

Multi-touch Screens

Science Technology English 2

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I .Introduction

When Apple's iPhone hit the streets last year, it introduced Multi-touch screens to the general public. Images on the screen can be moved around with a fingertip and made it bigger or smaller by placing two fingertips on the image's edges and then either spreading those fingers apart or bringing them closer together. But in laboratories around the world at the time of the iPhone's launch, Multi-touch screens had vastly outgrown two-finger commands. Engineers have developed larger screens that respond to 10 fingers at once, even to multiple hands from multiple people. Multi-touch screens could one day free us from the mouse as our primary computer interface, the way the mouse was freed from keyboards.

II .Principal

Multi-touch screens respond to the motion and pressure of numerous fingers. Projectors send images through an acrylic screen onto the surface facing the viewer. When fingers touch the surface, infrared light shone inside the acrylic sheet by LEDs scatters off the fingers and back to sensors. Software interprets the data as finger movements. Tapping the screen will bring up desired command menus (Figure 1).

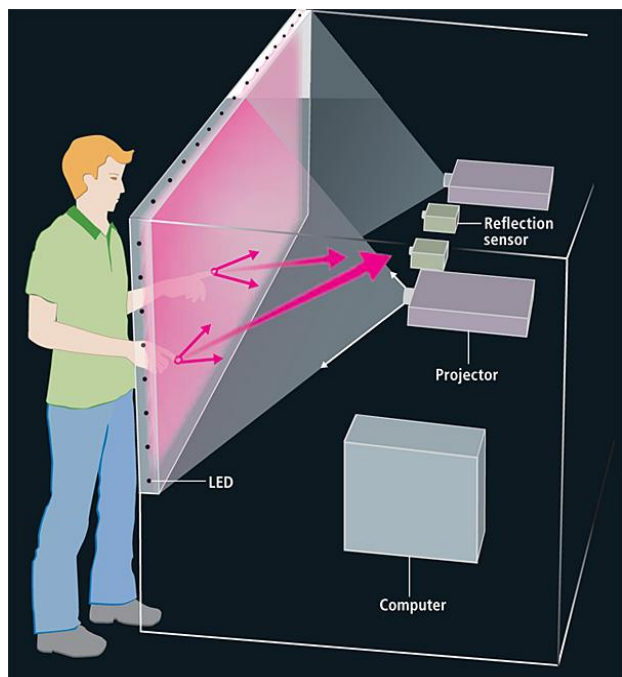


Figure 1

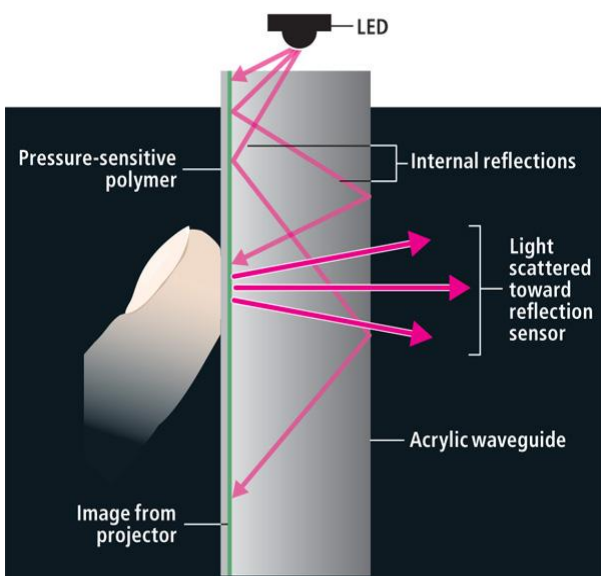


Figure 2

To create a signal, LEDs bounce light through the acrylic sheet. No light escapes. But if a finger is placed against the surface, light will scatter off toward the sensors. Also, a pressure-sensitive coating flexes when pressed firmly or lightly, making the scattered fingertip signal appear slightly brighter or dimmer, which the computer interprets as more or less pressure (Figure 2).

III.Example of adopting

Several early adopters have purchased complete systems, including intelligence agencies that need to quickly compare geographically coordinated surveillance images in their war rooms. News anchors on CNN used the system during coverage of the presidential primaries that boldly displayed all 50 U.S. states; to depict voting results, the anchors, standing in front of the screen, dramatically zoomed in and out of states, even counties, simply by moving their fingers across the map.

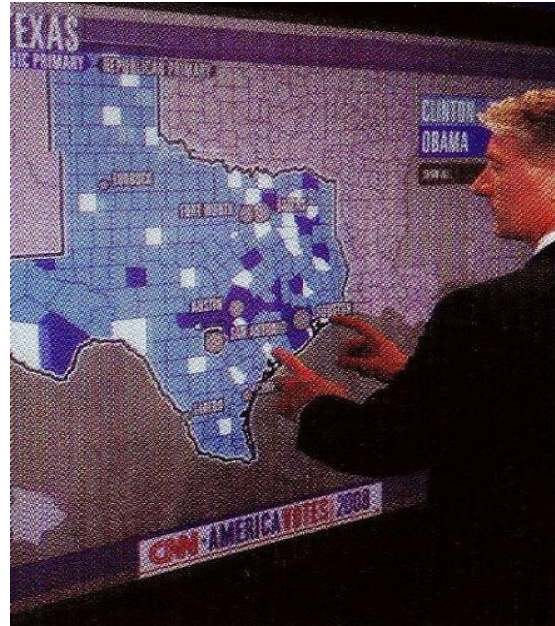


Figure 3

IV.Future

It is easy to imagine how photographers, graphic designers or architects—professionals who must manipulate lots of visual material and who often work in teams—would welcome this Multi-touch screens. And also it is expected that the technology to find a home in graphically intense businesses such as energy trading and medical imaging. Yet the technology is already being applied in more far-flung situations in which anyone without any training can reach out during a brainstorming session and move or mark up objects and plans.

V.Conclusion

The great strength of Multi-touch is letting multiple people work together on a complex activity. It is hard to remember how liberating the mouse seemed when it freed people from keyboard arrow keys. Soon the Multi-touch interface could help untether us from the ubiquitous mouse. Jeff Han, a consulting computer scientist and founder of a leading edge Multi-touch screens company, Perceptive Pixel said “We’re just at the beginning of this whole thing.”

VI.References

- <http://www.billbuxton.com/multitouchOverview.html>
- <http://www.perceptivepixel.com>
- Nikkei Science, October 2008