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Road Map

Lonestar: Bridging the Tablet PC/Notebook Divide

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A new release of Microsoft® Windows® will make the **Tablet PC hardware market a lot more interesting** for end users and OEMs alike.

The new [Microsoft® Windows® XP Tablet PC Edition](#) , **formerly code-named "Lonestar,"** will make it easier for users to enter and correct handwritten text, among other things. As Lonestar and new hardware features blur the lines between tablets and notebook PCs, OEMs will find it easier than ever to share designs and components with the notebook PCs in their lineups.

"If OEMs can use an existing design -- instead of having to design the tablet from the ground up -- their costs go down," points out Darin Fish, business development manager for Microsoft's Mobile Platforms division. Over time, he says tablet technology will simply be **a feature users expect** with their notebooks. Within a few years, mobile users will just expect to be able to capture information with a pen as well as with a keyboard, he says.

Lonestar will be available next month as a free download for current users of Windows XP Tablet PC Edition, and will ship with all new Tablet PCs as of July.

Smarter Content Recognition

The major enhancements in Lonestar focus on the Tablet PC Input Panel (TIP), through which users enter text by writing on the touch-sensitive screen. Rather than requiring a command gesture from the user to open the input panel, the new In-Place TIP automatically pops up whenever the pen comes near the screen. Because the TIP can "float" to where the user needs it, it also **eliminates a lot of unnecessary hand movements** on the part of users, says Mike Cherry, lead analyst for operating systems at Directions on Microsoft, a Kirkland, Wash. research and consulting firm.

The new TIP also helps users enter and correct text. For example, as Lonestar translates writing into text, the characters automatically appear directly under the user's handwriting. This makes it **easier to check the accuracy** of the new text. Previously, the user waited for text to appear in a document or in a separate text preview window.

Lonestar also adds "context awareness" to handwriting recognition. This speeds entering strings of text or numbers, such as Web addresses or serial numbers, which don't require spaces or capitalization as does regular text. The more than 300 developers who are focused on Tablet PCs can use content awareness to **address the needs of vertical markets** such as health care which use specialized terms, says Susan Cameron, group product manager for Tablet PC marketing.

Finally, content awareness also makes it easier for users to **add new words to the user-specific dictionary** by allowing for spelling corrections to be made in an input panel which automatically expands as more text is added. Previous versions forced users to start over if they exceeded the limits of the initial window, says Cameron. All these improvements are aimed at making "pen and ink" input of text a mainstream feature available to more mobile users over time.

Key Improvements in Lonestar


- ▶ Recognized text automatically appears under handwritten input in the Tablet PC Input Panel (TIP)
- ▶ TIP automatically pops up when pen comes near screen
- ▶ Context awareness makes it easier to add text strings such as Web addresses and serial numbers
- ▶ Easier addition of new words to dictionary
- ▶ Overall improvements in handwriting recognition engine (e.g., allowance for "late strokes" such as crossing of Ts)

Source: Microsoft Corp.

New Design Points

With battery power at a premium, anything that can extend the useful life of a Tablet PC between recharges will be a win with customers. Equipping Tablet PCs with the same power-saving processors as on wireless PCs (such as Intel Centrino processors running at speeds up to 1.7 MHz) is a step in that direction. "One of the things we're seeing customers asking OEMs to do," says Fish, is to add a power button that can **turn off the Wi-Fi radio when not needed** to save power. This would eliminate what Directions on Microsoft's Cherry says has been a roadblock to user adoption of tablets. "People want to use them all day without having to tether themselves to a plug," he maintains.

Another power-saving feature beginning to appear is ambient light sensors. When the sensors detect increased light in the area around the tablet, Lonestar **automatically dims the LCD display**. This extends battery life; the LCD is the largest power consumer after the microprocessor, says Fish.

Tablet PC **microphones are also prepped for improvement**. More OEMs are building array microphones into their systems, which will zoom in on sound coming from one portion of the environment -- say, a professor giving a talk at one end of a lecture hall. Speech capture, along with the improved handwriting recognition capabilities in Lonestar, become even more compelling when combined with **Microsoft® Office OneNote® 2003** , the application bundled with Windows XP Tablet PC Edition. OneNote makes it easy to capture and share handwritten notes, sketches, voice and related content with others.

Top Trends in Tablet Hardware Design

- ▶ Ambient light sensors to dim screens in bright light to save power
- ▶ Array microphones to better capture and record speech
- ▶ Wider range of form factors with screens from 8.4" to 14"
- ▶ Wider adoption of CD-RW drives

Source: Microsoft Corp.

Meanwhile, features meant to widen the overall appeal of the Tablet PC are just around the corner. Some OEMs, for example, are considering adding a button to activate only the user's PIM (personal information manager) application when the tablet is in standby mode. Fish says this would **help users retrieve a name or phone** number without having to wait for the system to boot up.

Other new features **will borrow from recent notebook PC trends**. For example, OEMs are producing or are planning, tablets with screens ranging from 8.4" to 14". Wider-access screen ratios, such as 16 x 10 or 16 x 9, "give you more screen real estate to work with," notes Fish, while allowing tablet vendors to use components already widely available for notebooks.

Another change in keeping with the notebook PC market is the addition of integrated optical drives combining CD-RW and DVD capabilities. Such drives recognize the fact "that professional users of mobile PCs and Tablet PCs are also people who use their PCs at home to watch movies," says Fish. The move to **standardize parts between notebook and Tablet PCs** will, says Fish, help OEMs take advantage of economies of scale to lower tablet prices.

New Market Opportunities

The combination of longer battery life, new form factors and features, as well as the improved context awareness in Lonestar, will **open new market opportunities** for Tablet PCs, predicts Fish. Tablet PCs built on Lonestar will be increasingly attractive platform choices for mobile workers who are new to PCs, or who previously used single-function devices limited to taking inventory or entering orders. With a Tablet PC, he says, a single device can perform specialized tasks as well as access e-mail, surf the Web or run popular office productivity applications.

Marketing Tips of the Trade

- ▶ Position tablets as full-function replacements for single-function handhelds
- ▶ Emphasize productivity gains by reducing need to re-input paper notes
- ▶ Add tablet-like functionality to notebook designs
- ▶ Leverage common components to reduce price delta between tablets and notebooks

Source: Microsoft Corp.

Many users today take notes with pen and paper and then re-enter that data onto their PC. But with Tablet PCs more capable than ever, OEMs can begin to **promote them as real productivity savers**. Says Fish: "By capturing all that information in one place, users' productivity is greatly enhanced because the data capture is real time."

And it's **not all work and no play anymore**. When a user is done with business they can relax by popping a DVD into the optical drive and enjoy a movie on their tablet's bigger, wider screen. The fact that these components can be built into the tablet using widely-available -- and popularly-priced

components -- makes life more relaxing for OEMs as well. 

For More Information

[Microsoft Windows XP Tablet Edition home page](#)

[Hardware Requirements for Microsoft Windows XP Tablet Edition](#)

["Lonestar:" Next Version of Windows XP Tablet PC Edition](#)
Column describing new features in Lonestar

[Expert Zone Discussions Groups on Windows XP Tablet PC Edition](#)

[News for Microsoft Windows XP Tablet PC Edition developers](#)

[Windows Tablet PC Newsgroup](#)

[Tablet PC Talk](#)

Non-Microsoft community that provides extensive information on Tablet PC hardware and software, discussion forums, a newsgroup interface, and more.

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