

Sharp Corporation Wins Over Customers with Wind River

Wind River Linux Used for World's First Notebook PC with Optical Sensor LCD Pad



Sharp Corporation is a global company headquartered in Osaka, Japan, with a reputation for delivering unique electronic products and solutions. The company's Personal Solutions Business Development Group develops home information appliances for the general consumer—including personal computers (PCs), calculators, electronic dictionaries, telephones, fax machines, smartphones*, and mobile phones*.

Sharp's Personal Solutions Business Development Group recently released the newest model in its Mebius brand of notebook PCs—the PC-NJ70A. This is the world's first notebook PC with an optical sensor LCD pad. It allows pen-based input, as well as multiple-finger-touch operation.

"As more people use services via networks, such as websites, email, instant messaging, and Internet auction sites, it has become difficult for families to efficiently share a single PC in the home," explains Minoru Wadayama, a manager in the Products Planning Department, Personal Solutions Division in Sharp's Personal Solutions Business Development Group. "So we began to develop the new Mebius notebook with the functionalities consumers seek in a first 'private PC' or a second or third PC at home, with an emphasis on affordability and user-friendly features."

Mebius Meets Wind River Linux

Before selecting a platform for the optical sensor LCD pad, Sharp compared and studied several embedded operating systems. The company decided upon Wind River Platform for Consumer Devices, Linux Edition.

* for global market, except for Japan

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Solutions

- Wind River Platform for Consumer Devices, Linux Edition
- Freescale i.MX27L

Results

- Shortened development period by 15%
- Significantly reduced development cost
- Enabled innovative, differentiating features that make the product a standout for customers

"One key reason we decided upon Wind River Linux was that it provides a board support package (BSP) for the central processing unit (CPU) we were using," says Takahide Inoue, a manager in the New Business Product Development Department in Sharp's Personal Solutions Business Development Group. "We knew we could achieve significant decreases not only in cost but also in development time."

The BSP was important because Sharp had decided to connect the notebook PC's optical sensor LCD panel to the PC via Universal Serial Bus (USB). The design team adopted Freescale i.MX27L as the CPU for the panel.

"We wanted the option to sell the optical sensor LCD pad as a PC peripheral device instead of just having it built into the PC, to take advantage of future business opportunities," says Hiroshi Fukutomi, a product planner in the Personal Solutions Division in Sharp's Personal Solutions Business Development Group.

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The Sharp development team worked closely with Wind River Professional Services. The Sharp team performed coding for applications and middleware operating on Wind River Linux and received design support for the embedded operating system, including the kernel, from Nissin Systems, Co., Ltd.

A Sharp Decrease in Development Time, Cost

Sharp's original time estimate to develop the embedded operating system and related areas, including programming and data conversion, was six months. With Wind River Linux and the Freescale-optimized BSP, the company shortened the development period by at least one month.

"The ability to shorten our development period by 15% was a remarkable result of using Wind River Linux," Inoue says.
"This led to a considerable reduction in development costs."

A Sharp Increase in Customer Satisfaction

Another benefit of Wind River Linux is increased customer satisfaction, according to Inoue.

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Sharp's notebook PC brings a variety of application software, such as games and e-books, which can be operated via the optical sensor LCD pad. It includes features such as a photo viewer with a hand-drawing illustrations function and an electronic dictionary that can be searched using handwritten input. One popular feature made possible by Wind River Linux is the ability to display an image, such as a cat, and use a finger to move it smoothly across the screen.

Sharp recently also used Wind River Linux for the platform of the optical sensor LCD pad in the Windows 7-compatible models, PC-NJ70B/NJ80B.

"We will continue to use Wind River's excellent technology to provide ease of use and convenience for our customers," Fukutomi says.



For additional information about the products mentioned in this case study, visit

www.windriver.com

www.sharp-world.com/corporate/news/090421.html