Does Touch On Consumer PCs Have Legs?

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NextWindow
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DisplaySearch Emerging Display Technologies Conference

v1.1

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optical touch

<begin>About NextWindow

❑ NextWindow

- Founded in 2000 by CTO and private investors
- 75 employees, 42 in engineering
- Brief history
  - ✓ 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
- Global presence
  - ✓ HQ in New Zealand; offices in USA, Taiwan and Singapore
  - ✓ Manufacturing in China, Thailand and Malaysia
- 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

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Agenda

- Current Situation
- Forecasts
- Factor #1: Applications
- Factor #2: Ergonomics
- Factor #3: Cost
- Factor #4: Microsoft
- Prediction

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Current Situation

- **Windows 7 launches 10/22/09**
  - Touch & multi-touch is a highly visible characteristic of Win-7
  - Most PC OEMs have at least one touch-enabled product under development ("testing the waters")
    - ✓ 70% AiOs, 20% monitors, 10% notebooks *[GW]*
    - ✓ OEM forecasts are generally quite conservative
    - ✓ None of the OEMs has a clear vision of what will drive touch
  - Microsoft wins regardless of the outcome
- **Comparison with the iPhone**
  - Touch is the iPhone's <u>only</u> user interface
  - The iPhone's "killer app" is its versatility & immersive UI
    - ✓ 50,000+ apps & 1.5B downloads (8/09)

Forecasts

- **<u>Touch penetration rate</u> is the key measure**
- **Forecasts are all over the map**

Source	Date	Category	2009	2013
DisplaySearch	6/09	Monitors & AiOs	2%	3%
Morgan Stanley	6/09	Monitors & AiOs	1%	22%
Credit Suisse	8/06	Monitors, AiOs & Notebooks	6%	50%
DisplaySearch	6/09	Notebooks	3%	4%
Morgan Stanley	6/09	Notebooks & Netbooks	4%	20%

- **Some issues…**
  - 2013 (IDC): Monitors = 148M; Notebooks = 217M; AiOs = **6M**
    - ✓ Penetration rates on AiOs & monitors will be very different
  - All 2008 touch forecasts are now moot for consumer PC touch
  - There really aren't any reliable indicators – it's all guesswork!

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Factor #1: Applications

- **Applications are the key**
  - People don't spend time using Windows, they use applications
  - Consumers must see some application functionality that makes them want to spend money for touch

- **The current application outlook is uncertain**
  - Microsoft's "Software Ecosystem Team" has only made five consumer-touch related announcements*
    - ✓ Roxio, Corel, Nero, CyberLink & CeWe ➔ *They're all media programs!*
  - Touch isn't the #1 OS feature that ISVs need to adapt to Win-7
    - ✓ It's not clear that ISVs even know what to do with touch yet
  - Many ISVs are conservative
    - ✓ "When Win-7 is released and supported, we'll update our apps"
    - ✓ "We're waiting to see if there really is going to be demand for touch"
  - A surprising number of current applications don't work smoothly with touch

* See www.readyset7.com

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Factor #2: Ergonomics

- **Ever heard of "gorilla arm"?**
  - *"The human arm isn't designed to be held horizontally away from the body for any length of time while making tiny, precise movements"* (Rupert Goodwins)
  - This may be the **elephant** in the room
    - ✓ "Reclining" monitors & AiOs will help
    - ✓ BUT that requires wider viewing-angle LCDs ($$)

- **Laptops may be more ergonomic for touch**
  - Smaller screens = less arm movement; elbow support on desk
  - BUT screen hinges are usually too weak for unsupported touch
- **Tablet PCs may be the most ergonomic of all**
  - Win-7 might inject some life into the dormant Tablet market

Factor #3: Cost

- **<u>Incremental cost for touch</u> as a percentage of the total device BOM is the key measure**

  - Assuming $2/inch in 2009
    - ✓ Monitor: $150 ➔ ~30%
    - ✓ Laptop: $300 ➔ ~11%
    - ✓ AiO: $400 ➔ 11%
  - For a consumer to pay for touch in a **monitor**, the value proposition must be <u>very</u> compelling
  - In an **AiO**, it's already approaching "no-brainer" level
    - ✓ HP will launch their third generation of TouchSmart in October
    - ✓ An unnamed OEM with a $100 delta between touch & no-touch AiO versions is experiencing ~80% attach rate on the touch version

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Factor #4: Microsoft

- **Acceptance of Windows 7**
  - The quality of Microsoft's touch implementation in Win-7 looks unusually good so far
  - Public reaction to Win-7 in general has been very positive
- **Marketing of Windows 7**
  - Microsoft's ability to market new OS capabilities at a sufficiently detailed level has not been a historical strength

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Prediction

❑ Geoff Walker’s personal prediction

Category	2009		2010		2011	
	%	Units	%	Units	%	Units
AiOs	25%	1.3M	40%	2.6M	65%	5.9M
Notebooks	2%	2.4M	7%	9.4M	11%	18M
Monitors	0%	0.1M	1.1%	1.6M	3.2%	4.5M

❑ Assumptions

- Applications begin to <u>fully</u> support touch by end of 2010
- Touchscreen cost/inch drops at typical PC hardware rates
- AiOs sales exceed most forecasts (9M in 2011)
- Touch on AiOs becomes a “no-brainer” due to the low cost-delta
- Oversupply of capacitive touch for notebooks drives down cost
- Monitors remain resistant until cost/inch drops significantly

Thank You!

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