

AskTog, July 2007

The iPhone User Experience: A First Touch

On June 29, 2007, the long-awaited iPhone was released. Was it worth the wait? Is it all it's cracked up to be?

Yes.

There is no mistaking that this is a first-release phone, both in the hardware and software. However, it is an *Apple* first release, equivalent in many respects to the fifth or sixth release quality we have come to expect from other major computer technology players.

The "fit and finish" of the device are extraordinary, both in terms of industrial design and human-computer interaction.

Who's talking?

Bruce Tognazzini was hired at Apple by Steve Jobs and Jef Raskin in 1978, where he remained for 14 years, founding the Apple Human Interface Group. He has been a harsh critic of many of Apple's later innovations, including the notorious round mouse ("farcical") and the Macintosh Dock (see: [Top 10 Reasons the Apple Dock Sucks](#)). He is almost as stingy with his compliments as his partner, Don Norman. That makes his continuing take on the iPhone, largely positive, most unusual.

Fall Tutorials: Sign up now!

[Websites that Sell](#): My new course ensures your customers buy and buy a lot. For designers, marketers, managers, and anyone else involved in websites that must attract and hold visitor's interest, then close the deal.

[Interaction Design](#): Go from zero to interaction designer in just days. Whether you are in engineering or user-experience, whether you are an individual contributor or manager, [join me](#) for this in-depth course at our:

[User Experience 2007 Conference](#)

- [Barcelona, Nov 4-9](#)
- [Las Vegas, Dec 2-7](#)

The Hardware

The press has made much of the slow networking of this initial iPhone, something that will undoubtedly be corrected in upcoming versions.

The initial iPhone makes use of the old AT&T 2G (Edge) network, rather than the new 3G network. That reduces the web browsing user-experience to something more akin to a dial-up modem, rather than the DSL-like experience of the 3G network.

The rest of the hardware seems solid, though the touch system could be improved with a couple of small additions. More on that later.

The Software

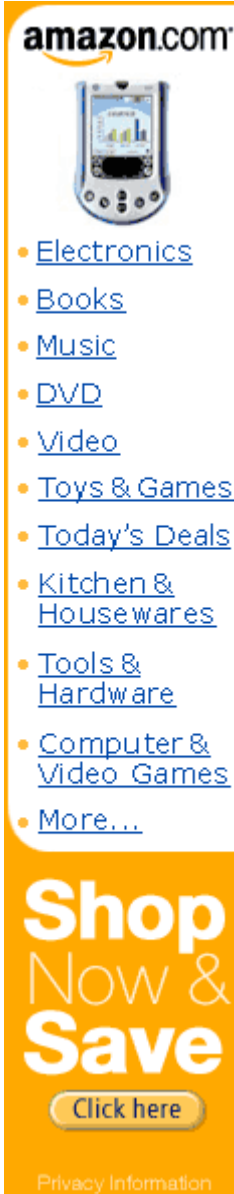
The fundamentals of the system have been well thought-out and deftly implemented. User-operations are smooth and pleasant, reflecting Apple's traditional attention to detail, again something unusual in the computer industry.

The applications themselves, however, are lacking in expected features. Rotation is a big selling point of the iPhone: If you are looking at pictures in portrait mode and an image in landscape mode comes up, just rotate the phone 90° and the picture redisplay in landscape mode.


This handy feature, however, does not extend to as many places as you might expect. For example, when I realized I was getting a 50% error rate when "typing," I tried rotating the phone to get bigger keys. Instead, I was just staring at the same keys sideways—they hadn't moved.

Symptomatic of first-release limitations, the calculator blows away your entire current calculation when you press "C," instead of doing what calculators have done for the last 20 years or so which is to eliminate the current entry with one press, performing a Clear ALL only upon a second press.

As I mentioned in my [earlier review](#) (since updated), the initial design is lacking in tight integration, forcing the user to search three different places to cover all messages received, instead of having a common in-box independent of whether contact was made by phone, by messaging, or by email.



amazon.com



- [Electronics](#)
- [Books](#)
- [Music](#)
- [DVD](#)
- [Video](#)
- [Toys & Games](#)
- [Today's Deals](#)
- [Kitchen & Housewares](#)
- [Tools & Hardware](#)
- [Computer & Video Games](#)
- [More...](#)

Shop Now & Save

[Click here](#)

Privacy Information

These limitations make the iPhone feel just a little bit primitive, for all it's otherwise fine polish. However, let me stress again that, for the first release of a revolutionary product, the iPhone is a triumph. There are only so many hours in the week, even for Apple employees who are "working 90 hours a week and loving it!" and Apple has put its resources into ensuring the fundamentals are smooth as silk. They have created the perfect base upon which to build.

The Touch Interface: Room for Improvement

Many aspects of the touch interface, including the "pinch" gesture for growing and shrinking images and webpages, etc., work quite well, at last ushering in the era of the gesture. I hit problems, however, when I attempted to type.

Apple, on their website, have a video of someone rapidly typing on the iPhone, with a speed approaching that of a touch typist. I found myself achieving the speed of a salmon with arthritis. Trying to get my big old fin to cover just the right button proved impossible.

Apple suggests a one-week learning curve to get up to speed, and that may hold true. However, the most important time in the product's life, from the point of view of Apple, is the ten or 15 minutes a potential customer spends in the store playing with the product.

If users, as I did, arrive at the conclusion that they may not be able to ever get up to speed, those customers will never buy the product.

Newton was Apple's last venture into an advanced-input portable device, and things did not go well. In the long run, the excessive price of the device was probably its downfall, but it didn't help that people, particularly members of the press, stumbled badly when trying to do text entry. The press had a field day as the Newton struggled valiantly to understand them, converting their attempts at syntactically-correct English into humorous gibberish.

My attempts with the iPhone produced only humorless gibberish, with around 50% of my "keystrokes" misunderstood.

At least two factors may have contributed to my problem. First, I have large, blunt fingers. They completely obscured the characters I was

trying to target long before I'd gotten close enough to press down. Second, I am an old person. At the doddering age of 62, I am probably well outside the demographic expected to zero in on the iPhone.

Still, at least two changes in the hardware could improve the consumer's initial impression of the iPhone considerably.

Hovering

An inherent problem with all finger-touch systems is that the finger, by definition, must obscure the object being touched (unless one has a giant screen with giant buttons). Apple has actually come up with a clever way to display the button anyway: As the user presses down on the "D" key, for example, a bigger image of the "D" key in a dialog balloon, as in a comic, appears just above the finger.

If users are hovering over the wrong key, they can slide their finger left or right while still maintaining contact until the desired key appears.

It's standard computer logic to use the release event, rather than the touch event, to trigger the final action. The problem is, it is not standard human logic. Many customers will assume that once they touch, it is over, that the balloon can only be made to display once the user had committed to the letter, thus acting to announce errors, rather than prevent them.

It's true that, by happy accident, the user will eventually discover, either consciously or unconsciously, that errors can be corrected this way. In addition, their accuracy rate will go up with time and practice, and the letter prediction algorithm will correct many errors without the user having to worry about them at all.

The problem is that the customer who decided not to buy the iPhone because he or she couldn't type will never venture any further along this learning curve.

The iPhone could make good use of a two-level touch-sensing system. That would allow the user to make gentle contact with the keyboard to cause the dialog balloons to appear, then press harder as they confirm that the correct letter is displayed. Such direct feedback would accelerate the learning curve

for the young while giving older people with large fingers—or arthritic fingers—an alternative to the frustration of high continuing error rates.

The system uses a capacitive sensor, not given to easy detection of pressure. A simple pressure sensor below the display, however, could probably detect pressure applied against the display. To detect the level of pressure, you are only interested in the amount of pressure, independent of location. The location would already be supplied by the capacitive touch screen.

I can also think of other creative solutions not requiring hardware changes, such as the phone "noticing" the level of error occurring and the user's rather clumsy efforts to correct them, triggering active help. I suspect, however, that having at least two levels of pressure detection would release a lot of further creativity in new and interesting areas, so that would be my first choice.

Force Feedback

Another major win for the iPhone would be force-feedback, so users could "feel" the key has been pressed. For a long time, lack of such feedback was something taken for granted with touch screens, but no longer. It turns out that if you move the entire device up and down rapidly when the user has achieved sufficient contact, hammering the device against the finger, the user's brain interprets that movement as a physical click. It also turns out that cell phones all already have a device to move the phone around—the vibrator used as a ringer alternative.

Of course, most cellphone vibrators move the phone in two dimensions, since they consist of motors with offset weights, but [Immersion Corporation's VibeTonz](#) technology replaces the rotary vibrator with one that goes strictly up and down. When that vibrator is triggered by a completed virtual keypress, the user is given just enough of a nudge to indicate to the brain that the keypress was successful.

To Buy or Not to Buy

I have been so excited by the technology of the iPhone that I want to buy one even though, for me, it doesn't make a lot of sense. I'm not talking about the typing problem. Even at my advanced age, I suspect

I can deal with that with sufficient practice. No, it's the fact that AT&T has not bothered to build a cell tower within five miles of my house. As Verizon says, "it's the network." Verizon goes where we go and AT&T does not.

If the iPhone were on the Verizon network, I would already be a proud owner. I will certainly be the proud owner of the first video iPod using this interface, even if I can only connect to the net via wi-fi. Finally, I'll have an alternative to those long, lonely walks from my couch to my desk.

To read my in-depth feature-by-feature review of the iPod, check out ["The iPhone User Experience: A First Look."](#)

Traditional cell phones are dull, limited, and at end-of-life. iPhone is glorious, and it is only the beginning.

Reader Mail

Hi Tog,

I just picked up my iPhone yesterday - my first impressions are incredibly positive, though I'm sure a lot of it is due to the "shiny new toy" effect. I have to say, though, if there were ever an argument for emotional design, and the power of delight, here's the case study.

Jayson Elliot

Tog's Response

I already had a high opinion of Jason's instincts. Now, it's even higher.

The iPhone really is a study in "delight." It really is wonderful that, in an industry rife with companies striving for mediocrity, one company is still doing things right. Those of us who flocked to Apple in the beginning did so not to build computers, but to change the world. Apple is once again doing just that.

Apple is now entering the consumer electronics world, where the lackluster attitude of "we'll fix it in the next release" is not good enough. The iPhone proves they are more than ready.

(Thinly disguised advert)

Websites that Sell

People have been bugging me for years to do an advanced human-computer interaction course, so now I am. "[Websites that Sell](#)" combines my 30 years of interaction design experience with my 15 years of retail sales experience. In one day, I'll show you how to turn an ailing site into a site that not only stops driving customers away, but actively closes the deal. Limited availability. Act now!

(Well, it is a course in selling.)

Seriously, we were promised at the beginning of the web that, soon, "bricks and mortar" stores would be a thing of the past. Then, the bubble burst, popped by the poor web sales that actually resulted. We deserved what happened: Most websites out there even today are doing their very best to drive customers away. Fortunately, the original projections were not that far off the mark, and many sites that are simply limping along now could be doing a land-office business if they only knew how to sell. I do, and I can teach you.

This is a course in "selling through design" not "marketing through designer," because marketing is not the same as sales. Sales is about keeping the customer informed and happy while successfully closing the deal. You will walk away knowing exactly how to do that.

I sold consumer electronics "live and in person" for 15 years before the invention of the personal computer, moving millions of dollars worth of product, picking up awards along the way. I also taught sales theory and practice to other salespeople, and I've been passing on these secrets to my private clients for years. Now it's your turn.

(My apologies. I think I was getting "salesy" again.)

Most designers shrink from anything that might lead the web visitor to believe we are actually interested in their buying anything, believing that selling is unethical. A lot of selling is. I don't teach anything that will make you feel anything but good. I sold with an eye for future business, and anything even remotely underhanded is antithetical to future business.

Instead, I will teach you how to take care of

your customer from the time they walk into your "web store" until the time they leave, credit card back in their wallet, merchandise on its way, and a smile on their face, the kind of customer experience offered by stores like Nordstrom in the real world.

This course is not a "rah, rah" session. Instead, I will teach you fundamental principles and psychological theory that can be applied directly to on-line sales, along with a lot of practical examples of what can go wrong and what to do about it.

While I'm aiming the course primarily at interaction designers, managers and marketing people have found the course useful and immediately applicable.

While the thrust is web sales, both retail and wholesale, it is, at heart, about motivating visitors and ensuring their success. Those working on sites from government to intranet, will find much of immediate, practical use.

Come [join me this fall](#) for a whole new way of looking at "customer interaction" design. It could be the most valuable course you ever take!

(Sigh. Once a salesman...)

Have a comment about this article? Send a message to [Tog](#).

Previous [AskTog Columns](#) >

Don't miss the next action-packed column!

Receive a brief notice when new columns are posted by sending a blank email to asktoglist-subscribe@yahooqroups.com.

[return to top](#)

Contact Us: [AskTog](#) | [Nielsen Norman Group Information](#)

Copyright Bruce Tognazzini. All Rights Reserved