everyday life, both today and in the future. ◼

Executive summary

Fifteen years ago, mobile phones were the preserve of a few City traders. Today, over 75% of Britons have a mobile phone, as do over 90% of young people. Mobile phones have gone from being widely derided to something many of us can't do without. What happened? How is this most pervasive of technologies changing the way we live and work? And what does the future hold?

Mobile UK sets out to answer these questions. It uses original ethnographic research to provide perspectives on the way British people use mobile phones in everyday life. This material is used to provide a rich account of how people use mobiles phones. It is structured as follows. Chapters 1–3 introduce the story, issues and facts of mobile phones in the UK. Chapters 4 and 5 present our main research and findings. Chapter 6 concludes by examining what these findings might mean for future mobile telephony products and services. The following is a summary of the main arguments and findings.

What happened?
The market for second-generation mobile phones appears to be saturated. However, with 3G shortly to be introduced and Wi-Fi creating waves it is more important than ever to understand Britain's mobile culture.

The current plateau followed a spectacular 'tipping point' between 1998 and 2001, when British ownership rose from 27% to 73%. This was caused by a combination of lowered cost barriers to entry, improved phone design, the introduction of pre-pay tariffs and powerful marketing campaigns. It is worth noting that average phone bills are currently only £19 and that three-quarters of users remain on pre-pay tariffs.

Why are mobile phones so popular?
This 'tipping point' can be understood as the result of technological, social, economic and cultural factors. However, they are only part of a larger story. The impact of new technology needs to be understood as a dynamic process between the intentions of designers and manufacturers, and the way in which users choose to experiment, modify and improvise with it.

Mobile phones progressed quickly from a ridiculed to necessary technology. We can understand this transition in two steps. Firstly, perception of need leads people to adopt mobile phones. Secondly, adoption itself creates further needs as behaviour changes. The move from need to reliance is particularly marked because mobile phones express social network effects. As more people adopted mobiles, so it became more acceptable and more necessary for non-owners to have one too.

Yet even this does not fully explain why groups of users use mobiles differently. A false image of a 'mobile society' is often created by research that concentrates only on elite groups of heavy users, particularly young urban professionals, mobile workers and teenagers. A more important step in the move to mobile is the rise of 'small talk'. Beginning in the fixed line era this is a process by which small talk (either as in brief conversations, or as in 'chat') has become a more socially acceptable form of conversation. This change happened in an environment where the total amount of phone conversation increased dramatically. Through regulation and then competition, the price of phone calls has fallen dramatically. The success of mobile phones piggybacked upon both of these trends.

Mobile phones and everyday life
Mobile phones have penetrated most aspects of everyday life. To find out what effects they might be having on the way we live and work, iSociety spent time with four individuals, their families and friends, examining their mobile habits. We base the following on our observations.

Between love and hate
We discovered that people have strong and sophisticated opinions about their phones, and were highly aware of their benefits and costs. All of those we talked to showed a pragmatic approach to their phones. Their value came from their utility, and as such they are best viewed as tools: devices for family management, for use during work, or to ensure efficient communication.

Controlling your phone
However, this pragmatism was coloured by an awareness of the positive and negative ▶

Executive summary

effects of mobile phones. Contrary to the view that some people adore mobiles, while others reject them, we found a balanced view depending on situation or circumstance. Pervasive mobile phone use increases our ability to communicate, but this cuts both ways. It becomes important to control mobile phone use.

We discovered that users found ways to control their phone, and this meant balancing the benefit of 'freedom to contact' with the fact that others were 'free to contact you'. However, balancing 'freedom from' and 'freedom to' was often difficult. For most people this is still 'work in progress'.

Mobile manners

In particular, users are alive to the intrusiveness and nuisance value of mobile phones, and its potential inappropriate use. The potential downsides are managed by the invention of 'mobile manners' which prescribe appropriate behaviour. Many of these conventions and etiquettes are still forming. Mobile manners are up for grabs.

Britons seem to be evolving systems of 'considerate communication', rather than 'conspicuous communication' observed in previous years and in some other countries. This very British solution is in marked contrast to mobile behaviour elsewhere: in New York, mobile phones are now banned in public places.

Conversation: less is more

All the adults we encountered sensed that mobiles could result in talk for its own sake, and this was not always seen as positive. They expressed this as a matter of economics (talk isn't cheap), irrelevance (talk is tenuous) and disturbance (talk is trouble). They also pointed to the fact that mobile talk is not always quality talk.

Controlling cost

Cost remains a highly significant issue for the majority of users, and often defines their relationships with their phones and networks. Mobile phones are expensive, and users worry about how much they are spending. Users stay with pre-pay phones precisely because it allows control over expense, and resists the temptation to talk.

Mobiles are also a tool for family finance; we observed children being assigned domestic chores in exchange for money to fund their mobile phones. We observed a number of strategies for reducing cost, including relying on employers, using the phone as a pager and ensuring that talk time minutes were fully utilised.

Mobile families

Modern families use mobile phones as tools for household management and to tie together loose pieces of life. Mobile phones support the ability of families with children to move between independent behaviours and more supervised activities. They allow children to be free of parental supervision and yet allow parents to re-establish control at any time. For parents worried about letting children go out unaccompanied or at night, the 'elastic control' mobiles afford is significant and reassuring. Ultimately, reports that family conversation is dying appear unfounded. Our survey evidence and the findings of our ethnographic research suggest that conversations within the family are fuelled by the use of mobiles.

Mobile symbolism

Users are aware that mobile phones are symbolic, saying something about them before they are switched on. This is partly because they are public technologies, visible to others, and partly because they are customisable.

Although mobile phones do act as status symbols, our research suggests that having the latest new model is becoming less important. Indeed, mobile symbolism is not necessarily positive. In one example, a plumber we talked to suggested he could not get an MMS Picture Phone because his clients would assume he was earning too much money.

What's next?

What does all this suggest for future products and services such as 3G, smartphones and so on? Since the impact of technology on society hangs on how consumers' needs change, it is very difficult to predict what they will do. Nevertheless, based on what we know, it is possible to make broad predictions about what type of future mobile services should succeed and what will be important. ▶

Executive summary

Steady as she goes

The sort of explosive mobile telephone adoption seen in the late 90s is unlikely to occur with 3G and future mobile provision. Instead, the move from the present generation's mobile telephony to the next is much more likely to follow the gradual upgrade from narrowband to broadband.

Voice remains the killer app

Voice telephony is likely to remain the killer application for next-generation mobile phones. Although mobile ownership will rise extremely gradually from now on, current trend evidence gives no reason to think that the rise in call volume seen during the course of the 1990s will stop. This presents a problem: if most people still use mobile phones for voice calls, why upgrade? Many consumers do not use many of the functions available on 2G phones, suggesting that they do not think they need 'advanced' services.

Money matters

These problems are compounded by customers' continued sensitivity to price. 3G services will suffer if they are not priced competitively. One particular problem is getting users to move beyond pre-pay. Many advanced services are not available to pre-pay customers, and our research suggests that the industry will find it difficult to wean users off pre-pay.

What will succeed? Five suggestions

We suggest that future mobile services will succeed to the extent that they achieve five goals:

~ They must be closely associated to specific tasks and functions which users will find valuable. For example, picture messaging is a good way of sending complex information quickly, or ensuring a visual record of an event. Paramedics, tree surgeons, estate agents and traffic wardens should all find it useful. Future services that help us do what we already do better are likely to be popular too.

~ Services that exploit social network effects are also likely to be popular. The popularity of both mobile phone calls and text messages is routed in their ability to connect one user to another. The success of ring tones and screen savers has a lot to do with the ability to show, share and pass on. Thus the mobile industry is well advised to ensure that its future services are allowed to share such 'social content'.

~ Future phone services will succeed only if they are competitively and clearly priced. Most mobile users are sensitive to cost. By pricing new products and services at business users and ABC1s, mobile phone companies are probably missing much of their market.

~ Future services are likely to succeed to the extent that they target users' mobility, and specifically the times and places in which they are mobile. For instance, news services on a mobile phone are not a compelling proposition if a user can get news at other times. Yet certain services based around time (videos of football goals at the end of the match) or place (the ability to buy cinema tickets, or to get transport information) are much more plausible.

~ Finally, any services that tempt users to interact or transact using their phones will have to be simple and work properly. M-commerce m-ploded almost as quickly as users decided that 'WAP was crap'. Any future attempt to introduce advanced services before they work, to consumers with already high expectations, is likely to fail just as quickly.

As our research into the past and present of the mobile phone suggests, the current practices of the everyday user give the clearest indication of the likely future of mobile devices and applications in the UK.

Chapter 1
Introducing MobileUK

Easy to move, movable, loose not firm. Pliable, nimble, flexible, agile, swift and rapid. In a negative sense, inconstant, fickle and changeable. **Senses of the Latin word 'mobilis'**

On 10 March 1876 Alexander Graham Bell became the first person to transmit human speech electronically. The transmission was accidental: Dr Bell spilled acid on his trousers, and his resultant 'cry for help' was heard by his assistant over the audio-telegraph experiment on which both had been working.[1] The telephone was born. It took a decade and a half before the inadvertent discovery of that day first made its way onto the open market, and a further 67 years to reach three-quarters of American homes.

Mobile phones in the UK have now reached roughly the same level. Almost eight in ten British households have one;

almost eight in ten individuals own one, as do almost all young people. In under a decade mobile phone ownership has progressed from risibility to normality. And ever-wider ownership has come with ever-wider scrutiny: mobiles have become one of the most talked about consumer items in a generation. But what are the social consequences of this mobile revolution? Do mobiles change the habits of their users? Are we as a society now addicted to casual conversation? Have these small devices really made much difference to the way most of us live and work?

In this report we use ethnographic research to provide new perspectives on

the way British people use mobile phones. (Ethnographic research focuses on understanding and interpreting people's behaviours and attitudes within the context of their everyday lives.) In so doing we hope to provide answers to these questions. *MobileUK* takes as its starting point a desire to understand the use of technology in everyday life. A previous iSociety publication, *RealityIT: Technology in Everyday Life* (see Box 1), began this research by looking across the spectrum of new media used in British homes and offices. Mobile phones, by virtue of their being present in more homes than any other type of new technology, make the ▶

Introducing MobileUK

next logical step in this investigation. We believe that lessons learned from the extensive roll-out and use of mobile phones will be valuable in understanding the impact of other new technologies.

Yet the social impact of mass mobile phone usage remains difficult to pin down. Those who use them certainly find them useful, with around one in four considering their phones 'essential' to their lives, and over half thinking them 'important'.[2] Indeed, most recent figures suggest that 'two in five people (38%) in Britain say they cannot do without their mobile phone. This contrasts with only one in five (19%) who say they cannot do without their desktop computer, internet access (18%), email (17%) or text messaging (15%)'.[3] Clearly, some British people are beginning to rely on their phones. As the *Economist* argued recently: 'It looks increasingly as though the "personal computer" was a misnomer. The truly personal digital device today is the phone.'[4]

But despite their popularity, the wider social consequences of mobile phone usage remain uncertain. It is not clear that owning a mobile phone, in and of itself, significantly changes the lives of those who use it. As we will show, patterns of mobile use vary greatly among the different groups of people who own one. Although a large majority of the country now owns a phone, we are not all 'mobile' in the same way. These varying usage patterns lead to

problems in how we understand the impact of mobile phones. Put simply, when researchers and commentators think about the consequences of mobile technology they tend not to think about all types of mobile users. Certain groups of users – young urban professionals, mobile business people, and teenagers – attract disproportionate attention because they use phones in new and interesting ways. Certain other groups, particularly those with less striking behaviours, tend to be forgotten.

The belief that some mobile phone users display habits typical of all or most mobile phone users has created a misleading picture of a 'mobile society'. This misunderstanding was partly responsible for the unsuccessful attempt to launch Wireless Access Protocol (WAP) as a type of mobile internet service. In this case the mobile industry misunderstood how their customers used (or wanted to use) mobile phones. They assumed that most normal users would behave in the same manner as a small minority, and would speedily take up the opportunity to access internet-style services on their phones. This misapprehension proved costly and embarrassing.

Without a deeper understanding of why we use mobile phones, and thus why we might use more advanced mobile technology in the future, such expensive mistakes are likely to recur. A mobile

industry seeking to launch next-generation mobile services, and a government attempting to regulate mobile telephony in the interests of consumers, require a more refined worldview of mobile phone usage. In an attempt to address this problem *MobileUK* investigates everyday uses of mobile phones. Building on the qualitative and quantitative research undertaken for previous iSociety publications, this report uses ethnographic techniques to examine how mobile phones are perceived, made use of and valued.

Why everyday life? Because average users and commonplace uses matter a great deal in attempts to understand the impact of using consumer technology. Any picture of the impact of a technology on society is incomplete without an understanding of the everyday situations in which technology is used. More importantly, society as a whole will not change fundamentally around any given technology until it reaches some level of wide density among the general population. Mobile phones have reached this point, while many other types of mobile technology remain niche products used by few people. Technological innovations rarely succeed unless they persuade a significant number of people that they improve upon a previous way of doing things. Early users of technology matter, but visions of a network society ▶

Introducing MobileUK

are predicated on taking everyday users along for the ride.

Adoption of the current round of second-generation mobile phones has basically stalled. Consequently the mobile phone industry has moved its efforts from acquiring new users, instead putting its efforts into persuading existing customers to use their phones more. The measurement used to see how much customers are spending – known in the industry as Average Revenue per User, or ARPU – is now the most important criterion of success.

But even this is beginning to change. Just as second-generation phones have reached a plateau a new generation of mobile technologies is coming onto the mass market. Phones equipped to send pictures, play music, or act like personal digital assistants (PDAs) are already available in shops. Picture phones, seen by some as the 'next big thing', were advertised extensively during Christmas 2002. Third-generation handsets are predicted to join them on shelves sometime during 2003. Wireless broadband internet, using standards like Wi-Fi, is increasingly

popular in America. Large technology companies are already responding, positioning themselves to lead the converged market in mobile information and communication technology (ICT).

Over the next two years the UK will begin to see this next-generation mobile technology blur the distinction between the 'I' and 'C' in ICT. These changes will create new types of mobile devices and deliver different types of services. They will also need to persuade consumers to change their habits, and use mobile phones in new ways.

In order to understand how this might happen, and how quickly, this report seeks a greater understanding of how some ordinary consumers use and think about their current phones. *MobileUK* aims to explain the importance of being mobile, and to gain a better understanding of present mobile phone use to provide insight on what might happen in the future. ▶

Introducing MobileUK

Box 1: RealityIT Clusters

* The last iSociety publication, *RealityIT,* used statistical analysis to split UK technology users and owners into three broad attitudinal groups. *RealityIT* argues that Quiet Pragmatists – the slow adopters, the practical users, those who use technology for 'everyday' reasons – are more important than commonly recognised. They define the middle ground, and they need to be convinced that IT is 'for them'. When everybody uses ICT all the time, most people will use it in the same way as the Quiet Pragmatists. The challenge is to understand this group. Although these clusters were not used as selection criteria for the ethnographic research in this report (see Chapters 4 and 5) they did inform the way we analysed the results.
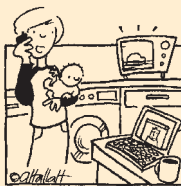
1. Enthusiasts (27%) are characterised by a fun, creative, and playful attitude to technology. They are self-assured using technology, find it exciting, tend to like it for its own sake, and seek out the latest gadgets. They see technology as important to their lives, are confident with the speed of change and see it as a generally positive force.

2. Quiet Pragmatists (42%) are the ICT market's muted middle ground. Their opinions are measured. They own and use ICT products in a practical manner, seeing them as tools to be picked up when needed, and dropped when redundant. Their reactions are rational, rather than emotional and heated. They have neither the excitability of the Enthusiasts nor the ennui of the Aversives. They are a silent, sizeable minority, and their reaction to change is critical to the diffusion of ICT.

3. Aversives (31%) are sceptical about the benefits of ICT. Aversives have lower levels of confidence, feel uneasy about the speed of change, and react against a perceived culture of pervasive communication. ■

Chapter 2
A RealityIT check

The technology industry has a longstanding sales pitch. When everyone has some gadget or other the lives of its users will change. These changes are assumed to be positive. The mobile industry is no different, presenting a story of universal mobile emancipation. Ordinary people, armed with a mobile phone, will be free to control their communication, liberated from the tyranny of phones plugged into walls. A revolution in lifestyle, replete with mobile working and living patterns unseen in the fixed-line era, ought to be the result.

But it is still unclear whether changes of this magnitude have occurred. By contrast, when eight out of ten people owned cars the implications were clear. The mobility afforded by cars changed the shape of cities, altered patterns in the labour market, and transformed patterns of shopping, leisure and travel. Of course this analogy is not perfect. Automobiles provide an entirely different type of mobility than that offered by mobile phones. They were also adopted over decades, not years. But the basic point remains: some technologies have conspicuous social and economic consequences, others are less obvious.

As the smoke clears, the question is clear. More than three-quarters of British people now have mobile phones, but has anything of significance changed? Compared to the rise of cars, mobile phone culture is surprisingly subtle. Some users of mobile phones do change their work and lifestyles by virtue of communication on the move. But the type of change tends to be incremental. One of Britain's leading authorities on mobile technology, the Digital Research Centre at the University of Surrey, concurs:

'Mobile phones are the most successful computer-based consumer product of the age, and yet very little is known about how mobile technology is changing the way people interact and co-operate with each other, and how this change can be analysed.'[5]

Those changes that are visible occur in many small ways, mostly routed in the patterns of everyday life experienced by individuals, and their friends, families and work colleagues. To begin to establish what these changes might be we need to look at the facts. ▶

A RealityIT check

The history of MobileUK

Before 1985 hardly anyone in the UK – or the world – had a mobile phone. Data from iSociety's *RealityIT* survey put ownership at 74% of Britons.[6] Latest figures from the UK telecommunications regulator OFTEL show a slight rise to 76% of British adults.[7] This translates to nearly eight out of ten households,[8] or a grand total of just under 47 million mobile subscribers in the UK.[9] One way or the other, mobiles are part of everyday life. How did this process begin?

Mobile phones as we know them first appeared in the mid-1980s. Large and cumbersome, they were treated with scepticism, and often contempt. These first generation phones were seen as unwieldy, expensive and unreliable; status symbols used solely by wealthy businessmen and aspirant yuppies. By the end of the 1980s, mobile phones seemed confirmed as niche objects – playthings for executives, or business essentials for upscale mobile professionals. Less than 1% of the UK population had a phone, and the recession of the early 1990s dented that figure further.

In 1991, the European Union agreed and rolled out a common digital standard for mobile telephony – GSM. This has gone on to become the dominant standard for mobile phones worldwide. In the UK, user numbers stayed around the one million mark through to 1993, only beginning to rise at the end of the early 1990s recession. By 1996, there were over five million mobile phone owners in the UK; the next year, almost seven million.

This steady growth then reached a tipping point. Between 1998 and 2001, mobile phone take-up skyrocketed. Numbers rose from just over 9 million in 1998, to nearly 15 million in 1999, to just over 30 million in 2000 and almost 45 million in 2001. By mid-2000, official figures showed that more than 50% of adult Britons had mobiles for the first time. By 2001, that had risen to 73% of the adult population.

Explaining mobile popularity

By any standards this is an extraordinary change. It is partly explained by the relative familiarity of the phones themselves: they are phones, but phones you can carry around. But this did not result in mobile phones becoming an immediate success. It took a decade and a half for them to become truly mass market. What explains this spread?

The adoption spike of the late 1990s was caused by a combination of economic, social and technical factors coming together at the same time. Some of these factors are easy to identify. The first is cost. Types of technology pricing can be broadly characterised into two types: those with low start-up costs, and those with high start-up costs. PCs have high start-up costs, as they cost at least £500. Broadband, as a service, also has a relatively high start-up cost, in as much as users generally have to pay an installation fee. Mobile phones, at least for some models, are much more affordable.

The introduction of pay-as-you-go contracts lowered this start-up barrier still further. Such contracts were launched in 1998, exactly at the time mobile phone ▶

Table 1: UK mobile penetration			
Year	Number of subscribers (millions)[10]	Share of population (%)	Share of Households (%)
1998	9.02	27	N/A
1999	14.88	33	N/A
2000	30.5	54	68%
2001	44.7	73	79%
2002	46.9	68 (76)[11]	80%
SOURCES: OFTEL, FEI			

A RealityIT check

ownership began to rise substantially. Around the same time a number of companies began promoting free or heavily subsidised handsets. At least one high street bank offered free mobile phones to students opening new accounts. (Despite tight budgets, students tend to be heavy phone users: according to one survey, they typically spend £300 to £400 a year on calls and services.)[12] More broadly, providers offered a wide range of contracts and ways to pay, putting the mobile within the range of most budgets.

This low start-up cost meant that people could also buy mobile phones for other people. People began giving mobile phones to friends, their children, and to elderly relatives. This in turn introduced the phenomenon of mobile phones as gifts. Between 1998 and 2000, nearly 13 million people bought phones, or received them as Christmas presents (see Table 2).

Image also played a part. During the latter half of the 1990s phones shrank, their battery life increased, and their looks improved. For some groups phones became a fashion item, particularly as operators introduced desirable designs and smaller models. Manufacturers now offer a range of handsets targeted at particular consumer types, including extreme high-end models like the $20,000 Nokia Vertu range.[14] Phones also communicate before we switch them on, and mobiles became an attractive proposition precisely because they allowed users to express and reflect their identity much in the same way as decorating a house or driving a car. SMS, plan-switching, ring tones, fascias, keypads and aerials are popular aspects of mobile adaptation and customising.

It is worth noting that enthusiasm for mobile phones has also survived two prominent public scare stories. In the first instance anecdotal evidence of links between heavy phone use and cancer or brain damage received a very public airing. The official Stewart Report into mobile phone safety, published in 2000, drew no firm conclusions but urged caution, particularly in the use of phones by children. In 2002 the government launched a £7.4 million research programme in an attempt to settle the debate.

The health issue was then replaced with public concerns around mobile phone theft. Official UK figures estimate that more than 700,000 mobile phones were stolen in 2001. 28% of all robberies now involve the theft of a mobile: in London, that rises to 31%, and in Birmingham, 41%.[15] Much of this crime is committed by, and against, young people. The same study suggested that up to half a million 11-15-year-olds had phones stolen in 2001, with the most likely robber a male aged 14-17. There is a certain irony in this: many people buy mobile phones for reasons of safety, yet owning one increases your likelihood of being a victim of crime. ▶

Table 2: Number of mobile phones bought in the UK at Christmas time.	
Year	Number of units (millions)
1998	3.3
1999	4.5
2000	5.1

SOURCE: UK MOBILE NETWORK OPERATORS[13]

A RealityIT check

"The total volume of mobile calls for 2002 was 18% higher than the previous year, continuing a trend in rising call volumes across networks".

Beyond mobile phone ownership
Despite this adverse publicity there is no evidence to suggest that users have changed their habits (or given up their phones) because of fear of ill health or crime. Consumers obviously value their phones more than they fear their adverse effects. To understand why we must move beyond ownership, and instead explain what people actually use their phones for.
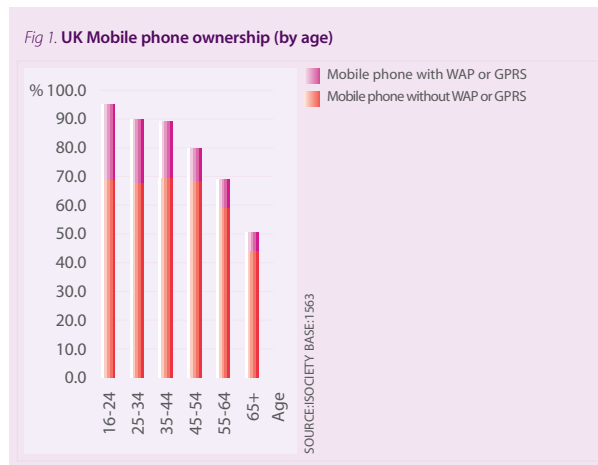
The latest data throws up interesting findings. First, although the number of phone owners continues to rise, the rate of increase is now substantially slower than a couple of years ago. It has almost stopped completely. However, it is important to distinguish between ownership and use. While ownership of mobile phones is slowing, consumers are still using their phones to make more calls.

The total volume of mobile calls for 2002 was 18% higher than the previous year, continuing a trend in rising call volumes across networks seen over the course of the last decade.[16] This matters because it is use of a mobile that might make a difference to the life of its user, rather than ownership. Those people who buy a phone but keep it barely used in a car or kitchen drawer are extremely unlikely to change their behaviour by virtue of ownership.

Second, basic economic realities still dominate mobile phone usage. At the time of writing, the average mobile phone bill remains only £19 per month.[17] Some 71% of customers remain on pre-pay contracts; with just a quarter of users paying monthly, while 4% have an all-in-one package. Mobile phone companies have tried to alter this, not least because those on

monthly contracts spend more than twice as much per month as pre-pay customers.[18] But they have been largely unsuccessful. A recent *Which?* report suggested that pre-pay customers could make significant savings by switching,[19] but pre-pay proves a difficult habit to break. Although they do not feature frequently in the media conversations, topping up, rationing and running out of credit are clearly a key part of mobile phone life in Britain. Third, low start-up costs and initially attractive pre-pay tariffs have made mobile phones a relatively classless technology. Compared to other ICTs, ownership is relatively consistent across different social and economic groups. Social class does remain an important divide at the extremes: 83% of those in socio-economic group A own a mobile phone, while the figure drops to ▶

A RealityIT check

Fig 1. **UK Mobile phone ownership (by age)**

- Mobile phone with WAP or GPRS
- Mobile phone without WAP or GPRS

% 100.0, 90.0, 80.0, 70.0, 60.0, 50.0, 40.0, 30.0, 20.0, 10.0, 0.0

16-24, 25-34, 35-44, 45-54, 55-64, 65+ Age

SOURCE:ISOCIETY BASE:1563

64% for the DEs.[20] However, income alone is not a good indicator of whether people will own, or use, a mobile. For instance, while households earning at least £30k spend almost half as much again on mobile phones per month compared to households earning less than £17.5k, those earning between £17.5k and £30k[21] spent less than both. Those living in affluent areas actually spend less on average every month (£18) than those living in more deprived areas (£19).[22]

Other differences can be seen in usage patterns, with higher-spending mobile customers more likely to be male, aged 15-34, and living in a higher income household. There are some differences in phone use by age, but they are less striking than one might expect.

Our *RealityIT* survey found levels of adoption remain well over 70% for those aged between 16 and 54, with phone ownership only dropping away in those aged over 65 (see Fig 1).[23] A recent ICM survey also suggested that parents' ownership had overtaken that of their children for the first time: 81% of those aged between 45 and 54 years now own a mobile phone, compared to 79% of those aged between 18 and 24.[24]

But this may depend on how 'youth' is defined: a MORI Technology Tracker survey found that 94% of 15-24-year-olds have mobiles.[25] Who are these different groups calling on their mobile phones? Overall, voice calls are made mainly to friends and family. Despite much discussion of the 'mobile work styles' and the importance of mobile technology in offices, less than a third of mobile owners use their phones to make work calls (see Fig 2 overleaf). ▶

A RealityIT check

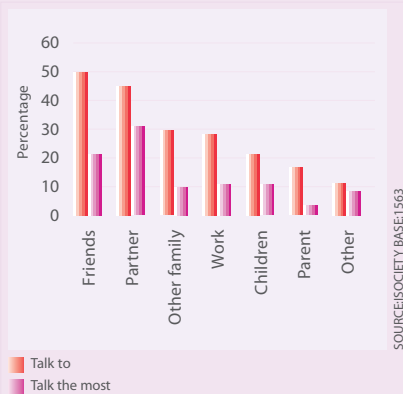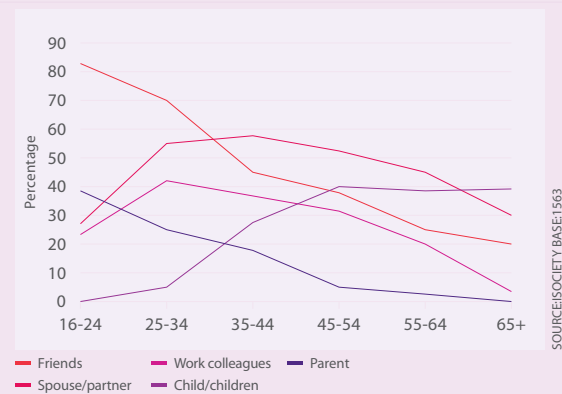Fig 2. **Phone calls made: who do mobile phone owners talk to?**

Percentage

Friends / Partner / Other family / Work / Children / Parent / Other

SOURCE:ISOCIETY BASE:1563

■ Talk to
■ Talk the most

Fig 3. **Changing patterns of mobile phone calls (by age)**

Percentage

16-24 25-34 35-44 45-54 55-64 65+

SOURCE:ISOCIETY BASE:1563

— Friends   — Work colleagues   — Parent
— Spouse/partner — Child/children

This picture of mobile phone calling is further complicated by context. People in different life stages use their phones for quite different purposes. While over 80% of 16-24-year-olds mainly call friends, those aged 25-54 call their spouses or partners more than anyone else. And as families form, calls to spouses and partners fall away as calls to children increase (see Fig 3).

This is most clearly shown in owners of retirement age, with those over 65 most likely to call their children. This shows that mobile phone usage reflects the life stages and situations of its users: as people change, so their use of a mobile
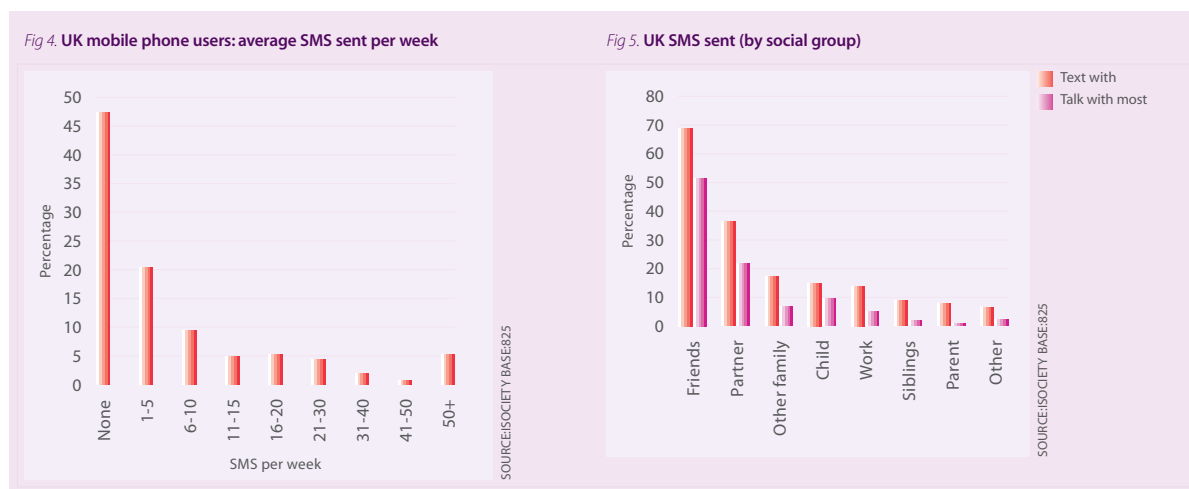
phone will change too. However, these figures are unlikely to remain constant, particularly as the current younger generation of mobile users age and take elements of their more extensive mobile habits with them.

SMS, or texting, is likely to be one such habit. It is increasingly popular. In December 2002 1.6 billion messages were sent in the UK, around 52 million a day,[26] rising from 30 million messages a day in May 2001 and 35 million a day in May 2002. The number of text messages sent daily in the UK has tripled in the past two years.[27] This recent rise reflects the fact that two out of three people who

send texts have started doing so in the last two years.

However, the rise of SMS is spread unevenly. Many people who have phones seem to use them as phones, nothing more. In 2002, our survey revealed that 47% of mobile users had never sent a text message. On the other hand, 13% send more than 20 a week (see Fig 4). That said, the texting habit seems to be catching. Looked at another way, our survey found that 53% of mobile phone owners had texted. Similarly, MORI research found that numbers of Britons texting had risen from 51% in 2002 to 63% by early 2003.[28] ▶

A RealityIT check

Fig 4. **UK mobile phone users: average SMS sent per week**

Percentage

SMS per week

SOURCE:ISOCIETY BASE:825

Fig 5. **UK SMS sent (by social group)**

Percentage

■ Text with
■ Talk with most

Friends, Partner, Other family, Child, Work, Siblings, Parent, Other

SOURCE:ISOCIETY BASE:825

Patterns of use among different age groups are similarly polarised. Older users tend not to text, with 90% of over-65s and 52% of 45-54-year-olds never having sent one. But 93% of 16-24-year-olds have texted. Texting also reveals a different reflection on the lives of its users. While mobile phones are used to contact friends, family, partners and work colleagues, texting remains largely a communication device between friends. Our survey shows that of those who text, 69% text friends: more than half of all SMS users text friends more than they do anyone else. Only a third text their partners (see Fig 5).

Thus, although anecdotal evidence suggests SMS is increasingly used to co-ordinate working life, our survey shows that texting remains something young people use largely to sustain social ties with friends. This is particularly true of younger users, where nearly 80% of 16-24-year-olds text friends but almost no one else. Patterns of use are broader but less frequent among older users. Those aged 35-44, and particularly those aged 45-54, use text infrequently, but to reach a range of different people (see Fig 6 overleaf).

Such different usage patterns are also visible among men and women. Women

are almost twice as likely as men to text children (19% to 10%), while men are more than twice as likely to text work colleagues (20% to 7%). Similarly, women are twice as likely to use the phone to contact children as men, while men are twice as likely to use the phone to contact people at work. In this way the technology appears broadly to reflect, rather than alter, a traditional gender role. ▶

A RealityIT check

Fig 6. **Changing pattern of SMS sent to different social groups (by age)**

SOURCE:ISOCIETY BASE:825

These figures confirm the ubiquity of mobile phones. But they are not sufficient to explain either their widespread popularity, or the way in which people choose to integrate them into their lives. A different approach is need to understand why and how users adapt their lives to mobile phone use. ◻

Chapter 3
Mobile technology in everyday life

In the recent film *Die Another Day,* James Bond used a Q-branch Sony Ericsson T68i in the course of defeating villain Gustave Graves. For Bond, as for the rest of us, mobiles are used to achieve tasks. To take the analogy further, there are several ways of reading the fact that 007 always has the gadgets he needs for his missions. It may be that the men in white coats always meet the unarticulated needs of 007. Alternatively, it could be that if Q does not provide Bond with exactly what he needs 007 would improvise his way out of any tight spot.

To put it another way, understanding how people adapt to communication technology can be understood in the same two ways. First, it might be assumed that technologists know best, responding to known consumer needs in the design of their devices and services. Second, users might make do with what they are given; creating useful applications from devices that may not have been specifically designed for a given purpose. At one extreme this suggests that technology sometimes has little to do, a priori, with predicted needs.

Which of these understandings is correct? They both are. Both contain elements of truth depending on circumstance and situation. Consumers buy what technologists design and often fashion innovative uses around them. It is often difficult to anticipate how this will happen: technology pushes, society pulls, and in between peers, cultures and a host of other factors influence outcomes. As renowned sociologist Manuel Castells argues:

'People, institutions, companies, and society at large, transform technology, any technology, by modifying it, by experimenting with it… Since our practice is based on communication …our lives are deeply affected by this new communication technology.'[29]

New technology doesn't change its users or their society by itself. Rather, people generate understandings of ICT that make sense in their lives. Essentially, better living through technology is as much about us, the users, as the technology itself. As we have seen, mobile phone users have bought mobile phones in great numbers, and for relatively explicable reasons. In the round, measured by volume of calls, they are also ▶

Mobile technology in everyday life

using them more frequently. But how do users get from a mobile phone being strange and new, to it becoming a comfortable and integrated part of everyday life? American technology journalist James Gleick puts this point well:

'It may as well be a law of modern life. Once it was true of machines …and now it is particularly true of the technologies of computing and communication. First we disdain them and despise them; then we depend on them. In between, we hardly notice a transition.'[30]

We can understand this transition in two steps. First, perception of need leads to adoption. Once significant barriers (particularly cost of ownership) have fallen sufficiently to make purchase possible, consumers buy technology they think they will make use of. Conversely, the main reason people do not buy a given device is because they don't feel they need it.[31] But as the introduction to this section suggests, technology is not always about fulfilling a real need. It can instead satisfy a perceived need. The second step is much easier to identify: adoption itself increases and changes need. If we are given a piece of technology, we are likely to change our behaviour to use and rely upon it. This is particularly true of technology – like mobile phones – that expresses social network effects. In these cases utility increases not only the more you use it, but also the more other people choose to use

it. Consequently, the more people use a mobile phone, the more problematic not having one becomes for non-users. If all your friends have a mobile, then you need one too. This in turn increases the need to buy one. Thus, in theory, the more people have mobile phones, and the more they use them, the more essential they are likely to become.

The claims made for mobiles
However, this relationship between need and use does not entirely explain high variations in the ways mobiles are used across the UK. Some people are extremely heavy users of mobile technology; others barely use the phones they have. If perception of need drives adoption, and usage in turn creates and shapes need, then we must conclude that some users' life and work styles adapt more quickly to the possibilities of mobile phone use.

Much research is skewed towards such fast-adapting groups. ICT researchers themselves tend to be enthusiasts who spend a lot of time using new technology, and consequently study those who use it in interesting ways. Many designers, product strategists and marketers follow the same pattern. In the words of Herb Cohen: 'You and I do not see things as they are. We see things as we are.' Urban professionals and young people in particular gain a disproportionate amount of coverage for the innovative and playful ways in which they make mobiles central to their lives.

Such research does not intend to create a misleading picture of mobile use.

Researchers who study leading groups are aware that they are simply highlighting intriguing new patterns in social life. Yet, particularly when such research is highlighted in the media, it often does not tell the whole story about Britain's mobile phone culture. By focusing on 'elites' and early adopters, the public conversation about mobile phones can obscure the experiences of the mainstream majority.

Consider the following statistics. 29% of mobile phone users use their phone 'only for urgent' calls. Only 9% use a mobile phone as their 'main phone', with a mere 14% using their phone every day. Barely over a third use voicemail, with only 6% using 'WAP or internet services'. Even more startlingly, around half of 45-65-year-old users 'only switch their phones on about once a week'.[32]

The same is true of text messages. As we saw, although around three-quarters of Britons have a mobile phone, only around two-thirds have ever sent a text message. The age cut is even starker: 93% of 16-24-year-olds have texted, but only 10% of those aged 65+ have done so.[33] Around a third of this group did not even know that their phones could send SMS at all. Thus, although the utility of SMS is obvious among younger users, it has not entirely filtered up to their parents, and it has made almost no impact on their grandparents. ▶

29% of mobile phone users use their phone 'only for urgent' calls. Only 9% use a mobile phone as their 'main phone', with a mere 14% using their phone everyday.

Mobile technology in everyday life

Such statistics suggest that, away from the elite and early adopters there are groups who use their phones in less intense, but nonetheless interesting ways. It is also clear that there are wider social changes occurring which have set the context for the way the majority use their mobiles and therefore provide one important window through which to view the world of mobile phones. The first of these is the shift from big to small talk.

From big talk to small talk

As this quote from the chief futurologist at mobile phone operator Orange notes, the actual mechanics of making a phone call have not changed in recent times:

'In the world of telephony, almost nothing has changed in more than 50 years. We've been making phone calls in exactly the same manner – pick up the phone, dial a number, say hello, talk, listen, say goodbye, and hang up. Be it a bulky bakelite telephone from the 1940s that only people like Arnold Schwarzenegger can lift, a graffiti-covered payphone on an inner city street corner, to the latest miniaturised mobile devices – placing a call has been virtually unchanged.'[34]

Yet, in this time, the conversation between 'hello' and 'goodbye' has changed considerably. The popularity of mobile phones needs to be understood within this wider context inherited from fixed-line telephones. An important part in this transition was played by one seminal advertising campaign. BT's 'It's Good To Talk' promotion explicitly set out to persuade its customers to talk more, and to talk differently, on the phone.[35]

It resulted in what technology commentator Bruce Davis has called 'possibly the last piece of major social engineering by a large company in corporate British history'.[36] Its specific objective was to persuade consumers to rethink the way they viewed so-called 'small talk'

BT saw that call levels were at saturation point, and set out to persuade people not only to talk more on the phone but also to feel differently about what they were saying. Market research had found that two types of talk – 'small talk' and 'big talk' – were evaluated in very different ways. Big talk – serious, purposeful, and meaningful conversation – predominated. Small talk – a more casual kind of incidental chat – was marginalised.

The advertising campaign suggested instead that it was acceptable for phone calls to have no express purpose other than to chat. The campaign set out to raise the perceived value of chatting and gossip, portraying it as important and meaningful. It was aimed particularly at men, who were thought more likely to see small talk as time wasting and inconsequential. This was particularly important in households in which men controlled household budgets – the campaign was designed to change the way men thought about the financial implications of phone talk.

The campaign worked; generating £290 million of extra revenue for BT, clear of advertising costs. More importantly, it partly reflected and partly accelerated a major cultural shift in attitudes to phone-based conversation. Obviously this is not the entire story. The cost of phone calls, for instance, has plummeted in the last two decades. This lowering of cost removed a barrier to small talk. But the ultimate result remains the same. Small talk has engineered a social space for phone gossip, a space that mobiles have filled. Mobile phones piggybacked upon, and extended, a trend already in play.

Understanding this shift remains important in understanding how people choose to use mobiles in everyday life. Much mobile talk is small talk. Dr Richard Harper, of the Digital World Research Centre at the University of Surrey, highlights two examples when he describes mobile 'work talk and teen talk'.

'Two types of mobile talk are now notable: work and teen. Firstly, mobile work-talk is dominated by micromanagement that previously would have been organised beforehand. People call to say they are going to be late, to check if meetings are happening, to check up on processes and deadlines. Secondly, teenage talk is dominated by an almost meaningless "babble", but with immense social value. ▶

Mobile technology in everyday life

'The philosophy promoted by BT during the 1990s that "it's good to talk" appears to have played its part. Overall levels of telephone use almost doubled in the last decade.'[38]

This has been the case for many years, but the mobile phones have changed the time and space in which this talk occurs.'[37]

Mobile phone calls are often short for other reasons. Call charges remain more expensive than those of fixed-line phones, although the provision of free minutes on certain tariffs can provide 'free time' to talk. More obviously, the locations of mobile conversations, in the street or on the move, can make long conversations less attractive. But as the quote from Dr Harper suggests, talk that is both small in the sense of short, and small in the sense of chat, is now a common part of the life of a mobile phone user. Text messages are in some ways the logical extension of this trend. They are the ultimate substitution of conversational richness for reach, frequency and convenience.

The rise of small talk, combined with falling costs in telecommunication, heralded vastly increased phone usage. A study by the Future Foundation noted this rise in call volumes from the mid-80s to the mid-90s, saying: 'The philosophy promoted by BT during the 1990s that "it's good to talk" appears to have played its part. Overall levels of telephone use almost doubled in the last decade.'[38] Noting this point, Jon Agar's forthcoming history of the mobile phone suggests that mobiles took off because society itself was ready for them, empowering people in an age of individualism.

Understanding mobile cultures

The adoption of mobile phones is thus also partly explained by grander social changes in the way in which individuals – and groups of individuals – choose to talk to one another. But, again, this alone is not sufficient to explain why some groups adopt mobiles more quickly and more deeply than others.

At the heart of this journey is a three-way relationship: between the device, the user, and their situation in life, particularly expressed through their peer group. This means there is no one 'mobile culture'. Attitudes and behaviours emerge from the complex interplay of individual preferences, peer pressure, fashion, national culture and economic circumstances; by business models and service plans offered; and by regulatory frameworks, standards and costs.[39]

The truth of this is most evident from the fact that different countries have sharply different mobile cultures. Mobile penetration is well established across much of Western Europe and the Asia-Pacific region.

Yet penetration figures hide significantly different patterns of use between (for example) Finland, Italy, Japan, Taiwan and the UK (see Chapter 6). This is also true within countries, for instance between town and country, or urban-centre and suburbia. ▶

Mobile technology in everyday life

British attitudes towards different types of talk have been crucial in shaping the nature of mobile cultures. Similarly, the ways we think about modes of behaviours in public places and our attachment (or otherwise) to family ties have shaped how we use and talk about mobile phones. But where does this leave us? Although the primary motive for getting a phone may be strictly instrumental, over time phones are increasingly used to co-ordinate social and professional life.[40] Similar patterns of change were observed decades before, when the landline telephone was introduced.[41] In general, having acquired a technology, we discover new uses that suit us and change our patterns of behaviour accordingly.

As we domesticate the device, it begins to change us. In discovering new uses for the mobile phone, we evolve conventions of use and non-use that suit different contexts. Some of these are imposed – quiet carriages in trains, for example, or hospital wards and planes, both of which are mobile-free. Others develop from the ground up, among groups of friends and work colleagues, and may spread more widely.

In this process, change is formed by a combination of different factors coming together. It is not usually planned. The impacts of ICT on behaviour are frequently unintended and unforeseen.

User adaptation is often creative, expressive and unpredictable. As people begin to realise what they can do, new behaviours appear. As technology commentator Cory Doctorow argues:

'The fact of the matter is that no group of engineers in a boardroom can ever anticipate what normal people will do with their inventions. Indeed, the measure of a product's success is how far it diverges from its creator's intentions.'[42]

Essentially, we are seeing the invention of convention. As people figure out uses, new patterns of activity emerge and become ingrained. The trick isn't in the technology; it is in the changing of habits.[43]

To try and get a better understanding of how these processes are developing among average users, iSociety undertook ethnographic research into these changing mobile habits. Over the next two chapters of this report we explain what we found. ◻

Chapter 4
Real mobile lives

One of the pioneers of technological ethnography, Genevieve Bell of Intel Corporation, explains the methodology thus: 'It's based on the idea that you can best absorb a culture by being there and doing it. An old professor of mine called it "deep hanging out". You've got to actually be there, hang out with people, and participate in their daily activities.'[44]

As we have seen, descriptions of mobile phone use tend to highlight the unusual and eccentric habits of a small minority. *MobileUK* attempts to redress this balance. We felt it was important to do two things. First, researchers need to tell the story of the silent majority as they are, rather than as they might become. Second, people who use mobile phones do so while communicating in other ways, using other technology, with different groups of people. Thus we wanted to understand its use within the context both of other technological and social relations.

Ethnography is not new to the study of technology. Most major technology companies use ethnographic methods to understand better how people actually use the technologies that they produce and to grasp how in the future technologies might be adopted. As an anthropologist at Motorola explained in the *New York Times:* 'If we want to develop technologies that really fit into the way people live their day-to-day lives, then we have to understand how people really live.'[45] It is a research methodology increasingly adopted by other social scientists and commercial organisations.[46]

Ethnography is both a way of doing research and a way of writing it up. Rather than take mobile users out of their natural habitat, the researchers attempt to get under the skin of mobile use by seeing it within the ebb and flow of daily life. In the following section we present our findings, including portraits of four mobile phone users: Denise, Jack, Louise and Darius and their families and friends. ▶

Real mobile lives

Box 2: The research progress

* Research for *MobileUK* began by reanalysing previous iSociety research, specifically a set of six focus groups looking at attitudes to new technology and a large survey undertaken for *RealityIT*. Then four individual mobile users were recruited to be part of the study. The ethnography we undertook involved an 'encounter' with the respondents spanning three days. This meant, for one ethnographer, spending several hours in a hair salon in Oldham while a respondent acted as guinea pig for a hairdresser demonstrating a new range of hair colours; acting as a plumber's mate in a small Essex town; and mobile phone shopping with a mother for a son about to receive GCSE results and be rewarded with a new phone.

The ethnographers took notes of observed behaviour. On the final day of the encounter the researcher conducted interviews to discuss their interpretations and initial analysis of their informants' mobile lives, and to allow them to discuss these

findings. To ensure that respondents were not sensitised to the ethnographer's specific interest in mobiles, the encounter was framed as concerning everyday life and new technology.

The following accounts are designed to allow readers to appreciate some of the texture of their lives that are pertinent to mobile phones. In addition to basic information about the phones they use, the bills they pay and the wider household technology, these accounts also present the story of phone adoption, usage and attitudes grounded in the context of the lives of phone owners and their families.

NB: Ethnography does not attempt or claim to be representative. The four encounters detailed here are not intended to represent consumer demographics. However, the research methodology does claim to get closer to the experience of being mobile, using phones and understanding their role within the context of everyday life.

Real mobile lives

Encounter 1: Denise, self-employed hairdresser, Oldham

We began our short tour of *MobileUK* in a small mid-terrace house on the main street of a town outside Oldham. Denise, the owner of the house, is a 40-something mother of four: David (16), Rachel (14), Jack (11) and Joe (9). She is married to Mike.

Denise is a hairdresser. Mike is an actor and director in local theatre, where work comes sporadically. Money is tight in the house, particularly because of the unpredictable nature of Mike's work. The two eldest children do holiday work, David in a pub kitchen and Rachel on the local paper round. Both children spend much of the money they earn servicing their mobile phones. At the time of fieldwork David and his parents were making decisions about a new mobile phone for him.

The house is full of consumer technology. All the children have televisions in their rooms; with the eldest two also having VCRs. Downstairs in the front room there is a wide screen colour TV (bought from the supermarket), with video player and Sky box. The TV is on most of the day. An older colour set lives in the 'snug' next door, along with a computer work station housing 'Denise's' PC. The family also own a caller display unit which sits on the sideboard by the landline. This device displays the numbers of all incoming phone calls, allowing family members to screen and direct incoming calls. Mike

claims that in the evenings he is able to avoid 'double glazing salesmen or pushy credit card companies' by watching for the number withheld.

Denise has a contract with 0_2, for which she pays about £6/7 on monthly bills, with a one-off annual contract payment of £80. Her contract gives 600 free monthly minutes to landlines and other 0_2 phones after 7pm. The whole family uses the phone in the evenings, yet Denise says the family never uses their full entitlement of minutes. Mike, who shares this mobile phone, operates as informal accountant by safeguarding against frivolous use during peak hours. Denise checks the monthly bill, largely because the money goes out from her account – 'though not as carefully as I used to', she adds.

Denise's relationship with technology is matter of fact. What she finds useful she uses, although she is not limited to utility when buying or upgrading. Her mobile phone is primarily a communication device. There is little 'personalisation' of ring tones, and no personal answer phone message. The clock on the phone is not set to the correct time. Any bells and whistles have been added by her daughter Rachel.

A day in the life of a mobile phone

As discussed above, technology does not exist in a vacuum. It enters the busy lives and households of people looking after children, making arrangements, juggling work and home lives and maintaining relationships.

Today we are heading out into Oldham to the hairdressing salon. At the last moment before we left Denise scooped up the phone from by the television where it had been charging.

Earlier we had taken the dog for a walk and it had rolled in something. On our return, a mild panic: the friend driving Denise into town was waiting in her car, the children were barely up and the dog now needed cleaning. After an unsuccessful attempt at shampooing the dog we left the house. Denise told the kids to finish the job, and left saying 'I'm on the mobile'.

At the salon it isn't long before she picks out the mobile phone from her bag to see how the task was progressing … her mind settled, we concentrate on the task in hand: tints and highlights for all.

Two hours later and the phone has only been out of Denise's handbag to make a few quick calls. She does not check the phone to see if she misses calls. Unlike others in the salon, Denise seems unaware of her phone's existence until it rings or she uses it.

The phone comes in handy to check on the children ('Did you get something for your lunch?'), and to give them her estimated time of arrival back home. ▶

Real mobile lives

She also calls Mike at work twice; once speaking to him about our lift back home and a second time speaking to a colleague of his. This colleague later phones back to report that Mike is on his way. When Mike picks Denise up almost the first thing she tells him is that she has spoken to the children to check they were okay. She recounts the episode with the dog earlier in the day.

This day in the life of a mobile phone user is not unusual. The phone helps cope with the pitfalls of everyday life: children who need reminding to eat lunch, lifts that need arranging, and maintaining relationships through small talk. These episodes demonstrate a practical mastery of the mobile phone, using it to tie together loose pieces of life. The mastery is not in technical ability: Denise barely knows her own mobile number or how to set a personal answer phone message. Indeed, she does not see herself as in any way 'techy'. But she has owned a computer for some time, knows her way around it, and guides her family in their use of it. She's a competent 'sysadmin' for the household. The children respect the fact that it is her machine, despite the fact that it is in a shared space in the house.

Denise ultimately likes her phone to the extent that it is useful and it does the job. While a more 'snazzy' phone has a certain allure, her present phone is good enough'. She displays only a cautious interest in upgrading to the latest model, saying: 'What good's a picture phone until your friends have got one?'

Phone and family

Finance remains a big issue for Denise. Her contract gives 600 minutes of off-peak calls a month to landlines and other 0^2 phones; something the whole family takes advantage of. Continued awareness of the cost of calling means that phone use is also subject to family negotiation.

It's about 7.25pm and Rachel [who is 14 and has her own pay-as-you-go phone] asks her father if she can use the phone to call a friend to make an arrangement to go up to the 'school' – the playing field where they all hang out in the evenings. He assents and Rachel disappears into the front room.

Although Denise owns the contract, she shares the phone with her husband and children. The two elder children have phones of their own. Her husband and two youngest children do not. She rarely uses possessive pronouns to describe the phone: she neither calls it her own, nor in any real sense is it hers and hers alone.

The finances of servicing the phone underscore this sharing. Denise pays the bills and consequently is responsible for use in peak hours. Denise admits that her husband often polices its use more jealously than she does: 'But then he has always been more careful about what we spend anyway', she adds. Buying a new mobile phone is also a family exercise. David [Denise's third child] may be old enough to get married or buy cigarettes, but he cannot put a mobile contract in his name. Neither he nor his parents feel that he can make the decision about a new contract in isolation.

After the hairdressers, we head to the main shopping street in Oldham to price phones for David, Denise's 16-year-old son. A recent contract phone for David (at Phones4U), which Mike had put under his name, had just been returned. The first bill was £17 after 10 days' use, too much for David on £3 per hour at the local pub kitchen to afford, and he and his parents were searching for the right contract.

For this teenager and his parents, ensuring they get the right contract is a mix of hard economics and parental responsibility. Both parents hope their son will financially be responsible with his phone, and agree that he probably does need one. ▶

'What good's a picture phone until your friends have got one?'

Real mobile lives

Encounter 2: Jack, self-employed plumber, Saffron Walden, Essex

Our second encounter took us to visit Jack, a plumber living in a small development of houses in an Essex market town. He is married with three children, aged nine, five and one. At the time of fieldwork Jack's wife and children were holidaying with her parents on the Suffolk coast. Jack's house is neat, tidy and has no shortage of technology. He averages a daily wage of £250 and now his business is established he has few financial concerns. Nor does he have much interest in growing the business.

A small area of the lounge functions as his office – an IKEA workstation unit which houses his 1996 Dell PC, printer, scanner, phone/fax and answer machine. Jack likes his top-end technology – he owns a Bang and Olufsen telephone, CD player and speakers – and is protective about it. He complains that his wife has dropped or damaged most of it at some point. The technology is definitely 'his'.

Jack has been self-employed since 1989 and says he would never go back to working for others. He used to work as a contractor for a local company, becoming proficient at all aspects of plumbing. He bought his first mobile phone in 1990, at a time when he was working hard to buck the recession working as a contracted 'sub' for a relocation company across six counties. That phone was on a Vodafone contract and cost him approximately £400. He says it was similar to an 'army field phone': 'one in a suitcase, that was the only option, and it was a bloody pain. But that was the way it was …and for all that money you didn't even get Space Invaders.' (Jack is a huge fan of Nokia Bantumi.) He moved his current contract to Orange as soon as a change in the network forced operators to allow subscribers to transfer their numbers. He recently upgraded his phone to a 5210: rubber, waterproof and 'with a really large memory'.

Jack has an Orange Talk 60 contract and his average bill comes in at £30-35, although the bill on his desk was for £29. (He got his wife an Orange phone but resisted putting her on the same bill. She is Pay-As-You-Go.) He explains his low bills as follows: 'Most calls are incoming – but I use the phone in the evening as I have free calls then.' The use of the phone that we observe conforms to this pattern. Jack's clients joke that he is almost impossible to contact. Jack's answer phone message left all enquirers this clue: 'I may be drilling in which case I can't hear the phone …Please leave me a message and I'll call you later.'

Technology and tools for work

The *Oxford English Dictionary* defines a tool as 'a device or implement, especially one held in the hand, used to carry out a particular function'. This matter-of-factness defines Jack's relationship with his phone. He has three tools strapped to his leather belt, all indispensable in his role as a plumber and heating mechanic: a Stanley tape measure (complete with leather case), a Maglite 'pen' torch, and a Nokia 5210 mobile phone (also in a protective case). He uses all three regularly during the day and all three implements are to hand.

Out on a job, to a flooded house into which the owners have just returned. They need a new shower pump – this diagnosis coming from an extensive conversation with Jack to establish the problem and the range of faults that might be responsible.

10.15 am. Jack calls the local building supply merchants (the number is in the phone memory) to get a number for the pump manufacturer. He's got a scrap of paper on his knee to write the number down.

10.18am. Jack rings the pump manufacturer to get some technical information on the pump. He reports the information back to the customer, and together they make a quick decision about what to do next.

10.20am. He calls the building supply merchants again, asking for the heating department. 'Hi, Mike', he says, 'It's Jack…', niceties over with he orders the part and ends the call. ▶

Real mobile lives

7.25pm. The building supply merchants call to confirm that the pump has arrived. Jack says it's lucky he got the call because the phone was in the van, and he just happened to be fetching something from it when it rang.

This episode demonstrates the mobile phone as an invaluable tool of the trade. Such a strong sense of utility is tempered only by a controlled usage pattern. Jack rarely makes non-essential outgoing calls, although he does use the phone when he needs to in the course of ordering supplies. Indeed he makes very few outgoing calls during peak hours, instead using his off-peak minutes as fully as possible. His most recent bill, at £29, is testament to this control.

When old technologies were new

Jack's measured use comes from the early days of his mobile use. From the comfortable perspective of 2002, with a solid business in place, he talks animatedly about the impact of his first mobile phone. In those days, having at least two jobs scheduled the evening before, he would hit the road with his 'army field phone' wired into the van. Having the phone allowed Jack to squeeze in a third (or even fourth job) per day, usually within the same area. In so doing he significantly enlarged his income. Jack sees his ownership of a mobile phone as the difference between

staying in business and going bust: 'That was the early days of mobile and I thought "This phone is fucking cool …I'm taking home £200 or £250 a day, mainly because of this phone". 'Given its impact on his financial stability, it is not surprising that this first phone is stored away in the loft as an heirloom and symbol of early entrepreneurial success.

Yet despite being fundamental to his business success, Jack's mobile tool also carried potential dangers. Back then, he remembers, a plumber would have been unwise to flaunt his phone: 'If you'd flashed it around your customers would have thought, "he's making too much money … look he's got a mobile phone". Of course now if you didn't have one they'd call you stupid.' Yet, despite mass ownership, he still remains aware of the impact that an expensive phone might have on his reputation. Discussing camera phones Jack makes a point similar to his observations about mobile phones in the early 1990s:

'I couldn't get a picture phone – people would think, he must be an expensive plumber. So I'd have to use it in private if I got one at all, but it would be handy for taking a picture of a boiler or something like that.'

Jack is not unusual in having a highly developed sense of what a phone means, symbolises or says about its owner. Like

most owners he is aware of this symbolic potential and attempts to manage the impression his phone makes.

Just as Jack controls what his phone says about him, so he also keeps close control over his usage. He never commits to a job on his mobile, instead returning the call from home when he has looked in his diary to see when a particular location suits his schedule: 'I don't want to commit to work immediately …it's better to wait, think about when the best time would be… just like today [where we are working on two houses opposite each other in a small village].' Jack's unwillingness to call back during the day leads clients to complain that he is a 'nightmare' to contact. Jack says he used to blame 'bad reception', although he admits that this ruse is harder to maintain with mobile networks reaching even the more remote areas of Essex.

These attempts to maintain control are part of a strong desire to manage his connectivity in a way that suits his style of working. Plumbers are in demand, and this allows him to schedule jobs in ways that are most convenient for him. Jack likes to work through the week according to the schedule he has arranged, often weeks ahead. His mobile gives him connectivity but he tries to ensure that it does not disturb the order of his working week. Because of this Jack is highly aware of the ▶

Real mobile lives

need to control his mobile phone for incoming calls. He worries that, if he does not, the phone will entice him to make rash business decisions on the hoof. Text messages, dismissed as 'silly and fiddly' do not even enter the equation.

Jack's phone use, therefore, is intriguing. On the one hand his use is instrumental. His phone is a constant companion, yet he remains rational about its value. The phone provides an incoming line for friends and clients, but he uses it sparingly during the day when going about his duties. He admits that it is crucial to his work, but is clear about the need to manage its use. He dislikes being in 'perpetual contact', and keeps his bills to a minimum by scrupulously using up his free minutes. Consequently, he has low bills, particularly for someone who uses it as a piece of everyday business technology. He is un-enthralled by the notion of mobile connectivity, and has disdain for text messages. He boldly asserts that he'll resist his children's desire for mobiles as long as he possibly can.

On the other hand, he clearly appreciates how important a phone is for his job. He remembers his first phone with enthusiasm, and keeps it in his attic as a sentimental keepsake of a previous era. He is aware of both the practical and symbolic value of a phone, and what it could be used for. And he is enthusiastic about his new mobile, not least because

he can play games on it in idle moments. Ultimately he is proud of the way he maintains control over the phone, both financially and for his business needs: he is his phone's master rather than the other way round.

Encounter 3: Louise, unemployed single mother, North London.

In our third encounter we visit Louise, a 35 year-old single mother of four. Her children (with three fathers) are Mark (17), Rachel (14), James (12) and Calum (10). For the last seven years the family have lived in a four-bedroom house on a local authority estate, in the London suburb of Mill Hill. The rent is £120 a month. Louise has been in a relationship for the last two years. However, her boyfriend does not live with her and the children. The father of the two younger boys spends time with them on a regular basis and visits the house for dinner every Wednesday.

There is a doorstep-based social life on the estate. Louise's next-door neighbours often visit for a cup of tea and a chat, and her children are friends with most of the neighbouring children. Although Louise is unemployed she does 'a bit of cleaning for people'. This cleaning consists of two three-hour sessions each week for a young professional family on a Monday and Friday morning.

The household technology consists of a 32-inch wide screen TV, video and SKY digibox. In the dining room there is a radio

that is tuned into different music channels throughout the day. Louise says: 'I love my music and need it on all the time. If there was one thing that I would take to a desert island it would be my music.' Her eldest son Mark has a television and Xbox in his room. Louise also has a TV in her bedroom, and watches it before she goes to bed. The 13-year-old daughter, Rachel, has a radio in her room. The bedrooms of the younger boys are technology free.

Their house has a disconnected landline phone, a decision 'forced' by bills of up to £350 run up by the children calling their friends' mobile phones. Louise says she will get it reconnected soon, but will do so without the children knowing. However, Mark has just got a part-time job at B&Q and has suggested that he will be happy to contribute to the phone bill. Mobile phones are a central, everyday feature in the household. All the family members have one, including the two young boys who share a single handset. There is even a spare phone. Louise helps the younger children pay the bills by rewarding household cleaning tasks. The children also get money from their various fathers to buy Pay-As-You-Go vouchers.

Louise brought her first mobile phone two years ago, an impulse purchase when shopping with a friend. The initial phone was on contract with One2One. Last year she changed to Vodafone Pay-As-You-Go. This decision was taken partly to upgrade ▶

Real mobile lives

her handset and partly because her closest friend also uses Vodafone, allowing them to talk cheaply. However, the principal reason for changing was to control expense. Her monthly expenditure is between £25 and £30.

Double-edged devices

Phones are a feature of everyday life in this household. Louise sees her and her children's mobile phones as essential day-to-day items. However, this relationship can be uneasy. For instance, Louise has concluded that text messaging is an innovation too far. The fact that Louise receives text messages from friends throughout the day does not appear to goad her into replying to any of them. She tends to respond by phoning them: 'It would take me about ten minutes to send a short text, like "How are you?"'

What holds her back? In one sense she is unclear about the right linguistic register to adopt, for instance using abbreviations or proper words. More generally, however, she prefers to talk, and is uncomfortable with the way SMS blurs the boundary between a phone as a device for verbal communication and phone as something to write with.

Carrying a mobile phone requires the user to manage its use or abuse within the variety of contexts in which they find themselves. Many users of phones will sympathise with this account and many

mobile users claim that they never leave home without their mobile, like a wallet or keys. As Louise commented during our visit:

'I always have my phone with me… and it is always on. Last week I popped out to the shop on the corner here and forgot my phone. Half-way down I turned back to get it. The shop is only two minutes away but I still came back… The only time I do switch it off is when I do my cleaning job because the woman has a baby and I don't think it's right if my phone went off and the baby was asleep… So I keep it off then.'

Louise manages the boundaries between her phone and somebody else's home by switching it off. Others might have dealt with this in a different manner: either by switching the phone to 'silent', or by monitoring it more regularly, dealing with any calls or messages out of earshot.

Similarly with the economics of her phone, the fact that Louise is a pre-pay user in itself creates occasional difficulties.

Louise explained how she recently topped up by buying a card, but she had an experience where the code on the back of the card was rejected leaving her unable to use her phone that night. This made her feel unsafe and vulnerable. She now tops up her card electronically in the supermarket or at the local newsagents.

Pre-pay phones, which need monitoring

and periodic topping up through trips to the newsagents, puncture the seamlessness that characterises a contract user's relationship with their phone. Those on pre-pay are more aware of their expenditure, and are forced to monitor their phone cost on an ongoing basis. Contract holders tend to be less aware of the mechanics of running a phone, reminded only by the arrival of a monthly bill. Pre-pay users like Louise often trust neither themselves nor the technology. They have less confidence in their ability to control expenditure. For younger users it tends to be parents who imply that they cannot control their propensity to chat. Replacing one family household phone with five mobile phones might seem a peculiarly complicated way to manage expense, but the individual responsibility ensures that her children in particular understand what they are spending.

Louise also pays her children for housework, almost entirely to help pay for their phone bills. These chores range from putting the washing out to emptying the bins. Louise uses the economics of a mobile phone to encourage her children to learn 'adult' responsibilities. The phone allows her to exert authority – no job = no money = no phone – but also to indulge her children by waiving the same rule. The phone in this household acts as a conduit for parenting. Her children's attachment to ▶

Real mobile lives

their phones makes this particularly effective. This delicate parental balancing act is only disrupted when the father of two of the children visits weekly. By handing over money for their phone – 'Go and top yourself up', he says – he subverts the household's economic discipline in the same way as a 'spoiling' grandparent. Louise felt this undermined her authority, but did not feel she could do anything about it.

This delicate financial balancing act, combined with the number of phones, makes mobile management a dominant feature of the household. For Louise the household phones have the potential to cause trouble if not managed properly. Her mobile was most often, when not being used, plugged into the charger on the kitchen unit. This is akin to tying the phone up, keeping it on the leash. In another sense, it replaces the disconnected landline.

In this and other ways a mobile is a double-edged device for Louise and her family. In their neighbourhood, with high street crime and a pervading sense of decay, phones represent both security and risk.

Louise asks her son why he spends so much time in his room playing on his Xbox. He replies that due to the risk of being mugged for his mobile phone, he could only go out and meet with friends

at certain times, and only in certain places in North London.

He recounts an event of the previous week when a group of teenage boys approached him and his friends on the tube. Neither had their mobiles with them, so the would-be muggers made his mate jump up and down as a form of humiliation.

The spare Pay-as-You-Go 'brick' is used by anyone who cannot find their phone before they head out. Indeed, Louise does not let her daughter out of the house unless she has her phone and they have arranged a time when they will speak. It is noticeable that, while her son sometimes leaves the house without his phone, Denise does not allow her daughter the same dispensation. The need for an explicit 'children check' before leaving the house contrasts with Denise in Oldham who can leave the house and then say, self-reassuringly, 'They know I'm on the mobile.' Yet Louise's concerns about mobile phones – her occasional lack of confidence, her reticence about public use, and her awareness of mobile crime – are counteracted by her appreciation of how mobiles are useful tools for looking after her family and co-ordinating their lives.

Encounter 4: Darius, freelance IT worker, Notting Hill, London.

Darius conforms more readily to the stereotype of a heavy mobile phone user.

He works in IT, specialising in helping businesses sell their products over the internet. He currently rents a flat with two friends in Notting Hill. Darius decided to freelance to allow him the flexibility to spend time playing music with his band. He spends two evenings a week recording, and is trying to get a record contract. His first freelance client was the band All Saints.

Like many freelances his work pattern is varied, oscillating between 12-hour days and 'a half day here and there'. He works mostly from his large bedroom, where he has both a desktop and laptop. Darius shares a wide screen Phillips TV with his flatmates. They have SKY Digital, bought to watch football. His stereo remains his most prized piece of technology.

Darius' mobile is a Samsung A300. He is a heavy user: clients and friends ring him frequently. However, although he uses his phone often he tries hard to prevent the phone controlling him. For example, when he is with a client, he will rarely take his phone out of his pocket, always diverting it to voice mail. When he goes out for a night he tends to leave his phone at home: 'When I go out with friends, I sometimes won't take the phone with me… I don't want to be disturbed. Six years ago we all went out without phones… you had a better night out.'

Although he has a contract, Darius ▶

Real mobile lives

tries to minimise his bills by using his free minutes. He recently changed his contract after receiving a monthly 'ridiculous' bill of £150. His new contract offers 500 free minutes, for which he pays £60 per month. His bill for July was £62.

Keeping enthusiasm under control

Darius was brought up with and has been part of the mobile revolution since his parents gave him a 'brick' phone – 'the Del Boy one' – seven years ago. Since that time the phone has become an essential part of his work and social life. However, he does not desire the latest gadget or the latest model of phone – unless his network provides it for free: 'I have had six mobile phones, most got stolen and the rest lost, so I don't change my phone if I can help it. I wouldn't pay money to buy a phone – I'd have to get it for free.' Darius prefers to 'get under the bonnet' and get the best from what he has – he is competent enough to add and upgrade his technology as and when the need arises. His competence and

enthusiasm is tempered by a desire to keep the technology in check and not be over-enthralled by it.

A recurring episode from field research with Darius made clear how his relationship with his mobile phone was one in which he was master. Darius was totally unwilling to allow his mobile phone to disrupt a social occasion. Sitting at a café in Notting Hill he would drop calls or ask friends if he could ring them back, rather than disturb his encounter with the ethnographer. Asked about this, Darius and his friends agreed that he was unwilling to allow his phone to disturb him. A recent report gave conversations interrupted by phone calls the rather unwieldy title of face-to-face-to-mobile-phone-to-face[47] encounters. Darius was highly alert to the social disruption such three-way encounters can produce, preferring those he was with over those on the other end of the phone.

The perceived pressure of mobile

phones impinging upon his social life increased Darius' conception of his own privacy. As he described it:

'When I lost my last phone I did not get another one for 2¹/₂ weeks. For the first two days I was going like… shit, shit, shit, shit. But then all the calls were diverted to my landline and when I went out at night I had nothing to worry about. And I loved those two weeks.'

Yet despite his enjoyable mobile phone holiday, Darius did not give up his phone. Although he enjoyed being separated from his phone, he also could not live his life entirely without one. However Darius did have more creative ways to distance himself from the technology.

Although Darius uses technology highly competently he still writes down all his phone numbers in a phone book that remains in the house. He copies all his accounts into a book before entering them onto an Excel spreadsheet. He draws charts or diagrams on paper ▶

Real mobile lives

before copying them onto his computer.

The first two habits he ascribes to 'safety' while the latter is a function of his need to feel 'free' while thinking about ideas for a project.

In these specific cases Darius is displaying a realistic attitude toward his technology; fear of crashes and data loss lead him back to the land of paper. But in other respects Darius appears confident enough with technology in general to talk about not needing it.

Darius's computers are not the most up to date, but he has the know-how to upgrade his technology quickly.

Six months ago he was loaned a Blackberry [a pager-like device for sending and receiving emails] from one of his friends. He liked the technology, but felt that it did not fit into his work lifestyle, therefore it has no real benefit and so was not financially viable.

His conclusion about the necessity and practicality of the Blackberry was that his life was not mobile enough to warrant such a device. Darius's mobile phone offers him the communication channel he needs while out and about, or perhaps an occasional email sent from the train from his laptop via his mobile. This is about the limit of Darius's' working mobility' requirements. He liked the concept of the Blackberry but this mobile device did not meet a direct need. For Darius a Blackberry was a solution without a problem, a piece of technology he could do without. Darius has reached a certain 'tipping point' in his relationship with mobile and other technologies, a point beyond which he can 'take it or leave it'.

These four portraits give examples of some everyday users of mobile phones. What insight do they give, in combination with other evidence, about the real impact of mobile phones on everyday life? ▫

Chapter 5
The importance of being mobile

Our conclusions from these ethnographic encounters began with a surprise. Although we did not base the encounters on the attitudinal clusters produced for RealityIT (see Box 1, p8), we had expected to see broadly consistent attitudinal patterns of mobile phone usage, along the lines of Enthusiasts, Quiet Pragmatists, and Aversives. Instead, the encounters suggested a mix of these attitudes in each case.

Jack, for instance, seems to be an arch pragmatist. But he nostalgically kept his old phone in his loft, and also paraded his confidence in controlling his connectivity. Louise admitted she lacked confidence when using technology, and tends to switch her phone off frequently in situations in which she does not feel comfortable. Yet she had also developed a system of family incentives, using the phone to get her children to do household tasks. This in turn is as much about being a sophisticated mother as it is about being a sophisticated mobile phone user. Denise also used her phone to organise her family, yet showed no interest in personalisation or add-ons. Darius, the most likely enthusiast, took the most pleasure in being without his mobile phone. He also decided against using a Blackberry on the grounds that he did not really need it. This suggests that attitudinal statements useful for describing either a whole population, or broad feelings towards technology in general, are less likely to accurately describe individuals and the way they use a single piece of technology day-to-day. Armed with this insight, what other conclusions can be drawn?

Talk isn't cheap
The first clear finding from our research is that money matters, and more than many commentators think. Those from highly prosperous professional backgrounds are less likely to be aware of the cost of using a phone. They won't be on pre-pay. Indeed, their employer will probably pay for the phone and many of their calls. But our research suggests that those who do not read their phone bills are likely to be highly unusual. Cost remains a highly significant issue for the majority of users, and often defines their relationships with their phones and networks. This relationship with expense begins at the moment of purchase, but also has far-reaching implications for the way people use their phones day-to-day. ▶

The importance of being mobile

'It's quite expensive… ringing another mobile, particularly if you have used all your free minutes. It makes it difficult to chat: the bills can be huge.'

Bottom line: mobile users understand money, and it is difficult to understand present behaviour, or predict the future, until you take this into account. Budgetary prudence is clear in the pre-purchase planning of the mobile. An example of this was Denise and her family sitting at their kitchen table poring over the complex tariff charts, debating how the phone will be used, who to phone and at what time of the day.

They collect all the shop's brochures but struggle to make head or tail of the different talk plans, or work out what will be the cheapest option for their son. They weigh up the costs and benefits of insurance, or the inclusion of itemised billing at no extra cost. This handy service would help the family track call costs, analysing how they use the phone and potentially lower its cost. By the time they reach the shop the pay-off between talk-plan or network, and the most desirable but economic phone, will have been decided.

Mobile phones also compete for money, and must be understood within the economy of the domestic budget. If a user spends a lot of money on a phone, they often have to make economies elsewhere. For instance, Denise's son returned his first

phone after only one month. His bill of £17 was beyond what he could afford. His job at the pub earned him more than this, but clothes, trainers, console games and going out with friends from school were also on his list of outgoings.

Even within this context, however, mobiles have an addictive quality. Despite budgetary constraints users will find ways to fund their habit. In particular we observed numerous strategies to keep costs down. The most simple, and the one that the majority of mobile phone users employ, is running a pre-pay phone. Despite evidence that pre-pay phones offer bad value for money – The Consumers Association thinks up to 10 million customers could save money by getting a contract[48]– most users prefer to have a payment method that keeps them aware of the cost of running a phone.

Paying before you talk gives users a greater awareness of the cost of conversation, rather than talking now and regretting later. Several research respondents had moved from contract to pre-pay – to curb their temptation to talk in idle moments and consequently run up large bills. For instance, one person interviewed during the study said: 'When I was on a contract phone, and sitting in a traffic jam, I'd just pick up the phone and talk, talk, talk… pre-pay means I resist this temptation.' During the course of research, we also observed a number of other ways to curb runaway bills.

The employer pays. Phoning someone at work, who returns the call, courtesy of his or her employer. Alternatively, avoiding using the mobile at work and using the employer's landline. If an employer pays the bills on the mobile, talk time can be anytime.

The phone as pager. Using an agreed 'call sign' that leaves a 'missed' call message and the caller's number on a phone. This activates a pre-arranged response such as picking someone up from the station or ringing the caller back from a landline. Ben calls his parents' phone from the pub where he works in the kitchen. After three rings the phone goes dead. 'That's him done for the day', comments Denise, 'taxi service begins now.'

Talk time maximisation. We found that mobile owners were aware of their tariffs, and in particular the amount of free minutes available to talk. They displayed discipline in using their inclusive minutes in the most efficient way possible.

Keep to your own network. Mobile users are highly aware of the higher costs of calls made to other networks. Calls to other networks are minimised, often with the annotation (with + or * signs) of phone books entries to indicate 'own' or 'other' networks.

Crib sheets. In one encounter we found that rates for calling each of the mobile phone networks from a landline and mobile were stuck to the cover of an address book – costs curbed with a neat crib sheet. ▶

The importance of being mobile

These strategies indicate that the average mobile user finds ways around the constraints of cash flow. The growth of 'small talk' culture has to be financed and is often funded through creative management and inventive short cuts. This awareness of cost exists across age groups. Younger users temper their desire to talk because they don't have much money, and often rely on their parents for phone finance. Older users combine a less comfortable attitude to mobiles with a greater appreciation of the value of money. As the Jack the plumber noted: 'It's the older folk who never call my mobile. They always call the landline – they know it costs more to call a mobile.'

In this way the growth of mobile culture has resulted in a much stronger awareness of the cost of communication. This awareness does not necessarily result in less talk. Instead it means that people don't assume naively that talk is cheap. In their opinion it isn't. Yet families know that without communication the comings and goings of their daily life would be difficult. The necessity for communication, combined with the economic reality of funding it, mean that mobile phones have become enmeshed in the day-to-day reality of family finance.

Mobile phones have become a family business. They are a new way of rewarding children – a Samsung A300 for your GCSE passes – or punishing unruly behaviour. We found that talk vouchers have become a new form of pocket money. But children remain beholden to their parents for the money: he who pays the piper still calls the tune.

Mobiles also help to connect children to the world of money at an earlier age. Most children are on pre-pay, making phone vouchers a currency in this new economy of conversation. Vouchers may be earned, or they might be begged and borrowed; either way they act as an informal currency. Accordingly they act as a training ground for children learning to take on economic responsibilities. They are devices over which children have a degree of personal responsibility, while still relying on parental economic intervention.

Donations also come with strings attached. In the North London household we encountered a household economy of vouchers, distributed in return for completing household tasks and good behaviour. The bottom line was that mobile vouchers were not free gifts or tokens of affection between a mother and her children. They had to be earned. In this way phones become a device for teaching economic literacy to children.

My SIM, our phone: are phones really so personal?

Are mobile phones a shared or individual technology? The typical mobile communications story tells of a move from a shared to an individually owned technology. There is a marked shift from the family phone to a 'personal communications device' in the pocket or handbag of an individual. Phones are no longer predominantly found in 'shared' environments like the sitting room or family car. Yet our research challenges the conclusion that their personal nature necessarily makes mobiles entirely personal technologies. We found evidence of group behaviour around phones: collective personalisation, ownership and use.

At first sight 'personal' add-ons for a mobile phone such as 'screensavers', clip-on fascias and dial tones are an obvious sign of individuality. They are a simple way of making a mass-produced device reflect the life and outlook of its owner. But in taking a closer look we discovered that they are often also collective or shared forms of customisation. We found that children (and others) do not simply treat these just as personal add-ons. They are swapped, downloaded and shared. Clip-on fascia are now social in the way that football stickers used to be swapped in the playground.

There is an informal economy in such 'personal' items. Denise and her daughter shared the same screensaver, featuring the St George's flag and an unshaven 'Becks'. Her daughter had downloaded it from the web, installed it on her phone and then forwarded it on to her mum. Two of the children from our London family ▶

The importance of being mobile

often took this a step further by swapping phones. One had a new Motorola, the other a new Nokia. In another family, mother and daughter operated a recycling arrangement in which the mother would receive her daughter's old phone – fascias and all – whenever her daughter upgraded.

This suggests that personalisation is not always that personal and that mobile phones are often less individual than we assume. 'Personalisation' of phones can signal highly collective messages, such as bonds with a mother or friend, loyalty to a football team, a pop group or even a nation: all much bigger than the individual whose phone sits in her pocket.

Returning again to the issue of money, we found that funding a phone also carried a strong communal element. The mobile has undergone a form of collectivisation and the economics of the phone are more a matter of collective responsibility than we typically assume. Children under the age of 18 cannot own a contract phone in their own name. We found that parents took overall monetary responsibility for the phone (if not day-to-day control over it) by signing the contract on their behalf.

In other cases a single mobile phone can function in a similar fashion to a household landline, acting as a shared handset used by many. Talk plans offering inclusive 'talk time' during off-peak hours result in landline displacement by a mobile that an entire household can use. This shared use stems directly from the desire to reduce

time during off-peak hours result in costs, and to share 'free' phone time across a family. This tension between mobile phones as individual and collective resources within families and groups often changes according to the time of day. We saw there were times (eg, after 7pm) when the mobile is shared. The phone swings between the personal and the collective: between being jealously guarded and its use by others being encouraged to use up remaining talk plan minutes. In this way mobile phones, normally thought of as individualistic and personal, can sometimes be shared. Being mobile is a pooled resource.

Mobile mood swings
New technology is not inherently worthy of comment. Few people spend time discussing their DVD players, videos or home computers. Mobile phones are different. Our encounters revealed that mobile users have sophisticated (and often emphatic) opinions about their phones. This fascination comes about because the mobile is a personal tool which links people into the most important thing in their life: the people they know and care about. Mobiles are an important part of everyday life because they connect us immediately to other human beings, and other situations that require our attention.

The function of the device – immediate conversation and communication at any location or time we choose – leads to conflicting opinions. In particular, users are

alive to the intrusiveness of the mobile, both for themselves and for those around them. The mobile phone is convenient, but also invasive. Unlike most other ICTs around at the moment, mobile phones have striking positive and negative externalities as a direct result of their portability and communications potential. In the future, as ICT generally gets more mobile and more communications-capable (laptops, PDAs, smartphones, tablet PCs, etc), we may well face these problems and debates again.

Users face familiar difficulties in balancing access to others with availability to others.[49] Non-users feel that inappropriate use is a major objection; for users it is an embarrassment to be steered round. To get round these, users develop new conventions: for example, by using SMS (non-invasive) rather than voice (invasive).[50] Yet 45% of British mobile phone users would still like mobiles banned in public places. The same survey showed that 93% of Britons support a ban on the use of mobiles while driving, although 2 in 10 phone owners also admitted to using the phone while at the wheel.[51] The City of New York has taken this a step further, by introducing legislation that bans mobile phones in 'places of public performance' and threatens transgressors with a $50 fine.

Yet, against the view that some people 'love' mobile phones while others dislike them, we found that both opinions tend to ▶

45% of British mobile phone users would still like mobiles banned in public places

The importance of being mobile

co-exist in most users. Attitudes towards mobiles and appreciation of their utility seem to oscillate between love and hate depending on the situation. During our research we recorded numerous occasions where users remembered being grateful for having a phone. Simultaneously most could also remember situations in which their phones were a source of frustration or anxiety.

For instance, the attachments formed with mobile phones, both as practical tools and emotional props, sometimes resulted in a sense of vulnerability. A customised phone, with a SIM containing numbers (and memories, relationships and networks) becomes more than merely a handset. Deep attachment can lead to desolation, as a participant in an iSociety focus group in Manchester makes plain: 'I didn't have a mobile phone for a week. It was as if someone had died.' Compare this with our encounter with Darius, who saw his two weeks without a phone as a blissful rest cure.

The connectivity provided by phones can also be compulsive. One man told us that when he dipped into his pocket for his phone he felt 'like a smoker reaching for his cigarettes'. Being a smoker he understood the implications of what he was saying: that his need to see if any messages had arrived or calls had been missed was regrettable but irrepressible. This man referred to himself as a 'heavy

user' of his phone: he openly admitted his sense of dependency and a fear of separation. For many mobile users this consciousness of their own intoxication is obvious. Their inability to distinguish between wanting to and needing to use their mobile phone demonstrates how complex the relationship can become. Overall, however, we found that users retain a balanced view of the social advantages and disadvantages of mobile ownership.

Controlling connections

The efforts people make to control the phone are among the most tangible illustration of this balanced relationship. Mobile culture is characterised by a strong debate over who controls whom. Learning to use a mobile, for most users, is about learning how to control connections. Nearly all of the mobile users with whom we talked understood that they needed to find ways to control their phone, and this meant balancing the benefit of 'freedom to contact' with the fact that others were 'free to contact you'. As Darius put it, while the phone allows him to be a freelance businessman and manage a social network it also allows his mum to reach him anytime. It is his mum who calls him most:

'"Stop calling me, Mum", I say. I am the eldest son so it's first thing in the morning and last thing at night…"MUM!!"'

Pervasive mobile culture increases our

ability to communicate, but this cuts both ways. We cherish our ability to be in contact and available for conversation. Conversely, we acknowledge that the benefits of mobile communication have a darker side. It might be our parents, partners, co-workers or customers. All can reach us, anytime, unless we actively control our connectivity. However, the mere fact of having a phone in turn increases the expectation of being contactable. In certain situations this can mean that a user finds it difficult to switch off a phone. Not everyone has the luxury of Jack the plumber, whose confidence meant he felt able to ignore calls when they were not convenient.

All these users display a high awareness of the double bind of being 'on the mobile' You may call anyone at any time wherever you may be, but they may also call you. Mobile technology may free people to work in new ways, but it also allows work colleagues equal freedom to track them down. Not being available, by turning a phone off, can simply store up a voicemail bottleneck to be dealt with later. Being available quickly becomes being on call.

As Jack the plumber commented as he reached the end of the day: 'We should be finished by about 5pm as long as I don't get a call coming onto this thing [pointing at his mobile].' A phone call could mean another job, but also a longer day. There are practical reasons for controlling ▶

The importance of being mobile

connectivity that boil down to simple requirements: ending the day, finding a quiet moment, or wanting to leave work in the office and not bring it home.

Mobile manners

There are also contextual constraints on connectivity. Mobiles are just that – mobile – and can be used in a wide range of contexts. But not all people feel happy to use their phones in all contexts all of the time. Much of this pressure stems from the fact that mobile phones erode boundaries between different places, and between different groups of people. They allow users to connect disparate areas of life, but also allow disparate areas of life to turn up unannounced. This erosion of boundaries in turn requires management. For Darius, his mother's constant calling threatens his sense of independence. For others, a phone ringing in the evening blurs work and home life, and requires, as a focus group participant note, firm action: 'Mine is turned off as soon as I get home. I don't want people from work calling.'

For others, a mobile phone has the ability to disturb a peaceful moment. For a woman in Manchester this meant: 'when I go to the park I turn the mobile off… I want peace'. These users maintain boundaries by controlling the connectivity offered by their phone.

This need to control connections has seen the invention of a number of

competing mobile etiquettes. This can create problems, not least when a user is confronted with another user who adopts a different set of manners. For instance, how would you feel if the person you were talking to put you on hold? Do you think it proper to answer a mobile call while at the dinner table? Should a work colleague be frowned upon for taking a quick call while in a meeting? Is it proper to answer a voice message with a text message? These cellular conventions remain up for grabs.

Denise, for instance, is perfectly happy to phone her husband on her way home in the car, but is left cold by the thought of her phone ringing at the supermarket checkout. During our focus group research a woman in the Midlands agreed: 'I'd die if my phone went off in public.' In this way controlling connectivity is also about learning to cope with the use of a private medium in public places. For others, such as this respondent in a London focus group, attitudes evolve as their own use of, and dependency on, their phone develops:

I can't believe how I've taken to a mobile phone … I used to hate mobile phones … you used to be in restaurants and people would get called and you thought "what the bloody hell is going on here?"'

As this comment suggests, there is also a highly social element to the control of connectivity. Some consider it rude to

talk on a phone during a conversation with someone else. For many people using a mobile phone during dinner is as bad as eating with your mouth open.

This need for control came across frequently during our research. Darius, for instance, controlled his calls to the extent that it occasionally frustrated attempts to understand his mobile phone use. He insisted on switching his phone off to avoid disturbing conversations with the researcher. During our research we were initially surprised that the person who knew the most about mobile technologies was also the most willing to turn them off. Upon reflection, however, his confident control of his mobile was in keeping with Darius's effective domestication of the technology in his life.

Environmental control of connectivity imposes on us a collective desire for lack of disturbance. In cinemas, churches and other gatherings proceedings begin with an injunction to switch off mobile devices. Management edicts are now needed to persuade workers not to leave their unattended phone ringing on the desk. The common good is consistent, these examples suggest, with considerate connectivity. This may be a peculiarly British response. In the UK these concerns have seen the rise of opt-out environments, such as mobile-free carriages on trains, which cater for the ▶

The importance of being mobile

desire to escape our connections, and the inconsiderate connectivity of others.

More conversation is better conversation?

Such considerate communication suggests that the traditional mobile story of exuberant communication may need revising. Communication for its own sake – the type of small talk discussed in Chapter 3 – does not come without consequences. Indeed, our research suggests a counter-current. Abstaining from constant communication can become as important as engaging in it. Those who opt out of the mass mobile culture are a new incommunicado elite. For Jack, now his plumbing business is booming, being available is no longer important. In fact, it's an inconvenience and one that a thriving plumber like him can avoid.

Thus the control of connectivity and the invention of mobile manners can also be about making communication count. Previous iSociety focus group research found that for many, particularly older, users more mobile conversation does not mean better conversation. All the adults we encountered sensed that mobiles could result in talk for its own sake, and this was not always seen as positive. They expressed this as a matter of economics (talk isn't cheap), irrelevance (talk is tenuous), and disturbance (talk is trouble). They also pointed to the fact that mobile talk is not always quality talk. A man in our

Manchester focus group put this most bluntly: 'Before mobile phones people used to communicate much better.' If the young see the limits of their phones, older mobile owners are often more caustic still. One pensioner interviewed in Manchester, a mobile phone owner himself, said simply that mobile phones meant that people were 'losing contact with each other'. The sense persists that more ICT-mediated communication does not equal better communication.

More widely, as older participants in our earlier qualitative research indicated, phones can symbolise and typify a lack of the one thing that they are designed to enable: communication. For those of a more nostalgic or critical bent, mobile phones are the obvious symbol of a world of inconsequential conversation, of perpetual distraction and hot air. They are a clear reflection of a world in which chatter pervades. This babble in turn bothers people who see mobile conversation as a poor substitute for face-to-face meetings within more traditional models of community.

Mobile meanings: phones as symbols

Mobile phones have many meanings. Just like cars or home interiors they act as symbols, reflecting the personalities of their owners. How can such a small thing mean so much? It is partly because mobiles are 'up close and personal'

technologies, used frequently, socially and in public. Our ethnographic research demonstrated that for a variety of individuals and their families their phones could symbolise a wide range of experiences, lifestyles and outlooks on the world.

For Jack the plumber the meaning of his mobile has shifted considerably over time. His first phone symbolised business independence and reflected his entrepreneurialism. For Darius, whose attitude towards technology was one of competent nonchalance, his phone was a symbol of practical utility: a device whose meaning was conferred by what it enabled for him, a freelance business lifestyle.

It is also common for mobile phones to act as status symbols, although our research suggested that having the latest new model is becoming less important. Over the last five years mobile phone design has improved and previously bulky devices have shrunk. Because of this it is now more difficult to find a phone that is demonstrably 'cooler' than others on the market. Indeed, the latest advanced models (with cameras, colour screens, or MP3 players) tend to be larger than those that they replace. Therefore the decision to upgrade is now more complicated, with users having to make a decision between size, design and functionality. We also detected a sense in which the cost of ▶

Abstaining from constant communication can become as important as engaging in it.

The importance of being mobile

Mobiles act as a means of bridging gaps in everyday life, co-ordinating arrangements and bringing people together.

upgrading to the latest model outweighed the symbolic value of having it.

Other users are less interested in style. Being a single mother Louise saw her phone as a symbol of safety. As she said: 'With no man in my life, my phone gives me a feeling of security because I know my ex is at the other end of the line.' Denise, on the other hand, sees her phone as a symbol of family togetherness. The screensaver provided by her daughter's phone, for instance, symbolises both youthful vitality and her role as a mother in touch with her children.

Our research suggests that both adults and children are aware of the symbolic potential of phones. However, with their strongly held views about phones and their propensity to customise, it became clear that children have a sharper understanding of how to manipulate this potential. They actively use phones to communicate who they are.

For Louise's children, having a phone means many things, not least being 'connected youth'. The phone provided access to a world of text, jokes and gossip. Having a phone allowed them to feel like grown-ups, symbolising entry into the independence and freedom of adulthood. Their phones also allow their mother to 'let them go out', while reconfirming their status as teenagers by giving their mother a direct line in to them while they are away from home.

Adults, on the other hand, are more likely to focus on the practical aspects of their phone, regarding it as communication medium first, symbolic object second. As the example of Jack, Denise and Louise makes clear, while they know that their phone 'says things' they don't actively exploit this to the same extent as their children – they have neither the time nor the inclination to do so. 'It is', as Jack says, 'only a phone.' That said, the adult participants in this study all showed behaviour that reflected awareness of the symbolic potential of a mobile phone. Jack had recently upgraded his phone. Denise wanted a new phone, although she seemed more concerned that her son received the one that he had set his heart on. Finally, Louise had recently changed handset because she wanted a new, smaller and more modern handset.

If our research suggests that what phones mean is up for grabs, it also suggests that their meaning can change over time. It is clear that the meaning of Jack's phone has changed. He was aware that his first phone could send the wrong signal to his clients, namely that a mobile phone-owning plumber was likely to be charging too much for his services. Jack's first phone made him a yuppie plumber. He kept it from view precisely because his customers would equate it with high prices. As ownership became more widespread (and the devices grew smaller)

Jack felt comfortable wearing his on his belt. The same issue of a mobile phone as success symbol now confronts Jack when he thinks about buying an MMS Picture Phone. He feels that buying such a phone would look too flamboyant. This problem presently overrides the practical utility of a device that would allow him to take pictures of problems 'on the job'. His Nokia 5210, with its splash-proof cover and large memory, expresses his identity more accurately: a successful plumber with lots of friends and customers. He will wait until such time MMS phones become more common, and more socially acceptable, before upgrading.

The mobile family

The OXO family is now a mobile family. Our research suggests that families use mobile phones as an army on the move uses a pontoon bridge. Mobiles act as a means of bridging gaps in everyday life, co-ordinating arrangements and bringing people together.

For Denise, the mobile phone was the central tool for household management. The household – like a unit in the battlefield – needs good communication and back-up to shop, work and play. Mobiles provide a family like Denise's with accurate and time sensitive 'human intelligence' on the comings and goings of her family, quickly making it part of the infrastructure of her household. ▶

The importance of being mobile

Mobile phones create the space for parents to give their children more freedom. For Denise, the mobile allows her to provide her children with the freedom to do things on their own. At the same time it gives the peace of mind and reassurance she also requires.

Denise is wondering where the children have got to. Her youngest son had gone swimming with friends near Saddleworth and 'they should have returned by now' she thought aloud. He doesn't have a mobile phone, Denise muses, but shortly afterwards the phone rings. The boys have used a last 20p to make a call from a phone box to say they're getting a lift with a friend's friend. Denise worries but is at least glad to have been in contact with him, and when he's a bit older, she says, she'll get him his own phone, now he's going out on his own a bit more.

Mobile phones support the ability of families with children to move between independent behaviours and more supervised activities. They allow children to be free of parental supervision, and yet also allow parents to re-establish control at any time. This supervision cuts both ways, as Denise recognised. As she leaves the house she notes that her children know she's on the mobile. In other words, they know that they are able to call her if they need to. For Louise, the use of mobiles, with one for each of the older two children and the younger boys sharing, allows her to bind

her family unit together and keep tabs on the children when they're out and about in a rough part of London.

Many household technologies promote separation within families. Households with numerous television sets are an obvious example of this. Both Louise's and Denise's children had TV sets and video recorders in their rooms. They often used their TVs or game consoles to entertain themselves in isolation. We observed that mobiles frequently counteracted this tendency, acting to tie together disparate areas of family life where previously no connection would have been available. For instance, Denise's phone tied her to her daughter in the evening as she sat on the stairs or sofa in the lounge making her 'free calls'.

Mobiles are highly elastic devices that allow their owners to seamlessly but very creatively negotiate the dual desires of sociality (meeting friends, chatting, making arrangements, staying in touch through text messages) and their need to live independent lives (out on the road for work, shopping in town on a Saturday or a trip to the swimming pool with friends). For the young boys and girls in Denise's and Louise's families, and for Darius the freelancer, mobile phones allow for this neat switching between the peer groups or private worlds and the demands of family and business.

Reports that family conversation is dying

appear unfounded.[53] Our survey evidence, and the findings of our ethnographic research, suggests that conversation within the family is fuelled by the use of mobiles. These may be limited to the exchange of quick messages, like Ben's 'I've finished work at the pub, can you come and pick me up?' or a brief call to check that all is well with children left behind at home. But communication is happening. It acts to strengthen links between families, increase mutual dependence on each other, and makes respondents more aware of the fact those other members of their family 'existed'.

As with many aspects of life with mobile phones, however, this is not necessarily always seen as positive. For Darius this awareness was an annoyance. The frequent calls he received from his mother reminded him that, in her eyes, he was not yet an adult. Despite this it was clear that the families we visited had adapted their behaviour to the existence of mobile phones, and used them to tie together the loose ends of family life. Ultimately the phones provide a double and often contradictory function. On the one hand they allow their users individual freedom, while on the other they can offset this by improving connection within a family group.

Mobile attitudes: fear, function and fun
Finally, our qualitative research continues to highlight age as the most defining aspect of a mobile attitude. We found ▶

The importance of being mobile

evidence to substantiate findings from previous qualitative research[54] suggesting that mobile users of different ages can be broadly characterised by three different dominant attitudes towards their mobile phones: fear, function or fun. These three different 'mobile attitudes', although only broad reflections of general attitudes, show how different age groups relate differently to mobile technology and its functions.

Elderly users are least comfortable with mobile technologies. They associated them with a number of different types of fear or anxiety. Users worried about the phones themselves, complaining that they sometimes did not feel comfortable with the look and feel of the interface. There was also a strong fear of social disconnection that promoted the use of the phones, particularly with younger people (i.e.

grandchildren) who were thought to use mobiles in a quite different way. Finally, elderly mobile users were more likely to cite personal safety, or the need to be aware of the wellbeing of others (children, grandchildren, spouses) as a dominant reason for using or purchasing a mobile telephone. This group rarely used text message services.

Adult mobile users of working age expressed a predominantly functional relationship with mobile telephones. When asked the question 'would it be a problem if we took away your mobile phone?' the general answer was 'yes', because they would not be able to do certain things. The dominant functions were organising work or family life, normally related to contacting work colleagues or family members. Text

messages were used intermittently by this group, often simply as an occasional experiment.

Younger mobile users had a quite different relationship, seemingly based around a playful relationship with technology. The use of mobile phones was highly functional, and often highly sophisticated. However, the function of organising social life or keeping in contact with friends only partially explains a deeper and more creative rapport. When asked the question 'would it be a problem if we took away your mobile phone' the general reaction was a strong 'yes', because using the phone was enjoyable in addition to being essential for organising social life. This group were likely to text message heavily.

These findings from our ethnographic research provide a more complete picture of the ways in which normal users use, and relate to, their mobile phones. To complete this report, we now must ask how these attitudes and behaviours will influence the future. ◻

Chapter 6
What's next?

'The [landline] telephone has achieved a rare and exalted state for a technological artefact. It has become a household object. The telephone, like the clock, like pen and paper, like kitchen utensils and running water, has become a technology visible only by its absence… The telephone is almost entirely invisible to its users.'[55]

BRUCE STERLING,
THE HACKER CRACKDOWN

The mobile phone makes an intriguing contrast to the quote above. On the one hand, it has become an everyday object owned by most people. Not owning a mobile phone is now an oddity, marking out either idiosyncrasy or conscientious objection. Yet, as our research shows, mobile telephones remain highly visible. Their owners have strong opinions about them: they are frequently discussed, and remain a bone of public contention. It is a technology used in public spaces, among groups of people. It remains highly visible. It stands out, even as it blends in.

Yet even this relatively new technology will be changed significantly in the coming two years. Enhanced second generation (2.5G) phones have already extended what mobile phones are capable of. They offer improved rates of data transfer (meaning users can download things slightly quicker) and have been augmented to include the ability to take and send pictures. Third-generation (3G) phones will become available, on current predictions, some time in the next 12 months. The first such service – from Hutchison Telecom – is being marketed at the time of writing this report. 3G promises higher speed, always-on data connections. It supports applications that use much higher connection speeds, including video messaging and more advanced internet access. To complicate matters further, Wireless Local Area Network (WLAN) internet access technologies – particularly the 802.11b standard known as Wi-Fi – have begun to allow access based around specific hubs in urban places like hotels, cafes and airports.

This new technological environment will have to fit into a legacy of behaviours, spending patterns, device ownership and technological attitudes built up around mobile phones over the last decade. This will condition the way British consumers choose to use mobile devices in the future. To put it another way: the practice of the present will define the technology of the future. We conclude *MobileUK* by ▶

What's next?

looking at the example of Japanese mobile culture, the continued importance of voice telephony and mobile finance, before suggesting some predictions that can be made about this changing mobile environment.

Japan: lessons to be learnt?

As has happened before on many occasions, Japan has become a navigation beacon for those seeking to understand how technology diffuses through society.[56] Can the Japanese example give clues about future change? Japan has a booming mobile internet industry, with growing numbers of subscribers and sustainable business models. The icing on the cake is a highly vibrant mobile culture. The growth of mobile in Japan has been exceptional. Personal ownership of phones was illegal until 1995. Previously businesses keen to deploy mobile devices were forced to lease handsets.

Between this legislative change and December 2001, Japan gained 60 million phones users. Of the various companies providing services (such as KDDI's EZ Web or J-Phones J-Sky) NTT DoCoMo's I-mode is the most influential. I-mode, the mobile internet service provider, which is in danger of becoming the generic term for mobile internet in Japan, is a craze which has lifted wireless services out of the grey talk of 'services and applications' (which dominates industry discussion in the UK)

to become a cultural phenomenon in its own right. It has spawned an entire 'mobile world' that extends far beyond the devices themselves. What factors lie behind this phenomenon? The usual answers given are a combination of the following: first, Japanese technology culture is keen on cute gadgets; second, urban homes are too small for large computers; and third, standard internet penetration is low in comparison to the West.

Look a little further, however, and the relationship between public and private is clearly visible at the heart of the Japanese mobile experience. On the one hand, mobiles are a very public craze; mobile style accoutrements are part of the everyday wardrobe for keitai (mobile) kids. The vogue of mobile culture fits seamlessly into a long line of highly public (and publicised) crazes from video games and ripped Levi's to Tamagotchi. Sadie Plant's Motorola report[57] notes that Japanese youth often use their hands to cover their mouths while speaking on mobile phones. The tension between public craze and the lure of a private world is writ large on the bodies of Japan's mobile youth. Privacy and notions of private space apart, another commentator has said: 'The one thing you rarely see anyone do with a cell phone is talk, since imposing yourself on the people around is considered rude.'[58] The 'manner mode' on mobile devices that diverts all

calls to answer phone demonstrates that technologies bear all the hallmarks of the cultures they inhabit.

However, some lessons are worth noting. Mobile internet in Japan is not, and was not, advertised technologically. Indeed, in her book *The I-Mode Affair,* I-Mode founder Mari Matsunaga stresses that the company tried very hard not to mention the internet at all. The 'I' in I-mode stands for information. (It is salutary to note that BT Cellnet's WAP advertising tried very hard to mention the 'mobile internet' at every turn). Japan's experience makes it clear that speed of connection is not everything, and that people will pay for fun, function and fad. (In fact, download speeds are one sixth of that experienced on a typical 56k PC modem and it takes about an hour to download a single mp3 file.) None of this has hampered the growth or popularity of the services available.

Despite the creative energy of the developer community, Japanese mobile culture has tended to focus on maximising reach (or mobility) rather than richness of content. Keitai (portable) devices combine, in one sleek package, the three functions: the cell phone, handheld computer and wireless email receiver. Japanese consumers have refused to compromise on reach, and thus accept that the size of the device limits the sophistication of available applications or data services ▶

What's next?

when compared to more advanced handheld devices. This compromise is partially responsible for the mobile revolution in Japan. It is at odds with the European/US desire to hold on to richness and maintain reach.

Thus, Japanese mobile development holds some salutary lessons for the UK mobile market. However, it is equally important to see that other countries' models are neither directly comparable nor copyable. Japan's mobile success is partly explained by things the British cannot mimic: cultural heritage, urban environments and the penetration of other technologies. It may be no coincidence that DoCoMo's overseas investments have been less than successful. We should in turn be wary of holding up examples from other countries, particularly before we understand our own mobile legacy.

Look who's still talking

Despite the excitement over Japanese-style mobile internet services, voice telephone calls are likely to remain the dominant use of mobile phones for most people. Amidst the various predictions over the future of 3G services and the potential for wireless internet, this basic insight tends to be overlooked. More generally, mobiles have prospered in an environment in which communication in general has flourished. Current trend evidence gives no reason

to think that the rise in call volume seen during the course of the 1990s will stop.

The only segments of the population who show resistance to mobile phone ownership – the very lowest socio-economic group and the over-65s – are unlikely to adopt quickly for reasons of economics and personal preference respectively. However, as the population ages we can expect mobile phone penetration gradually to reach about nine in ten of the population. And as the talk-happy 16-24 group ages, they will drive an upward rise of communication. As the quantity of conversation rises, no one will expect the quality (or importance) of such conversation to follow. Managing 'always-on' communication will become, for heavy users at least, the issue of the day.

Evidence suggests that mobile phone users do not use many of the functions already available on their phones. Although most phones sold in the UK last year had WAP capability, only around one in ten users actually accessed this form of cut-down mobile internet. Indeed, most of the functions on current mobile phones go unused: ring tone downloading (12%), calendar functions (11%) automated text services (9%), and downloaded graphics (9%) all remain minority pursuits. More than half of mobile phone users use none of the extra services available to them on their current handsets beyond making

calls and sending text messages.[59]

This suggests that consumers often do not make use of a service or function simply because it is available. The mobile market is likely to see a two-tier upgrading pattern. Younger users and those who use their phones extensively within businesses are the heaviest mobile users, and are also the most likely to want to update to a more advanced model. They are also more likely to suffer an involuntary loss, breakage or theft of their mobile – resulting in the need for a replacement phone. Older mobile owners are much less likely to want to update to the latest model.

Ignoring functions on a mobile phone can be seen as a reaction to their increasing complexity. Equally, mobile phone users appreciate or reject the phones themselves because they tend to make the lives of their users more complicated. Being able to communicate on the move provides more opportunities to communicate. Hence, mobile phone users communicate in situations that they previously did not. This has consequences.

First, tasks can be organised on the hoof: things that previously required more careful planning can be done later. Second, tasks can be juggled more effectively, allowing us to keep more 'tasks in the air' at one time. These extra tasks, kept in the air by a greater ability to communicate and manage, make the lives of their users more ▶

Japan's mobile success is partly explained by things the British cannot mimic: cultural heritage, urban environments and the penetration of other technologies.

What's next?

Basic finance will remain a significant barrier to consumer take-up of new mobile services.

complicated. Thus mobile technology gives freedom on the one hand, and increases complexity on the other. In the future this tendency towards complexity can only be expected to increase.

Some users will react to this by increasing their usage. Many of us know someone who first bought a phone only for emergencies, or only to receive calls. Such people are gradually seduced, and end up talking and spending more than intended. Intel researcher John Sherry suggests this when he described mobile work as a 'struggle for balance', saying that work with mobile technology has a jazz-like quality of improvisation.[60] Our research suggests, however, that this is not the case for all users. We did find that one of the families we talked to did exhibit similar patterns in the management of day-to-day life. However, others we spoke to specifically rejected the ad-lib approach, and the technology that came with it. They recognised that mobile phones could

make their lives more difficult, and took steps to avoid their effects.

Money matters
Our research suggests that the financial condition is the most important. The changing mobile settlements, and the hopes of the industry, rest on people's ability to pay. Received wisdom disputes this. It is often suggested that marketing digital mobile services will be easier than web-based services. Mobile consumers, so the story goes, accept they must pay for what they get; internet surfers expect everything for free. By contrast, our research suggests that basic finance will remain a significant barrier to consumer take-up of new mobile services. The people we spoke to were highly aware of cost, and took steps to try and minimise their expenditure. The basic mechanics of phone finance remain high in the minds of the majority of users. There is very little reason to suggest that mobile consumers will blithely cough up for services they don't want. This does not

mean that people will not pay for the things they do want, as the now billion-dollar industry around ring tones proves. But it does suggest that operators need to be cautious when predicting how willing customers will be to pay more.

One particular problem is getting users to move beyond pre-pay. As discussed, pre-pay users make up the majority of mobile phone users. They spend, on average, around half as much as those on contracts. OFTEL figures suggest that only high-spending sections of the mobile market have changed in large numbers from pre-pay to contract. Admittedly these might be the type of users who will adopt next-generation mobiles early. But the challenge remains to convert the rest. Our research suggests that users stay pre-pay for very sensible reasons. Things that might be thought of as a painful consequence of pre-pay – topping up cards, running out of money, looking to see how much is left – are actually useful. ▶

What's next?

They help users keep in touch with how much they are spending. They reflect the fact that many people do not trust themselves to talk affordably. In so doing they help in the budgeting process. Yet many advanced services (such as MMS) are not available to pre-pay customers, and the industry is attempting to persuade users to convert. But it may be that because of these everyday benefits, it will be more difficult to wean users off pre-pay than is commonly assumed.

This presents a number of problems. First, mobile phone operators need to recoup the costs of their investment in next-generation technology. This creates a different situation from the mid-90s, where a rush for market share dominated the mobile marketplace. Attempts to gain market share, basically by persuading customers to buy their first mobile phone, led operators to give competitive rates, often at a loss. The current combination of tough market conditions and existing customer bases is likely to lead operators

to price data services more realistically. The current promotion of picture messaging will be a case in point. Operators attempted to persuade customers to buy picture phones with the promise of free MMS for a few months: it remains to be seen what effect the reintroduction of charges will have.

Second, it is not clear on what model data services will be charged. Operators can choose from a variety of pricing models, from flat upfront fees through to payment based on the amount of data sent or received. Yet, as our discussion of pre-pay tariffs suggest, consumers get attached to known methods of payment. Alternatively, it may be that they must overcome switching costs, either psychological or financial, before changing. Yet the more important point remains: consumers change their behaviour to suit the method of payment they currently use. This in turn means they are unwilling to change, even if evidence suggests they will save money. And, despite being highly

aware of the cost of their phones, few mobile users regularly switch tariffs, or move off pre-pay, in search of the best deal. This suggests that new ways of paying for digital mobile services might not be popular with consumers used to paying in a certain way.

Third, new mobile phone services are likely to increase the bills of customers. Operators assume that voice and data services will not compete: just because a user is sending a picture does not mean they will decide not to make a call. This is a relatively sensible assumption. However, the consequences for phone bills could be severe. Given that the average pre-pay customer spends around £15 per month, even a small amount of data traffic priced at realistic levels is likely to result in noticeably heavier bills. Although the industry ARPU measure – Average Revenue Per Customer – has been creeping up recently [61] the rise has been slight. The type of cost increases that data services might need to be profitable could prove ▶

What's next?

New types of expensive mobile service need not only be compelling in their own right, they must also be more compelling than other unrelated things which add up to the family or business budget.

unacceptable to customers.

This leads to a fourth and final problem. Mobile phone payments exist within a business or family environment in which money is often tight. Most users are aware of what they pay for mobile services, and this money in turn competes against other priorities for expenditure. Thus new types of expensive mobile service need not only be compelling in their own right, they must also be more compelling than other unrelated things which add up to the family or business budget.

These four problems combined suggest that mobile operators must be realistic when making assumptions about how much consumers of future services will be willing to pay. Mobile phone 'bill shock', when users were horrified at how much they managed to run up by using a phone, could make an unwelcome return in the context of data services.

What will succeed?

It is clear that mobile internet services will have to be compelling, relevant and cost effective in order to succeed. This is particularly because the mobile market is moving from a situation of relative stability to one of increased complexity. This complexity will come in a number of forms. First, there will be more and different types of mobile devices. These will include mobile phones with added functions, like the currently available picture phones and long-awaited videophones. Second, phones themselves are likely to become more complicated, as manufacturers seek to pack more and more functions into one package. Third, new devices will, in theory at least, also use wireless technologies (such as the cable replacement technology bluetooth, or wireless LAN standards like Wi-Fi) to link to the internet and each other. Finally, all of these will be able to access internet services, or wireless internet services, which allow users to surf, send and receive pictures or video, download email, and so forth.

Which of these data services are likely to succeed? Our research leads to a number of conclusions. First, mobile users are most likely to use future services that are **closely associated to specific tasks and functions**. Just as Jack the plumber suggested that picture phones would be useful in his job, so we expect other services which meet already existing needs to become popular. Employees at Wiltshire County Council now use picture phones in this way, taking pictures of fallen trees and sending them immediately to colleagues to help assess the type of response needed. 'This phone is invaluable', one tree surgeon said when interviewed, 'I've only been using it a month and already it has saved me thousands of pounds.'[62] Such functional use need not be work-related. Technology commentator Bill Thompson notes that picture phones could become an extremely useful way for parents to check up on the location of their children by getting them to send pictures of where ▶

What's next?

they are.[63] But it is these types of use, closely associated to need and function, that stand the highest chance of becoming popular.

Second, services that **exploit social network effects** are also likely to be popular. By this we mean services that become more useful the more people have them. Because of this, mobile content is likely to be more compelling the more it is generated 'bottom-up' by users. Services that allow users to communicate with each other in new ways – either on a one-to-one or one-to-many basis – are likely to be more desirable than those that invite users to draw down content from a central provider. The popularity of both mobile phone calls and text messages is rooted in their ability to connect one user to another. Attempts to develop mobile phone services (WAP and GPRS) where users simply consume content from providers have been less successful. In

cases when this has worked, for instance in the case of ring tones or screen savers, the ability to share and pass on has been equally important. Thus the mobile industry is well advised to ensure that its future services are allowed to share such 'social content'.

Third, future phone services will succeed only if they are **competitively and clearly priced.** As we have suggested, the majority of mobile users are sensitive to cost. Moreover, although mobile users are used to paying for services, they have also paid for these services through convenient monthly bills provided by mobile phone companies. Services that deviate from this model – either because users are expected to pay individual suppliers for content, or because the payment mechanism is confusing – can expect low take-up.

Fourth, future services are likely to succeed to the extent that they target users' **mobility,** and specifically the times and places in which they are mobile. For

instance, news services on a mobile phone are not a compelling proposition if a user can get news at other times when they are elsewhere. Why pay to get news headlines on your phone if you are shortly going back to an office computer with internet access, or if you have already bought a newspaper? Yet certain services based around time (videos of football goals at the end of the match) or place (the ability to buy cinema tickets, or to get transport information) are much more plausible.

Finally, any services that tempt users to transact using their phones will have to be **simple and work properly.** For instance, early industry dreams that millions of people would replace their credit cards with mobile phones quickly vanished when it became clear that m-commerce services were overly complex, and did not meet any immediate consumer need. M-commerce m-ploded almost as quickly as users decided that WAP was crap. Any future attempt to introduce advanced ▶

What's next?

In an environment where voice remains important, there is likely to be an intolerance of phones that try to do everything – phones will remain, above all, phones.

services before they work to consumers' already high expectations is likely to fail just as quickly. However, in an environment where voice remains important, there is likely to be an intolerance of phones that try to do everything – phones will remain, above all, phones.

Conclusion: 2G is like narrowband, 3G is like broadband?

These five factors are rules of thumb for future mobile services. Yet the fast take-up of second-generation mobile telephones creates what is likely to be an unrepeatable precedent for future mobile services. It is clear, as we have argued, that mobiles reached a tipping point in the latter half of the 1990s. British users adopted mobile phones in huge numbers. The major consequence of this was that people spent more time on the phone, doing so in different places and for different reasons than before.

The same was broadly true of fixed internet access in the same period, with

access going from almost nothing to nearly half the population in a five-year period. The final suggestion of *MobileUK* is that this sort of growth is unlikely to occur again. Instead, the move from the present generation mobile telephony to the next is much more likely to follow the gradual upgrade from narrowband to broadband.

Broadband has not been adopted as quickly as initially hoped. This is largely because users of narrowband internet got used to their existing service, and consequently did not see a compelling reason to upgrade.[64] In addition, in the early stages of the market, the product was uncompetitively priced. Finally, broadband itself does not offer a compelling single application. Instead it helps internet users to achieve tasks on the internet quicker and easier. There is no single killer application.

We suspect that the move to next-generation mobile networks will exhibit similar characteristics. 3G and other

services will offer a range of new possibilities, but they are unlikely to offer one single compelling application that will be relevant to all mobile phone users. For instance, even if picture messaging does begin to strike a chord with consumers, it is unlikely to prove as compelling a single application as voice-telephone calls proved for second-generation phones. The same is true for mobile gaming, video or information services. As such they are much less likely to express the same sort of network effects that made mobile voice telephony attractive in the first place. Precisely because future mobile services will be varied, and adopted according to the specific needs of users, they are less likely to create one 'must have' application. This suggests that the combination of effects which caused the late 90s boom in mobile phones – simple devices, low-cost barriers to entry and social network effects – are unlikely to be repeated.

What's next?

Similarly the behaviours associated with current mobile phone users are as likely to create barriers to upgrading as they are to encourage it. The types of mobile habits outlined in this report will prove surprisingly durable: people are now used to acting in certain ways. Future mobile services that expect users to change their behaviour quickly will find breaking these habits difficult. There is a particular problem for the mobile industry in this attempt to change the habits of its users. While business users tend to have the mind and the means to experiment with new services, the other key group – mobile users in their teens and twenties – are also those who are least easy to impress, and who have often little money to spend. Many of the classic early adopters for mobile services are therefore the least likely to adopt, at least in the short term.

The lack of a single universal application – such as mobile voice or, by analogy, email – combined with the peculiarity of mobile demographics also suggests that adoption of services will be highly uneven at first. Those with plenty of disposable income, or who find mobile data services useful for work, are likely to adopt advanced services. But it seems improbable to suggest that the rough third of mobile users who have never sent a text message will move quickly to take up more complicated data services. As with broadband, we can expect to see a re-emergence of a significant usage divide, with a minority of mobile users enjoying the freedom of the mobile internet, and the majority making voice calls and little else. Despite this, we will shortly enter a world in which internet-enabled mobile phones outnumber internet-connected PCs, and in which there will be more mobile phones than landlines worldwide.[65] Ultimately, this presents the mobile industry with an opportunity. If it prepares for a gradual shift to more mobile patterns of technology, and understands that any services need to be carefully targeted to the everyday needs and habits of ordinary people, then it will make a convincing case for technology's positive benefits.

Alternatively, if they attempt to push technology for its own sake, they will find that people like Jack, Denise, Louise and Darius prefer to continue using the technology they already have, and that this makes sense to their lives. In this way, understanding how technology will fit into the everyday lives of such users will make or break a truly technologically mobile society. ◻

Future mobile services that expect users to change their behaviour quickly will find breaking these habits difficult.

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Authors

James Crabtree and Max Nathan work on the iSociety programme at The Work Foundation. Dr. Simon Roberts is iSociety's ethnographer in residence.

The authors would like to thank John Curran for his work during the ethnographic research for this report. We are also grateful to Gwendolyn Carpenter, Bruce Davis, William Davies, Katharine Goldsmith, Dr. John Knell, Kate Oakley, and Kylie Menz for comments, help and advice.

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telephone +44 0 20 7004 7100
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