




# Touch on the Desktop

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# Agenda

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- About NextWindow**
- Introduction**
- Windows 7 & Touch**
- Desktop Hardware & Applications**
- Market Growth Factors**
- How Optical Touch Works**
- Touch Technology Comparison**

# About NextWindow

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## □ NextWindow

- ◆ Develops & manufactures optical touchscreens
- ◆ Currently focused on two touch-screen markets
  - Windows-7 consumer monitors and all-in-one computers
  - Large-format display applications such as interactive digital signage
- ◆ Global presence
  - New Zealand (HQ), Singapore (Ops), USA, Taiwan, Korea, Japan
  - Manufacturing in China, Thailand and Malaysia
  - 119 employees, 55 in engineering
- ◆ Brief history
  - 2000: Founded by CTO and private investors
  - 2003: First product to market (optical touch for large displays)
  - 2005: Entered USA market
  - 2006: First major volume contract signed (HP TouchSmart AiO)
  - 2008: Entered Taiwan market with ODM focus
  - 2009: Engaged with many PC OEMs & ODMs on Win-7 products
  - 2010: Acquired by SMART Technologies

# Is This All There Is?

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*Is this all there is?*

Is touch really all about **200M** mobile phones and everything else is mostly irrelevant?



# Desktop Touch Before Windows 7

- ❑ Vertical-application monitors (1990s)
- ❑ HP TouchSmart AiO (2007-2009)



Source: Elo TouchSystems



Source: HP

# The Significance of Windows 7

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## □ Windows 7 fully enables desktop touch (10/22/09)

- ◆ Touch & multi-touch is a highly visible characteristic of Win-7
  - Win-7 supports up to ~100 touch points
- ◆ Touch API is easy for ISVs to use to touch-enable apps
  - Applications can define their own custom gestures
- ◆ Most PC OEMs have launched multiple desktop touch products
  - ~90% AiOs, ~10% monitors



# Consumer Desktop Hardware

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## ❑ **AiOs & monitors with Win-7 touch**

- ◆ 27 products from 13 OEMs
- ◆ Acer, Asus, Dell, Fujitsu, Gateway, HP, Iiyama, Lenovo, Medion, MSI, NEC, Samsung, Sony

## ❑ **AiOs with single-touch**

- ◆ Estimated at 15

## ❑ **AiOs with no touch**

- ◆ Estimated at 25

## ❑ **Monitors with single-touch**

- ◆ None



# Examples

HP



Medion



NEC



Sony



Dell



Lenovo



# Desktop Applications

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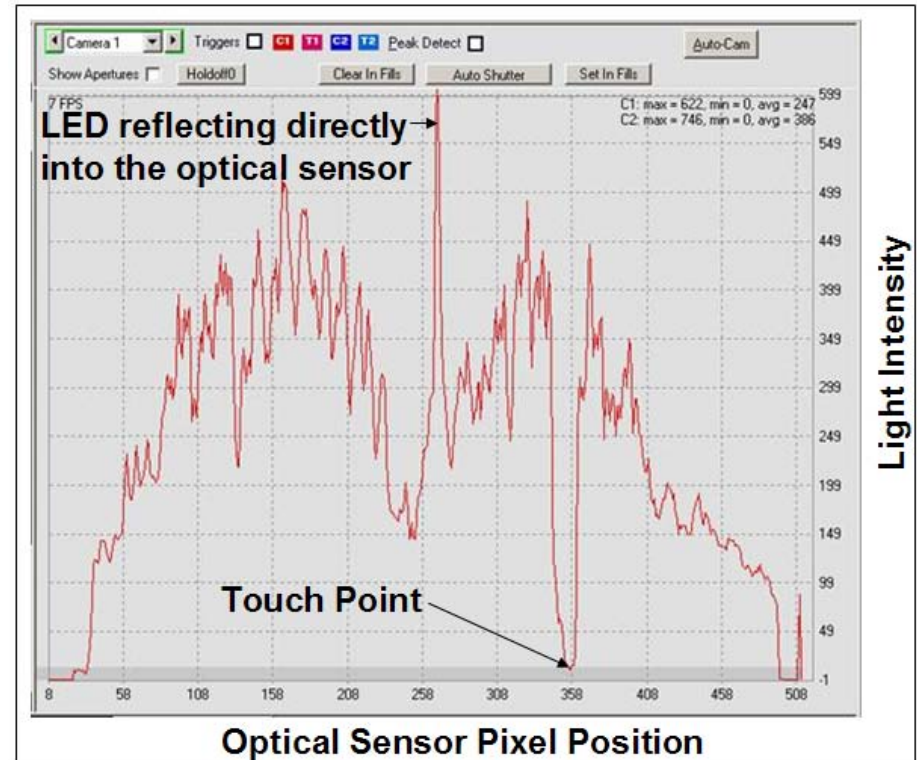
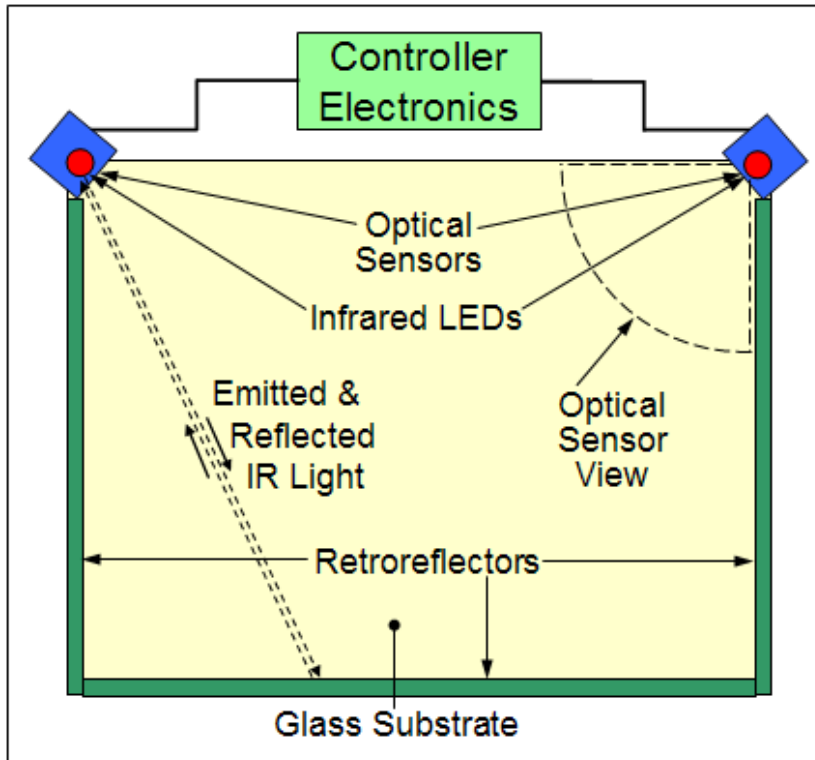
- ❑ **Consumer software applications enhanced to take advantage of Windows-7 touch**
  - ◆ Estimated at 50
    - Art & creativity, media management, reading, games, educational...
    - Mostly consumption-oriented
  - ◆ It will take until the end of 2010 or mid 2011 until there are a substantial number of applications available
- ❑ **Enterprise vertical (e.g., CAD, GIS)**
  - ◆ Beginning to see some specialized applications
- ❑ **Enterprise horizontal (e.g., Office)**
  - ◆ No significant applications yet

# Market Growth Factors

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- ❑ **Touch on the desktop is best for consuming information rather than creating information**
- ❑ **Touch-enabled applications are slow to market**
  - ◆ Consumers won't buy touch-enabled hardware without compelling touch applications
- ❑ **Microsoft's support for multi-touch**
  - ◆ Enhancements such as “No touch left behind” (in the latest Windows-7 SDK) may make a BIG difference for ISVs
- ❑ **Incremental BOM cost for touch**
  - ◆ Cost is much less of an issue in all-in-ones vs. monitors
- ❑ **Ergonomic issues may be significant on the desktop**
  - ◆ So-called “gorilla arm”
    - Reclining monitors? (palm rejection & viewing angle must change)

# How Optical Touch Works



# Desktop Touch Technology Comparison

| Requirement                 | Optical | Pro-Cap | AMR | SAW |
|-----------------------------|---------|---------|-----|-----|
| Size range 17" - 26"        |         |         |     |     |
| Multi-touch                 |         |         |     |     |
| Low profile (flush surface) |         |         |     |     |
| Shipping in high volume     |         |         |     |     |
| Touch with any object       |         |         |     |     |
| Light touch                 |         |         |     |     |
| Scaleable                   |         |         |     |     |
| High durability             |         |         |     |     |
| High optical performance    |         |         |     |     |
| Narrow border width         |         |         |     |     |
| Easy integration            |         |         |     |     |
| Low cost                    |         |         |     |     |
| Windows 7 Logo              |         |         |     |     |

|  |       |
|--|-------|
|  | Best  |
|  | OK    |
|  | Worst |



# Thank You!

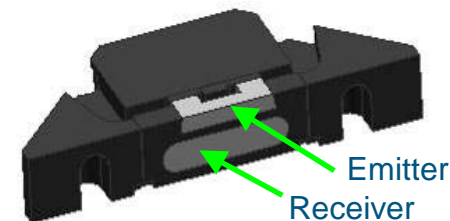
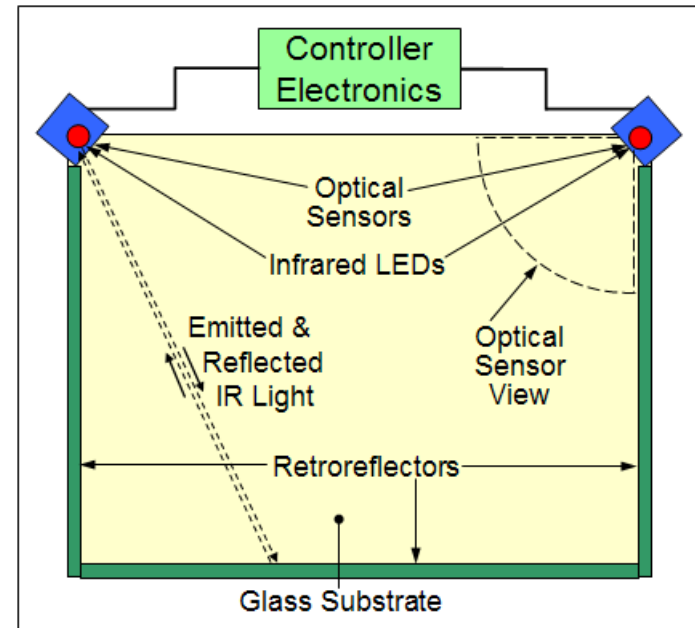
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# NextWindow's Optical Touch

## Basic Elements

- ❑ Two CMOS linear image sensors with lenses
- ❑ Single IR light source in each optical sensor module
- ❑ Backlighting created by retro-reflective border
- ❑ Image sensors aligned for maximum return signal
- ❑ Digital signal processor (DSP)
- ❑ USB and serial interface



# NextWindow's Optical Touch...2

## How It Works

- ❑ Optical system senses touches by looking across the substrate
- ❑ Optical sensors emit infrared light across the substrate
- ❑ Light is reflected back by retro-reflectors around the substrate
- ❑ Touch creates a shadow; the position is calculated by triangulation
- ❑ Zero contact pressure & no special coatings are required

