Chapter 3 of The Illusion of Life describes the various basic principles of animation that were set forth by Disney in the early days of animation. I found the principles of animation very interesting. Especially things like squash and stretch. Along with exaggerated physics principles, I think these are going to be the new tools of UI design very soon.

I want to take the Apple iPhone[3] as a case study. I own an iPhone, and I love it. When the iPhone first came out, it was revolutionary. Not because of its new features as a phone, but its UI. No, as a phone, the iPhone is actually not that great.

When it was introduced (and still today for some features) the iPhone was missing a lot of the features that have come to be standard for a phone. The iPhone has no picture messaging capabilities. The iPhone has no phone-to-phone Bluetooth capabilities. The iPhone is even missing the A2DP Bluetooth profile for high-fidelity sound, despite its marketing as a combo iPod and phone.

The iPhone also wasn’t revolutionary for its touch screen. Full screen touch smart phones had been out for years before the iPhone. Microsoft has tried and been only moderately successful at marketing them. Someone might say that the iPhone was revolutionary for its use of a capacitive touch screen instead of a resistive touch screen, but that’s just a technical detail.

The true reason the iPhone was so revolutionary was its user interface. Previously touch screen phones encouraged the use of a stylus. The iPhone was one of the first phones to encourage you to actually touch the screen. It could be argued that you could always touch the screen instead of using a stylus, so the real revolution is the way the phone interacts with your touch.

The iPhone uses various new UI elements that make it enjoyable to use. Switches that slide on and off with your finger. Web pages that you pinch to make smaller and pull apart to make bigger. Lists that respond to momentum when you flick them. All these things are animated, but give your mind a sense of feel when you interact. Exaggerations are important. When you flick a list at the end, it bounces instead of stopping. This follow-through is important.

The next generation human interface device will not be a variant of a mouse or a pen, it will be the touch screen, and it’s coming soon. It will take a daring company, one that doesn’t mind completely redesigning the core of user interface, and one that has the power to control the hardware and the operating
system. The Microsoft Surface[2] is getting there, but Apple has an advantage with its loyal-to-upgrade user base.

References


A New Beginning

Michael Hines
mhines3@illinois.edu
May 6, 2009

In my previous critique I theorized about an update to an old human interface device around the corner that will change how we work with computers: the touch screen. This fits well with the Pad++ project. Pad++ was a research project before its time. I commend the Pad++ team for their ambition for such a big project. The project didn’t turn out to be much as far as a usable piece of software, but the idea was bold, and though the technology was there the computing resources weren’t.

If the Pad++ project were started today, I would probably see it taking advantage of some of the new design principles Apple has introduced with Cocoa Touch[2]. I think with the additional computing resources, the high-end graphics cards available today, and the ambition they originally had, some very interesting research could come out of this project.

As a core operating system, I don’t think the Pad++ idea is the solution. However, I think it’s the perfect research project. The solutions to the problems of implementing a successful and impressive Pad++ implementation would almost certainly generate many useful algorithms and ideas to be used in the next-generation of operating systems.

I’m really excited for this new wave in computers. We’ve been waiting for the next leap in computing since the Internet became the big leap of the 90s. Popular speculation has been that the next big leap will be some underlying technology such as cloud computing or Web 2.0 or 3.0 or whatever new version of the same old thing people want to call it. I think the defining characteristic of the next leap will be something that changes how people use computers, not just where their information is stored.

References