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**The Apple iPhone:
Successes and Challenges for the Mobile Industry**

A study of iPhone users

March 31, 2008

Quick Facts

The Apple iPhone is easily the most publicized new mobile device in recent memory. But despite all the discussion about the product, there's relatively little hard information available to the public on its impact. How is it being used? What effect is it having on customers and on the technology industry?

To help answer those questions, Rubicon Consulting conducted a detailed survey of 460 randomly-selected iPhone users in the US. This report summarizes the findings from the survey, and what they mean for users and other companies.

Here are some of the key findings:

- **iPhone users are very satisfied.** The iPhone users we surveyed report very high levels of satisfaction with the product. They are using its features extensively. (Page 12.)

- **E-mail is the #1 function.** The most heavily used data function on the iPhone is reading (but not writing) e-mail. (Page 13.)

- **The iPhone increases mobile browsing...** More than 75% of iPhone users say it has led them to do more mobile browsing. (Page 14.)

- **...but it has drawbacks.** About 40% of iPhone users say the iPhone has trouble displaying some websites they want to visit. (Page 25.)

- **The iPhone is expanding the smartphone market.** About 50% of iPhones replaced conventional mobile phones, 40% replaced smartphones, and 10% replaced nothing. Among conventional phones, Motorola Razr was the phone most often replaced. Among smartphones, Windows Mobile and RIM Blackberry were most often replaced. (Page 19.)

- **A third of iPhone users carry a second phone.** There have been anecdotal reports of iPhone users carrying a second mobile phone, either for basic voice calling, or for other functions like composing e-mail. The survey confirmed those reports. (Page 20.)

- **A quarter of iPhone users say it's displacing a notebook computer.** 28% of iPhone users surveyed said strongly that they often carry their iPhone instead of a notebook computer. (Page 22.)

- **Users are young.** About half of iPhone users are under age 30 (page 29) and about 15% are students (page 31).

- **Apple sells to its installed base.** At least 75% of US iPhone users are previous Apple customers -- they used either iPods or Macintosh computers. (Page 28.)

- **The iPhone increases phone bills.** The iPhone has increased its users' monthly mobile phone bills by an average of 24%, or $228 extra per year. (Page 17.)

- **The iPhone leads people to change carriers.** Almost half of iPhone users changed carriers when they got the iPhone. (Page 18.)

- **AT&T's gamble pays off.** The iPhone has probably increased AT&T's gross service revenue by about $2 billion per year. (Page 4.)

Implications

What do these findings mean for the mobile industry and mobile users, and what will happen next?

Can Apple reach beyond its early adopters?

The survey showed that most iPhone users are relatively youthful technophiles; half are under age 30, and a third of them even carry more than one mobile phone. This group of customers is great for launching a product, but there aren't enough of them to create sustained growth. The biggest question about the future of the iPhone is whether Apple can reach beyond the early adopters to generate substantial amounts of mainstream demand for the iPhone.

Apple has a history of doing that successfully with products like the iPod, but that was much more narrowly focused on a single usage -- it was a mobile appliance rather than a mobile computer. The iPhone's multiple features make it very appealing to technophiles, but potentially confusing to mainstream customers. The history of the mobile industry is littered with products that sold well at first but then fizzled out. Although the iPhone's future looks very promising today, its long-term success is not guaranteed.

A good example of how to grow adjacent markets

Apple's growth in the last ten years is a case study of growing a company through expansion into adjacent markets. Apple leveraged its Macintosh installed base to establish the iTunes music store, and then built the iPod business on top of that. iTunes and the iPod enabled Apple to renew its franchise with young people, and attracted millions of Windows users into becoming Apple customers.

Now Apple is leveraging both the Macintosh and iPod customer bases to kick-start the iPhone. More than half of the iPhone customers we surveyed are iPod owners, and another 25% use Macintosh computers. Apple's large and very loyal installed base makes it much easier for the company to branch into a related market.

The lesson for other companies is that satisfying customers is about a lot more than just selling them upgrades of what they have today. Managed properly, a loyal user base is also a springboard for creating new businesses.

AT&T made a good choice

When AT&T decided to offer the iPhone, some people in the mobile industry criticized it for making too many concessions to Apple. The terms of the Apple-AT&T deal have not been released to the public, so it is impossible to judge its precise effect on AT&T. But based on the findings of our study, it looks very likely that AT&T made a good decision.

AT&T gains services revenue from the iPhone in two ways. First, the iPhone increases the average monthly phone bills of existing AT&T customers who switch to the

iPhone. Second, because AT&T is the exclusive carrier for the iPhone in the US, it causes some people to switch from other carriers to AT&T.

Based on the findings of the study, AT&T is probably getting about $2 billion in incremental yearly service revenue due to the iPhone deal, and that figure will increase as more iPhones are sold.

Here's how the $2 billion figure was calculated:

Total number of iPhones activated by AT&T to date:	3,000,000[1]
Number switching from other operators (47%):	1,410,000
Annual revenue increase from switchers (@ $97/month):	$1.64 billion
Number upgrading current AT&T accounts (53%):	1,590,000
Annual revenue increase from upgraders (@ $19/month):	$360 million
Total revenue increase per year:	$2 billion

An unannounced part of that revenue gets shared with Apple, so not all of it goes to the bottom line for AT&T. But it is still a substantial source of growth in a US mobile phone market that is saturating, and doesn't have many new users available.

These numbers mean the iPhone probably accounted for a substantial proportion of AT&T Wireless' total new subscriber growth in the second half of 2007.

A shift in power

Traditionally, mobile operators have controlled the decisions about which phones will be offered to users. The success of the iPhone in getting people to switch operators in the US shifts power away from the operators and toward handset companies that can demonstrate the ability to generate demand. A company with that power has enormous leverage over the operators, because it can play them off against each other.

However, Apple's type of product design is incredibly difficult for most other companies to imitate, because they don't have expertise in tying together OS, user interface, online services, and hardware design. The path to success in smartphones is clear, but it's not clear how many companies have the skills to walk it.

The resurrection of the notebook replacement

In the early days of the PDA market, many people predicted that PDAs would replace notebook computers. By and large, it didn't happen; a PDA was not a good enough substitute for the core things that people did with notebooks. So we didn't expect to hear that iPhone users were replacing notebooks. But to our surprise, about a quarter of iPhone users strongly said that they often carry the iPhone instead of a notebook computer.

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[1] Protection for spring 2008, based on reports that AT&T had activated two million iPhones by the end of 2007.

This statistic deserves watching. As the iPhone attracts mainstream users, will they be less willing to replace a notebook with something else? Or will the availability of third party software for the iPhone make it an even more attractive notebook replacement?

The iPhone has been viewed as a way for Apple to attack the mobile phone market, but it and its sister device, the iPod Touch, might also turn out to be a back door opportunity to take a chunk out of the PC notebook market. The PC companies should take notice.

A glass that's half full for software developers

About 40% of the iPhone users surveyed said strongly that they want to add new software applications to their iPhones. This is both encouraging and a caution for software developers. The good news is that there's a lot of demand for add-on applications, even before the iPhone software store opens this summer. That demand will only increase as store begins operation. The caution for developers is that current iPhone owners are tech-loving early adopters, the most likely people to demand new software. Even among those users, a third showed at best lukewarm interest in adding new application. That percentage will probably increase as Apple reaches out to more mainstream customers. Developers should absolutely not assume that the whole iPhone user base will be on the market for third party apps. Unlike PCs, many iPhones will never get a third party application added to them.

What the iPhone means to competitors

To Microsoft: Severe challenges. Microsoft's Windows Mobile is sandwiched between two big competitors, Google and Apple. Apple is crafting hardware-software systems that deliver a great user experience, while Google is giving away an operating system to the very companies that license Windows Mobile today. It's possible for Microsoft to try to compete on both fronts, but creating a proprietary device and at the same time selling an operating system to others is extraordinarily difficult (Palm tried to do it and ended up splitting the company in two).

We think Microsoft should probably decide whether it wants to compete in devices (in which case it will need to create its own phones, as it did for music players with the Zune) or compete in operating systems (in which case it will probably have to give away Windows Mobile for free).

Both alternatives are very high-risk, and require business models that are outside Microsoft's core competencies. The company's recent purchase of Danger, which designed the TMobile Sidekick, may indicate that it intends to go the device route.

The partial collision of Apple and RIM. Apple and RIM approach the smartphone marketplace from very different perspectives. Apple's device is entertainment-centric and, as this survey showed, it sells to young people. RIM's devices are communication-centric and have traditionally sold to businesspeople in a higher age bracket. There has been a lot of media speculation of a smartphone war between RIM and Apple, but actually they occupy very distinct territories in a highly segmented market.

But each company wants to grow into the other's space. RIM has been adding entertainment features and consumer-friendly designs to its product line, while Apple has promised to add Microsoft Exchange compatibility to the iPhone. This will create more competition between the companies.

If Apple really wants to target RIM, though, it will need to create an iPhone with a thumb keyboard, something that Steve Jobs has spoken against in the past. We don't think RIM would be wise to try to enter the entertainment market against Apple; the infrastructure investment would be too large, and besides RIM's brand image is all wrong for that. RIM would be much better served to defend and grow its business market by adding more types of business communication to the Blackberry, such as videoconferencing, whiteboarding, and business travel functions.

Will Apple and Nokia compete, or just divide the world? The iPhone is very strong in the US, but its sales in Europe have been less effervescent. Nokia is very strong in most of the world's mobile phone markets, but is just another phone company in the US.

Although Apple clearly hopes to sell the iPhone outside the US, and Nokia definitely covets the youth market that Apple dominates, the real battle between them has yet to happen. Each company faces significant challenges when playing on the other's turf. The iPhone doesn't yet take advantage of the 3G data networks in Europe and elsewhere, the company doesn't own an extensive chain of retail stores outside the US, and the strength of the Macintosh business varies from country to country. That makes it much harder for Apple to duplicate the intense buzz that the iPhone generated in the US.

Nokia's challenges are more about process. The company's habits and business practices are all optimized around producing hundreds of millions of mobile phones a year quickly and at low cost. The sort of hand-crafted hardware-software integration that Apple does has no place in Nokia's system. But without it, Nokia will be very hard-pressed to match the iPhone's user experience.

Changes to watch for

New form factors. The market for mobile data devices has always been heavily segmented, so it's impossible for a single hardware design to please everyone. The iPhone users we surveyed confirmed that -- 43% of them strongly supported making at least one major physical change to the iPhone: making it larger or smaller, adding a keyboard, or adding a keypad.

Undoubtedly there are also other customers who want those features so badly that they haven't bought an iPhone at all. This is an opportunity for Apple to increase its sales by serving those customers, or it's an opportunity for competitors to steal share by addressing segments that Apple's not serving.

Better browsers. The improved, more PC-like browsing experience of the iPhone is clearly one of its major draws. But as the survey respondents pointed out, the iPhone browser fails to properly display a lot of websites, most notably those using Adobe Flash. About 40% of iPhone users said the browser has trouble displaying some web pages they want to visit.

Apple and Adobe are feuding in public over whether and how Flash can be made available on the iPhone. The dispute punishes users and is damaging to both companies. It's also an opportunity for Apple's competitors. Until and unless Flash becomes available on the iPhone, another mobile company might be able to steal away iPhone customers by creating a better browsing device. Apple needs to continue improving the iPhone browser, and that means settling its dispute with Adobe.

For other mobile companies, we think there will be intense pressure to ship more PC-like browsers, especially in devices that have larger screens. Although many very smart observers of the industry have pointed out that the mobile web would work better if it were reformulated for small screens, that process will take years, and in the meantime a lot of mobile users appear to be willing to pay extra for mobile access to the PC web, even if it's a little awkward. Smartphone companies that fail to deliver good browsing risk being ignored by mobile operators and users.
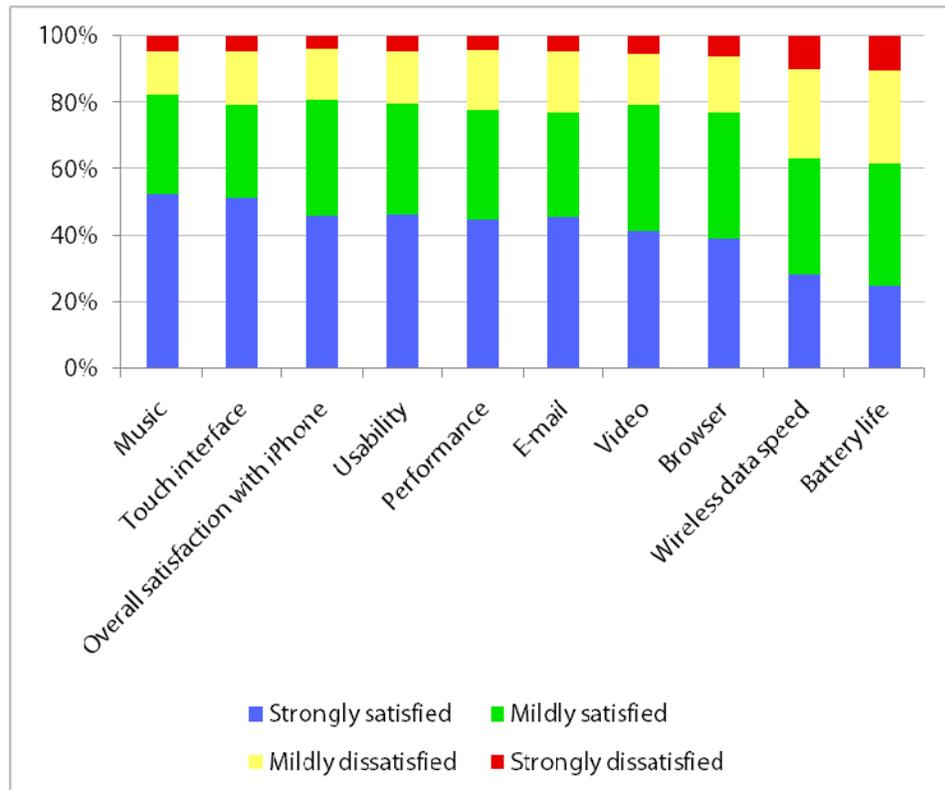
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Methodology

Rubicon Consulting conducted an online survey of 460 iPhone owners in the US in March 2008. The sample was provided by a national sampling service.

The margin of error for the survey is approximately plus or minus 3.8 percentage points at the 90% confidence level.

1. Usage and Satisfaction

Most iPhone users are satisfied

User satisfaction ratings on an 8-point scale.
Strongly satisfied = 7 or 8, mildly satisfied = 5 or 6,
mildly dissatisfied = 3 or 4, strongly dissatisfied = 1 or 2.

About 80% of iPhone users surveyed are satisfied with the device. The iPhone's music features and touch interface appear to be the most satisfying features, but the scores shown above are all good for a technology device.

Least satisfying features. Battery life and wireless speed are the least satisfying aspects of the iPhone in this survey, which is not a major surprise. Battery life is a perennial complaint for all mobile devices, and the iPhone operates on a relatively slow data network.

The browser and video capabilities of the iPhone also deserve some attention. Their scores for strong satisfaction were lower than the other features.

E-mail is the most used iPhone data function
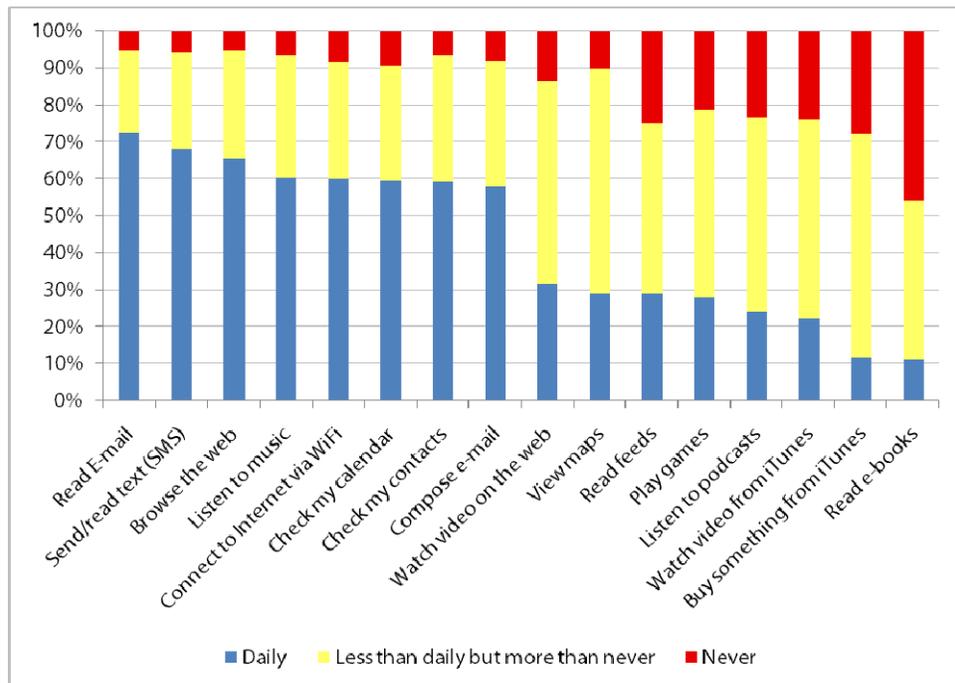
How often do you perform the following functions using your iPhone? Percent of users in each band.

Although Apple is well known for mobile music, the most frequently used non-voice function on the iPhone is reading e-mail, which about 72% of users surveyed do on their iPhone at least once a day. It's followed closely by managing text messages, browsing, listening to music, managing calendar and contacts, and composing e-mail.

It's not at all surprising that the iPhone is used less often for composing e-mail than reading it, since the device lacks a physical keyboard.

One of the most interesting characteristics of the iPhone users is how many different tasks they use it for at least occasionally. The blue and yellow bars in the chart above show the percent of iPhone users who at least occasionally use the iPhone for a given task. Even the least popular task surveyed, reading e-books, is used at least occasionally by about 50% of iPhone users surveyed. This sort of heavy usage is typical for early adopters, but still the extent of it on the iPhone is impressive.

The iPhone increases mobile browsing

Strongly disagree, 8%

Mildly disagree, 16%

Mildly agree, 22%
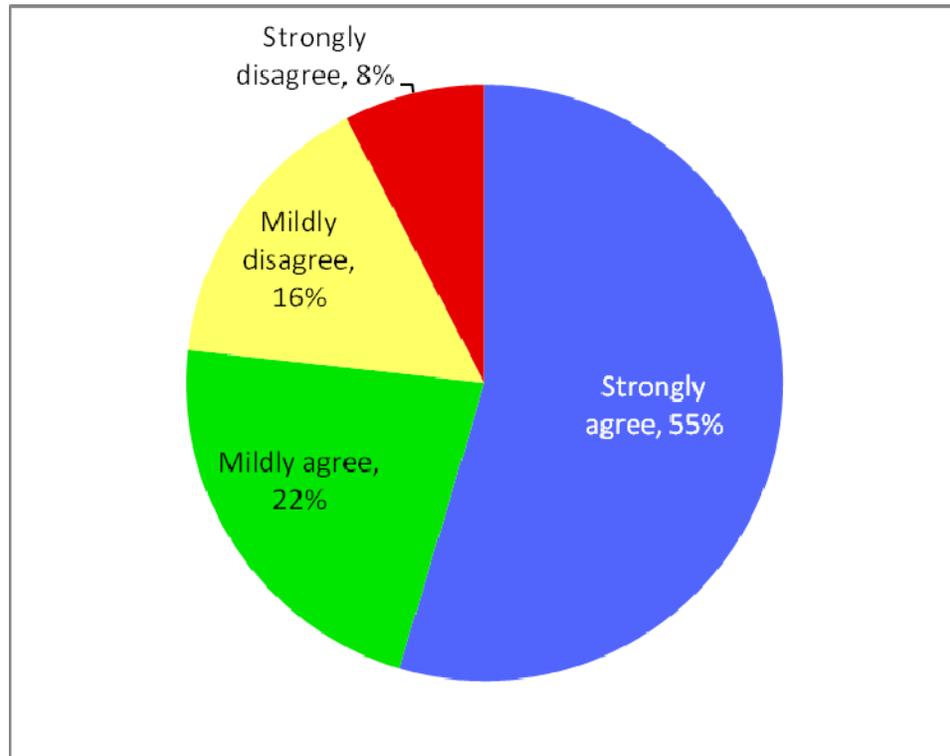
Strongly agree, 55%

"I do a lot more browsing on the iPhone than I did on my previous mobile phone."
Eight point scale: Strongly agree = 7 or 8, mildly agree = 5 or 6,
mildly disagree = 3 or 4, strongly disagree = 1 or 2.

One of the most promoted features of the iPhone is its web browser. Many anecdotal reports claim that people browse more on the iPhone than on other mobile devices, because of the iPhone browser's better compatibility and touchscreen controls.

The survey confirmed that the iPhone is driving a substantial increase in mobile browsing. A large majority of iPhone owners said they do a lot more browsing on the iPhone than they did on their previous mobile device.

About half of iPhone users have added applications
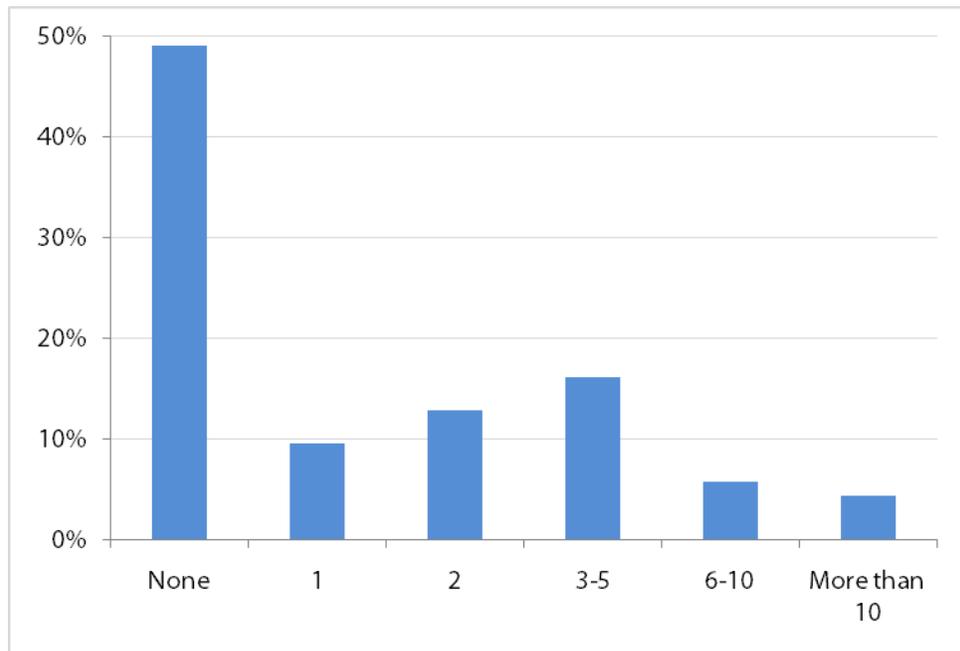

Have you added any additional software applications to your iPhone?
If so, how many?

One of the most controversial aspects of the iPhone has been its ability to run third party software applications. Soon after the iPhone was launched, independent developers found ways to hack into the iPhone, enabling them to install new software programs. A large number of third party applications appeared, but Apple, citing security concerns, disabled most of them via an update to the iPhone's software.

About half of the people in the survey have at one point added at least one application to the iPhone. Among the people who did add applications, the average person added 4.3 new programs.

2. iPhone Impact on the Mobile Industry

# The iPhone increases service billings by about 24%
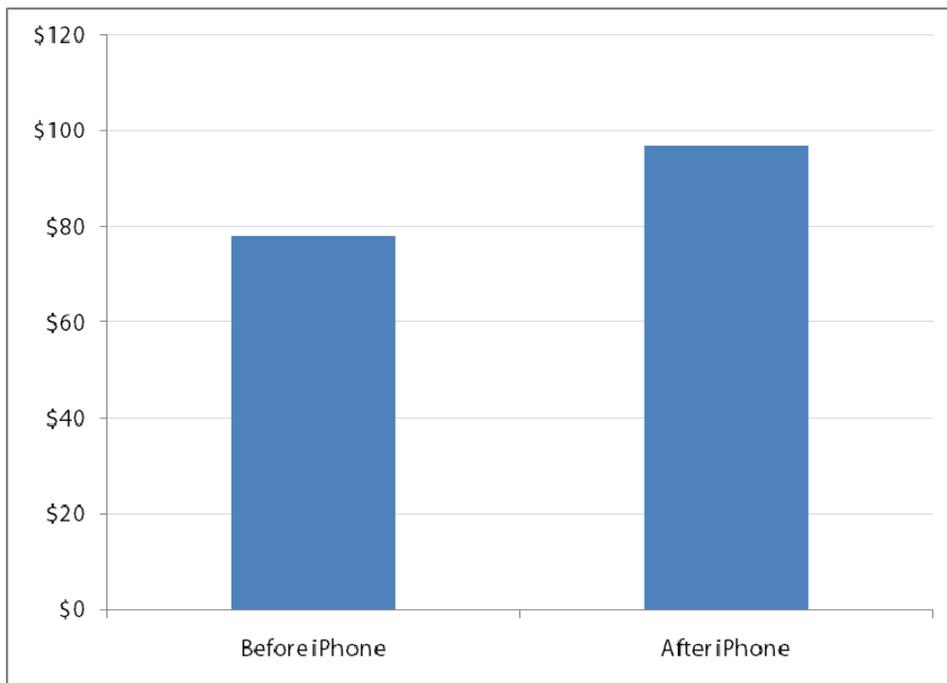
Average monthly personal mobile phone bills before and after purchase of iPhone.

One of the most important iPhone questions for the mobile phone industry is whether it actually causes people to pay more for mobile data, or if it is just switching heavy users of mobile data to a new device. Respondents to the survey said that it has actually increased their mobile phone bills.

iPhone users in the survey reported that their average monthly mobile phone bill was $78 per month before the iPhone purchase, and $97 per month after the iPhone. So the iPhone has increased users' yearly mobile phone bills by an average of 24%, or $228 per year.

# Almost half of iPhone users changed carriers
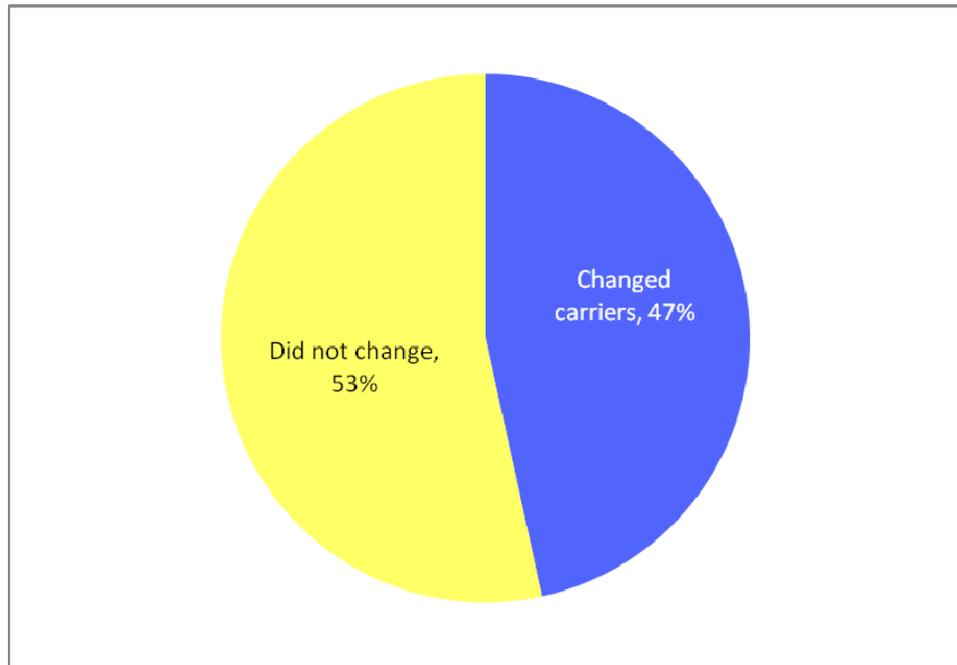
Did you change wireless carriers when you got your iPhone?

In addition to the wireless billing question, the question that wireless carriers wonder about the most with regard to the iPhone is: Does it cause people to switch carriers? The answer appears to be yes. About half of the iPhone users surveyed said they had switched wireless carriers in order to get the iPhone.

This ability to drive carrier switching is very important, as mobile phone markets in the developed countries have saturated, and there is little room for attracting new users.

What did the iPhone replace?
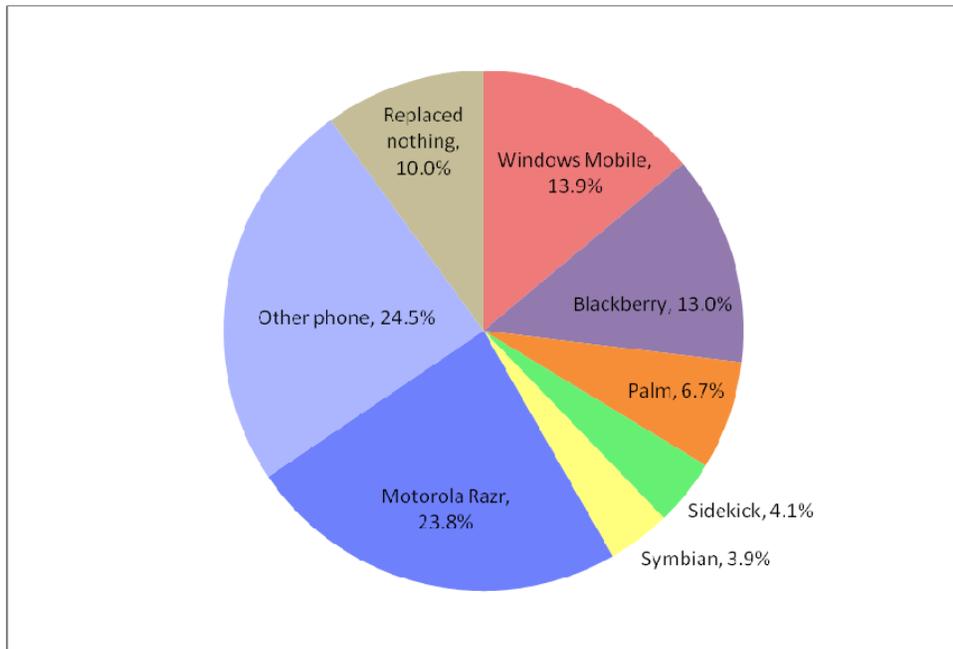
When you got your iPhone, what model of mobile phone, if any, did it replace?

Is the iPhone being bought by new users? Is it replacing other smartphones, or is it trading people up from conventional non-data phones?

The survey showed that it's doing some of all three:
- About half the iPhone users surveyed said that it replaced a conventional mobile phone.
- About 40% replaced a smartphone.
- And about ten percent didn't replace anything, meaning either that the iPhone is their first phone, or that they carry it in addition to a second phone.

The Motorola Razr was the phone most often replaced, which is not at all surprising since it is one of the most popular phones in the US.

Among smartphones, the iPhone appears to be pulling users from the most popular smartphone platforms in the US -- Windows Mobile and RIM Blackberry. Other affected smartphones include Palm, T-Mobile Sidekick, and Symbian (the main operating system used by Nokia smartphones).

Note: *It is difficult for many smartphone users to say which operating system is in their phones. This is especially challenging for users of Windows Mobile and Symbian, which appear in a wide variety of phones. So we surveyed users on which model of phone they owned, and then correlated that back to OS. Because we could not list every phone model on the market, that means this report probably underestimates the iPhone's impact on Windows Mobile and Symbian. Because Palm, Blackberry, and Sidekick are all single-brand platforms, it is easier to track them.*

A third of iPhone users carry two phones
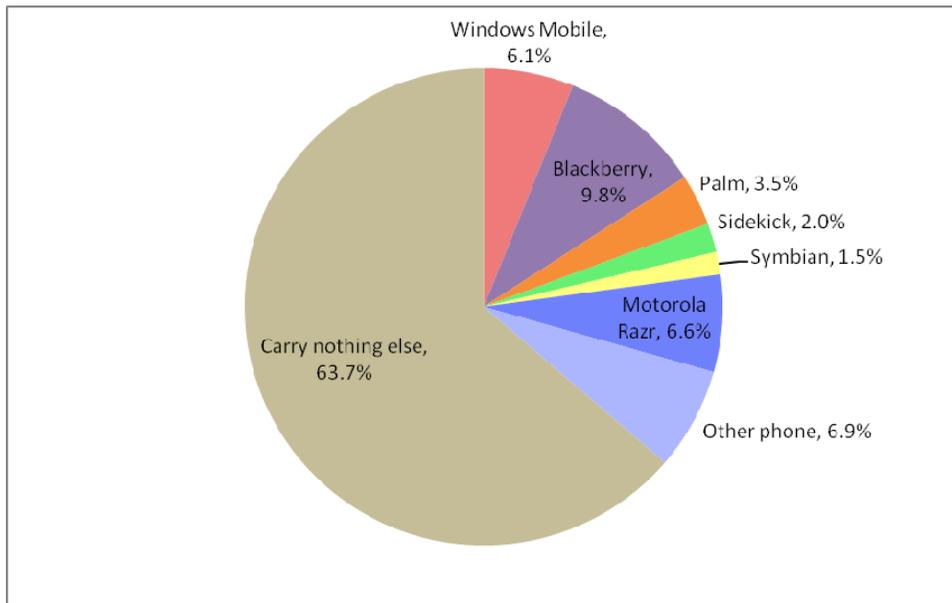
Do you carry another mobile phone on a regular basis in addition to your iPhone?
If so, what model?

There have been anecdotal reports that some iPhone users also carry a second mobile phone for traditional voice calling, or for other functions the iPhone doesn't do well. The survey showed that two-thirds of iPhone users carry only a single phone.

Among the one-third of iPhone users who do carry another mobile phone, the RIM Blackberry was the most popular, carried by almost one iPhone user in ten. It's not clear what will happen to this statistic over time. As Apple adds Microsoft Exchange compatibility to the iPhone, it's possible that some of the dual users will discard their Blackberries. On the other hand, the people carrying both may be doing so because they want to use the Blackberry's built-in keyboard to type messages, and Apple has announced no plans for an iPhone with a keyboard

## About one in ten US iPhones have their carrier lock disabled
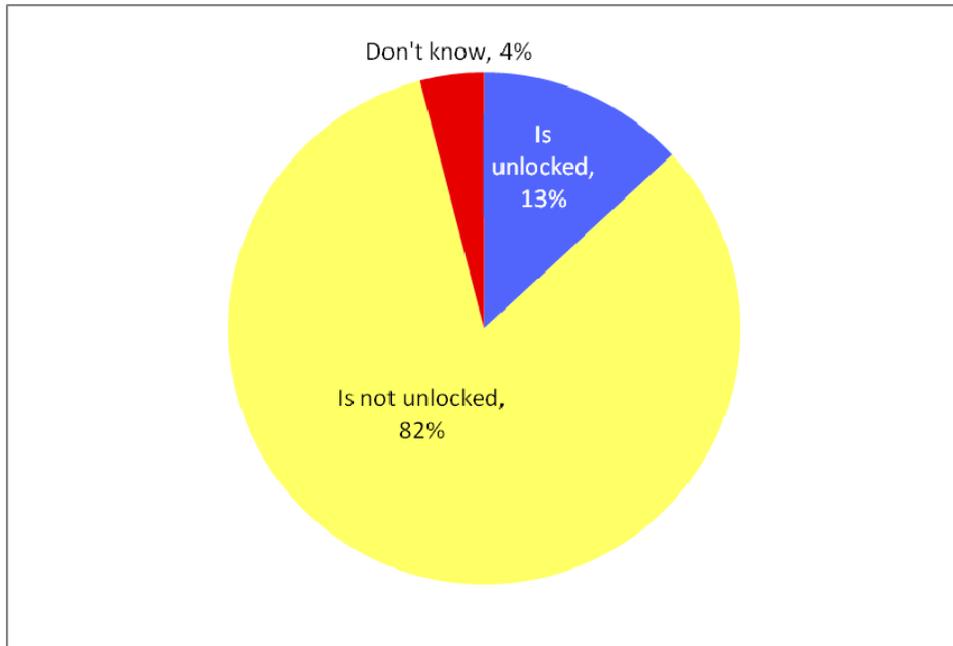
Has your iPhone been "unlocked" to run on a carrier other than AT&T?

A very important figure for Apple and the industry to track is the percent of iPhones being "unlocked" to run on other wireless networks. Apple gets a substantial revenue share from AT&T, so when an iPhone is shifted to another network, Apple loses revenue. This has resulted in extensive efforts by Apple to prevent unlocking of iPhones, and to disable phones that have been unlocked.

Among iPhone users in the US, a bit more than 10% say they have unlocked their phones. Remember that this survey was conducted in the US. We believe that most unlocked iPhones are being exported to other countries where the iPhone is not officially available yet. So the total rate of iPhone unlocking worldwide is undoubtedly higher.

iPhones are displacing some notebook computers
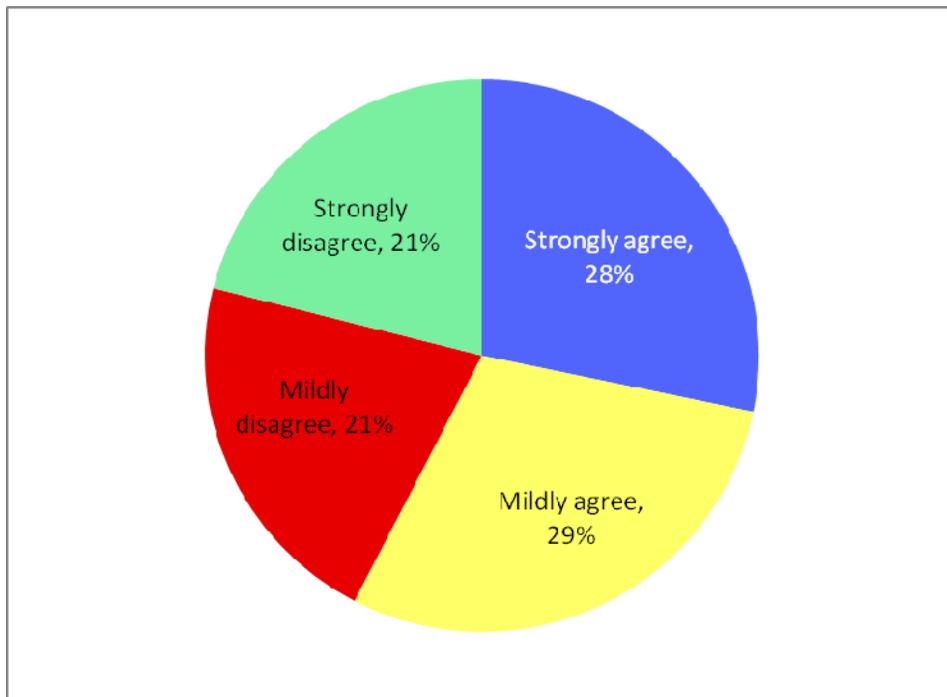
"I often carry my iPhone instead of a notebook computer."
Eight point scale: Strongly agree = 7 or 8, mildly agree = 5 or 6,
mildly disagree = 3 or 4, strongly disagree = 1 or 2.

A perennial argument in the mobile industry has been whether smartphones can or will replace notebook computers. Because of the iPhone's improved browser and PC-derived operating system, we wanted to see if iPhone users said it is replacing their notebook computers. About a quarter strongly agreed that it is.

As the iPhone gets third party applications and Exchange compatibility, this figure may grow. It's an important one to watch.

3. Opportunities for Improvement

Most desired new features: Applications and Exchange
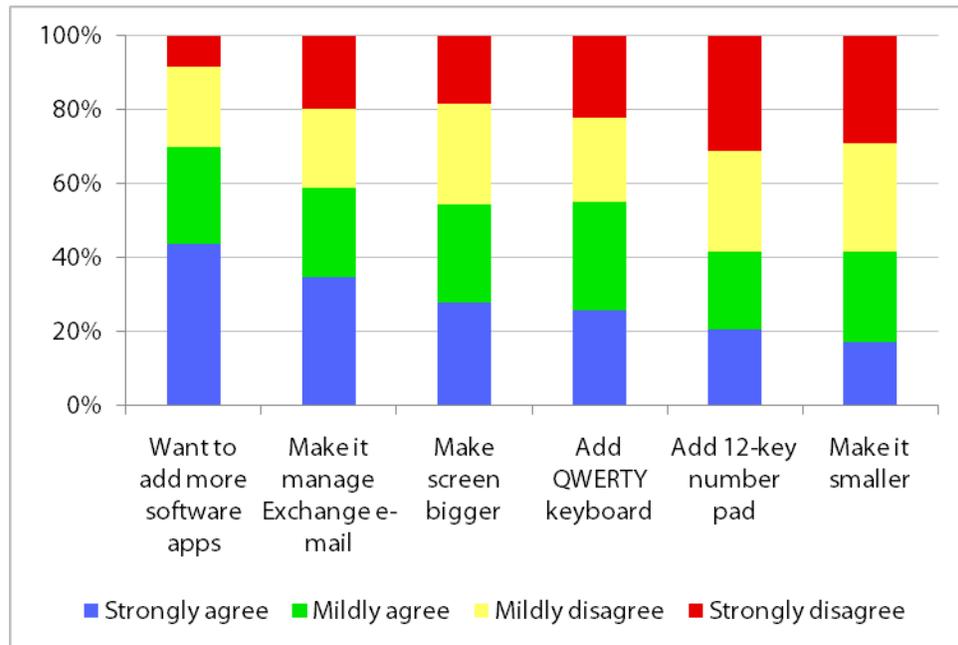
Agreement or disagreement that the respondent desires various features, on an 8-point scale.
Strongly agree = 7 or 8, mildly agree = 5 or 6,
mildly disagree = 3 or 4, strongly disagree = 1 or 2.

The current hardware and software design of the iPhone is not necessarily right for all users.

We asked iPhone users to agree or disagree with statements describing features that could be added to the iPhone. Among feature ideas we tested, the ability to add third party software is most strongly desired, with about 40% agreeing strongly that they want to do that. Managing e-mail from Microsoft Exchange was also very popular, with about 30% strongly requesting it. Apple has promised to add both of those features to the iPhone in summer 2008.

Making physical changes to the iPhone is more controversial. Increasing the size of the screen was most popular. There were also sizeable minorities of iPhone customers who would like to see a QWERTY keyboard or 12-key keypad added to the device. Making the iPhone smaller was the least popular option, but even it was strongly attractive to almost 20% of users.

Taken together, 43% of the iPhone installed base strongly supported at least one of the four physical changes.

One size doesn't fit all. Keep in mind that this survey covered only people who actually bought iPhones. It's likely that there are others who want a keyboard or different size so strongly that they didn't buy an iPhone in the first place. The survey strongly indicates that no single size or configuration can please everyone. There is opportunity for Apple, or other competitors, to capture other segments of phone users by creating iPhone-like products with a different mix of features.

iPhone browser has moderate compatibility problems
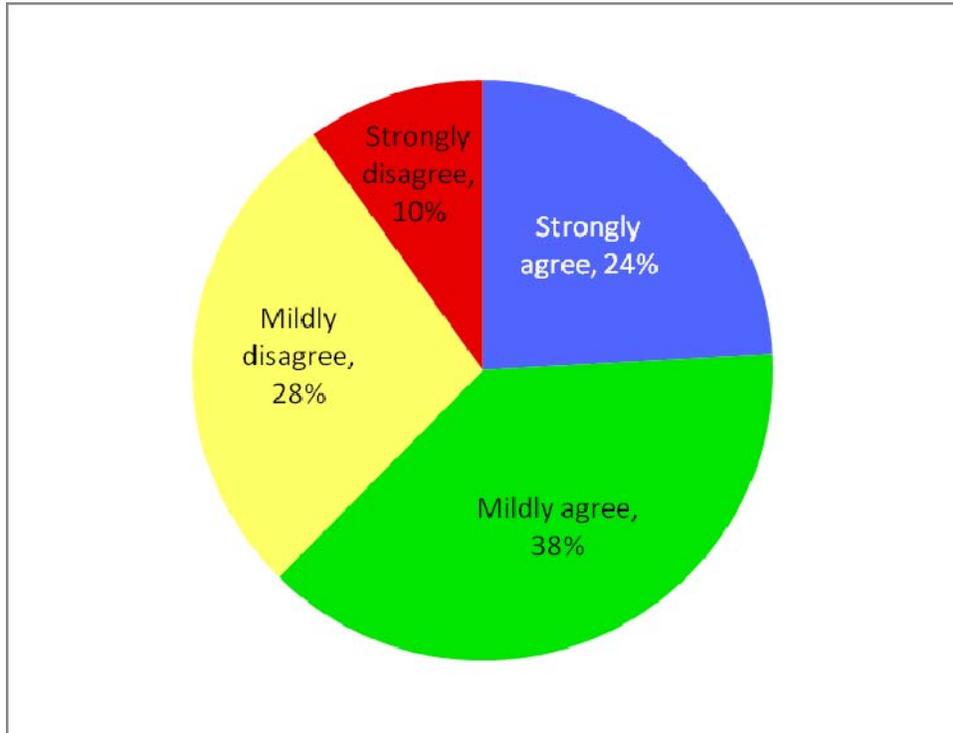
"The browser works well with all the websites I want to visit."
Eight point scale: Strongly agree = 7 or 8, mildly agree = 5 or 6,
mildly disagree = 3 or 4, strongly disagree = 1 or 2.

Compared to other features, iPhone users are relatively unenthusiastic about the compatibility levels of the iPhone browser. Fewer than one quarter of the users strongly said that the browser is compatible with all the sites they want to visit. Although we didn't see signs of intense dissatisfaction with the browser, iPhone users were much less excited about its compatibility than they were about other features. This is not surprising, considering that the iPhone browser does not currently support Adobe Flash, which is used in many websites for animation and user interface.

About one in ten users report hand pain
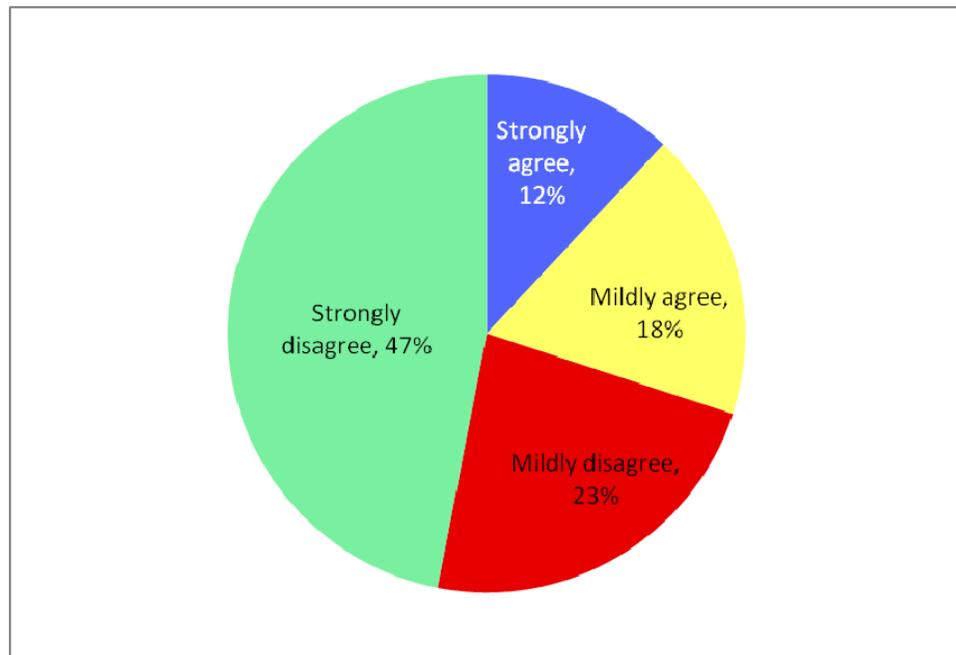
"I have experienced thumb or finger pain from using the iPhone."
Eight point scale: Strongly agree = 7 or 8, mildly agree = 5 or 6,
*mildly disagree = 3 or 4, strongly disagree = 1 or 2.*

Users of other mobile devices have sometimes reported hand pain that they believe is linked to the usage of the device. For example, a Web search for the phrase "Blackberry thumb" yields a flood of links.

We wanted to see if the unique touch interface of the iPhone might be producing cases of "iPhone finger." About one user in ten strongly agreed that they have had hand pain due to use of the iPhone.

Note that this finding does *not* necessarily imply that anything is wrong with the iPhone interface. Most users did not report problems. But overuse of any technology device can cause physical problems, and it is an issue worth watching.

4. About iPhone Users

## Most iPhone users had previous Apple experience
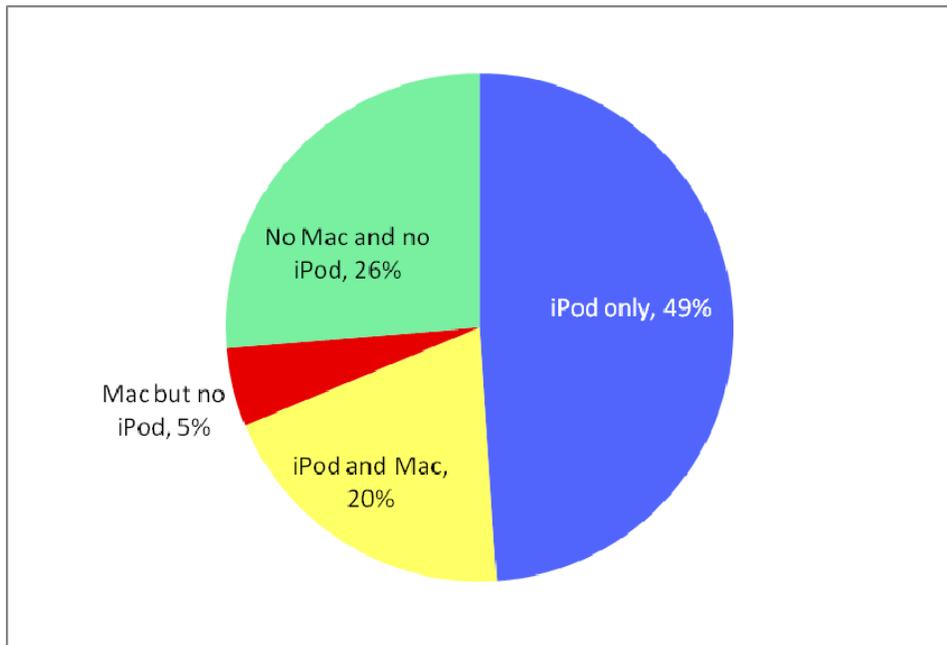
Consolidated results from two questions:
"Did you own an iPod before you got your iPhone?"
"Is the personal computer you use most often an Apple Macintosh?"

Is the iPhone expanding Apple's market, or selling to current Apple users? At this point, it appears to be selling mostly to Apple's installed base. About three out of four iPhone users were previous Apple users. One quarter if iPhone users were Mac users, and another half had previously owned iPods.

A quarter of the iPhone users did not have iPods and did not use Macs as their primary computers.

It's not surprising when a new technology product sells primarily to the vendor's installed base. But if Apple is to grow iPhone sales aggressively in the future, especially outside the US, it will need to reach further beyond its installed base.

Half of iPhone users are under age 30
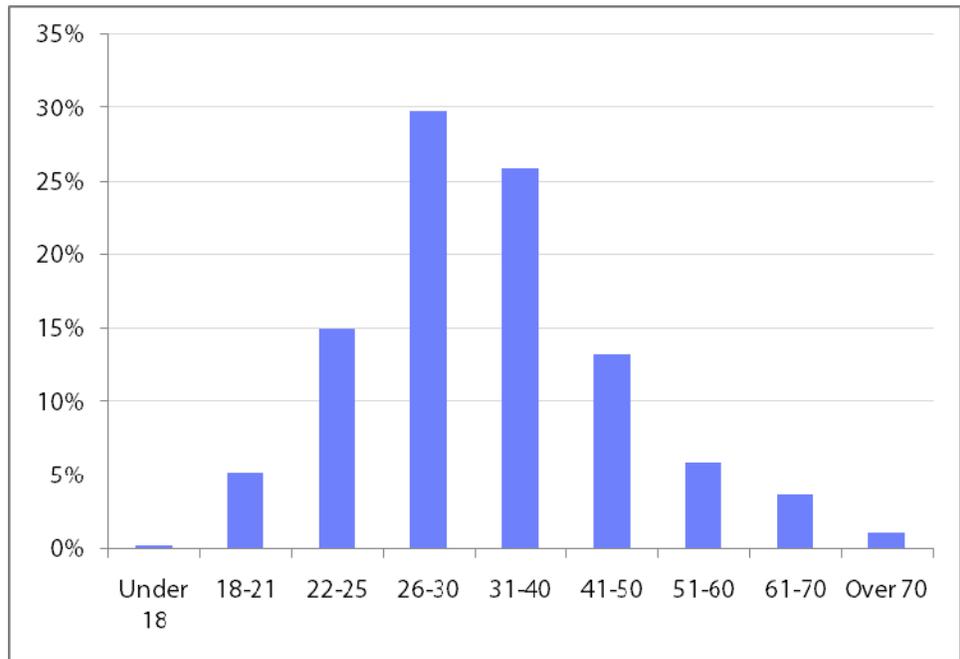
What is your age?

About 50% of iPhone users surveyed were age 30 or younger. This is not unusual for a mobile entertainment product, but it is significantly younger than the age distribution for many smartphone and PDA products, which in the US tend to be most heavily used by professionals in their 30s and 40s.

Most iPhone users are technically sophisticated
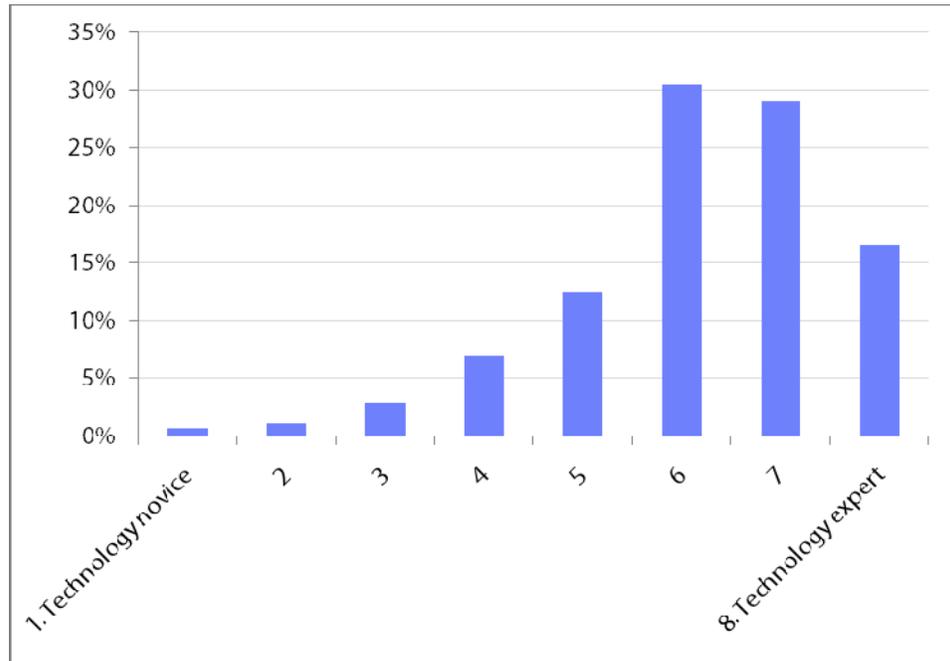
How would you rate your technology expertise (on a 1-8 scale, with 1=technology novice and 8=technology expert)

Asked to rate their level of technology expertise, most iPhone users described themselves as technologically sophisticated. This is not unusual for a new technology product, but it's an important reminder that customer reactions may change as Apple seeks to sell the iPhone beyond early adopters.

Students are heavy iPhone users
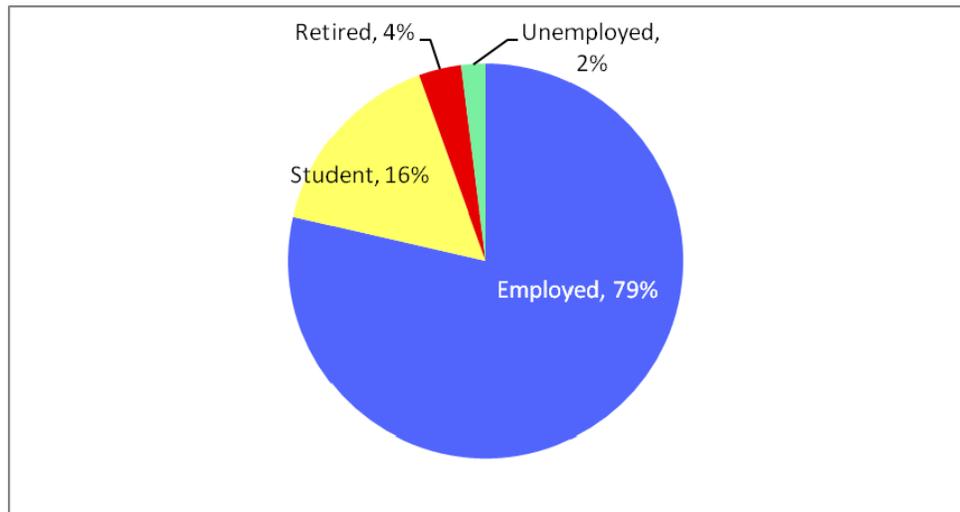
Please choose the phrase that best describes the industry you work in

According to US Census Bureau data, college students make up about 6% of the US population. So it was surprising to see that college students made up 16% of the iPhone users surveyed.[2] That finding underscores the appeal of the iPhone to young adults.

The survey also gathered information on users' occupations, but the sample size was too small for heavy analysis. In general, iPhone users were over-represented in the occupations that are usually early adopters of technology: professional and scientific services, arts and entertainment, and the information industry. iPhones were under-represented in industries that tend to have a lot of lower-income workers, and that are typically late adopters of personal technology: Manufacturing, retail and wholesale sales, health and social care, and food and travel services.

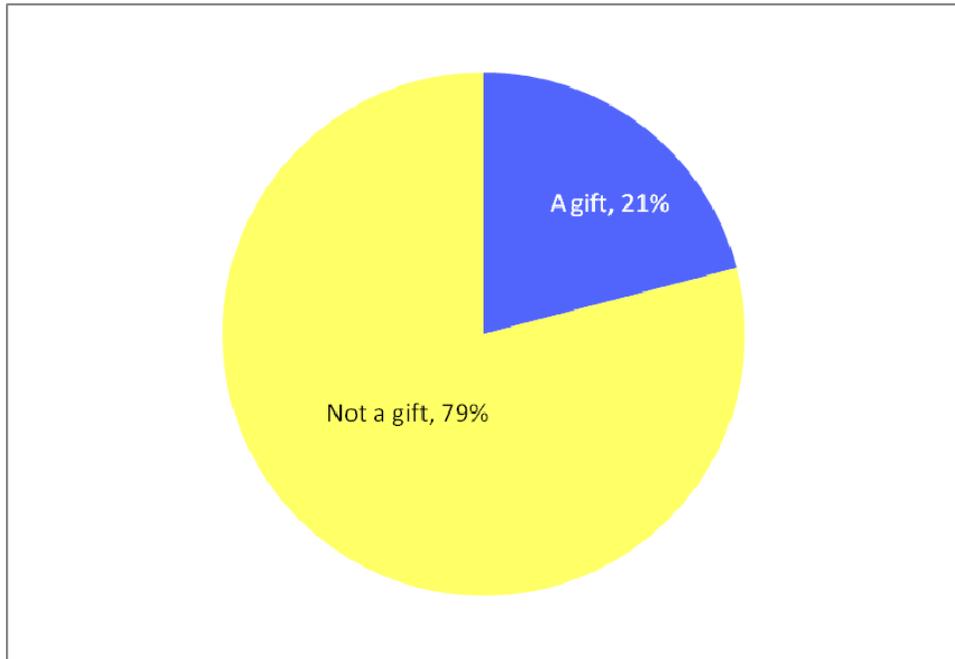[2] Although the survey asked for "student," almost all of the students responding were college age.

iPhone users are richer than the average

Median household income
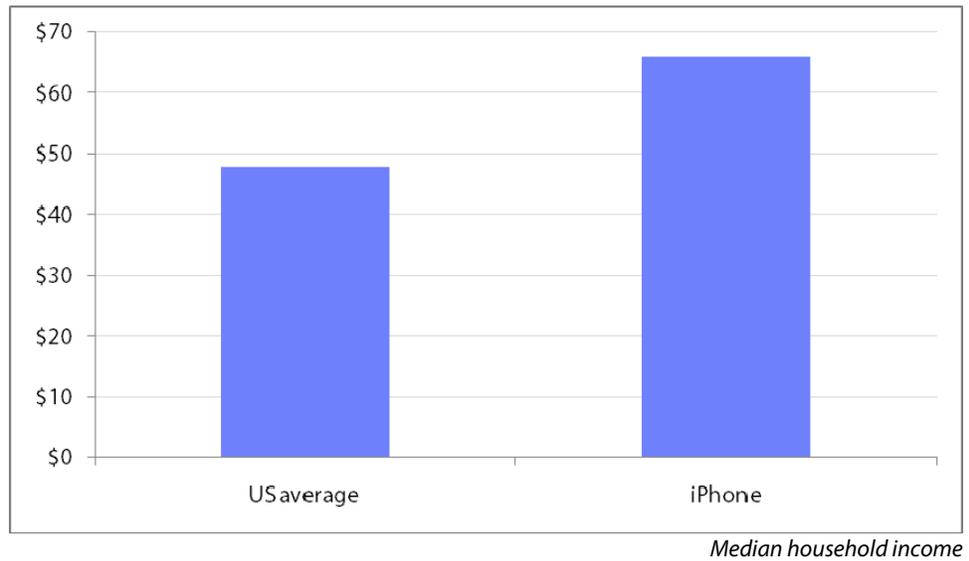
iPhone users reported household incomes that are about 40% higher than the US median. This is normal for new consumer technology products.

One in five iPhones were received as a gift

Was your iPhone a gift from someone else?

Sales in the mobile space can often be driven heavily by trendiness -- a "hot" product becomes a prominent gift item. This is an important figure to track because gift purchases are fickle, and can rapidly shift to the next trendy product, driving sudden drops in sales.

A substantial number of iPhones are being given as gifts, but the percentage is not as high as the 40%+ gift ratio that has been experienced by some other mobile technology products, such as PDAs.

Most iPhone users pay their own phone bills

Is your mobile phone bill paid for by someone other than yourself (employer, parents, etc)?

More than 80% of iPhone users pay for their own mobile phone service plans. This result was expected given the percent of gifts on the previous page.

About Rubicon Consulting

We help high-tech firms Win Markets. Rubicon clients include Adobe, Autodesk, Hewlett-Packard, Logitech, Nokia, Symantec, Symbian, and VMWare.

Rubicon knows that winning markets is not about "marketing," but about business strategy. Rubicon's insight has helped its clients thrive through the rise and fall of numerous paradigms since 1999, from e-commerce and Web 1.0 to Web 2.0 and the rise of mobility. The firm combines the intellectual rigor and wisdom expected from a giant consulting firm with the savvy and hands-on focus of veterans from some of Silicon Valley's best companies. It's a blend that often surprises clients. Principals stay involved with every project, and the team shares a proprietary "murderboard™" process to make sure the results are built on the best ideas. With Rubicon, clients always get the A team; there is no B team.

Nilofer Merchant, CEO, is a global high-tech industry thought leader and trusted strategic advisor to technology executives. Merchant founded Rubicon after gaining fifteen years of operational experience in key leadership positions at notable technology firms. She writes on and is a frequent keynote speaker on strategy, innovation, and leadership. She's currently working on a book, *Tribal Strategy: Engaging All Your Employees as Strategists*.

Michael Mace, Principal, is a 20-year veteran of some of the tech's most interesting battles. A product strategist and competitive guru, Mace was Vice-President of Strategic Marketing at PalmSource, Chief Competitive Officer and Vice President of Product Planning at Palm, Inc. Mace writes and speaks frequently and has appeared in the Wall Street Journal, Computerworld, and many technology trade publications.

Harry Max, Principal, is a seasoned Web strategist who combines broad high-tech business experience with an unusual set of strengths. His working knowledge spans user interface, customer engagement models, systems design and strategic problem solving, and includes recent work in leadership coaching. Max helps clients get to the heart of their problem and identify solutions that work. He is the co-author of two books.

Bruce La Fetra, Senior Marketing Consultant, applies 20 years of high-tech marketing experience to client projects with an analytical focus that invariably gets to the root of the problem. La Fetra brings Rubicon's clients real-world experience honed in a variety of high-tech industries and roles, ranging from hardware to financial services, and product management to strategic marketing. He's often published on business models and pricing topics.

Rubicon periodically releases research and whitepapers on issues affecting broad sectors of the tech industry. To learn more and sign up for Rubicon's newsletter, visit www.rubiconconsulting.com.

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