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QQ Technology Goes Global with Wind River VxWorks

Startup Network Equipment Company Introduces Trusted Carrier Grade Solution to International Marketplace

QQ Technology is a leader in next-generation network applications and services—providing solutions to telecommunications operators and financial, educational, and government organizations.

In 2005, the company unveiled QQSG, a product that manages shared network traffic to maximize bandwidth and quality of service (QoS). The product regulates internal online behavior, raises work efficiency, and prevents virus attacks internally and externally to keep corporate networks safe. QQ Technology offers a series of customized solutions and intellectual property (IP) cores to complement QQSG.

In late 2007, QQ Technology was ready to make the next leap—providing the first carrier grade network traffic management product to hit the China market.

"We were confident we had the best technology, but there was still competition out there," says Deng Fan, Vice President of QQ Technology. "We knew that if we entered the carrier grade market, we would be the only vendor serving the entire network traffic management market in China. We also knew this would open the door to a global market."

To be first to market, QQ Technology knew it needed to quickly introduce a new, high-end product with multicore technology advantages. But the company also realized its challenges, which included limited multicore development expertise and single development platform environment support. QQ Technology had difficulty maintaining research-and-development efficiency and quality when working with multicore chips.

These time-to-market challenges led QQ Technology to Wind River.

"Only Wind River was able to deliver a mature multicore solution, a locally based global support and services organization, and a clearly defined roadmap, including critical support for RMI Corporation's XLR semiconductors. With the commercial-grade solution from Wind River, we have dramatically increased our development efficiencies and improved time-to-market."
—Deng Fan, Vice President, QQ Technology

Company Profile: QQ Technology

- Leading startup in next-generation network applications and services
- Serves small and medium enterprises to global companies
- Headquarters in Beijing, China

Industry

- Networking

Solutions

- Wind River Platform for Network Equipment, VxWorks Edition
- Wind River Workbench, On-Chip Debugging Edition
- RMI's XLR multicore, multithreaded processor

Results

- Reduced time-to-market, achieving four months vs. eight months for previous development efforts
- Lowered development costs by 30% compared to previous development efforts
- Standardized on Wind River platform for entire product line
- Successfully completed a carrier grade solution, enabling global market expansion

Meeting Carrier Grade Goal with Wind River

QQ Technology selected Wind River Platform for Network Equipment, VxWorks Edition for two key reasons. First, the platform allows the company to standardize on one common operating system and toolset (Wind River Workbench, On-Chip Debugging Edition) while supporting multiple development projects. Second, Wind River provides a board support package (BSP) for RMI Corporation's XLR processor, which enables QQ Technology to speed up development and increase efficiency.

QQ Technology began using VxWorks at the end of 2007. At this time the company started migrating some of its products from Linux to VxWorks.

"The migration to VxWorks was even easier and faster than we expected," Fan says. "VxWorks' numerous reference designs and our partnership with Wind River enabled us to complete product development within just a few months instead of eight to 10 months and at a much lower total cost than our previous product development efforts."

Initially QQ Technology planned to use the VxWorks platform only for its carrier grade solution—to meet rigorous demands for performance and reliability. However, when the company realized how fast and cost-effective the product-development process was using VxWorks, it decided to migrate all its products to VxWorks.

"We thought now that we have VxWorks and it has proven its value, why not use it for all our product lines?" Fan recalls. "We knew we would have to make an initial investment to use VxWorks across the board, but we would also reduce development costs and time spent managing and maintaining different developer toolsets."

Because QQ Technology uses RMI's XLR multicore and multithreaded processor—a high-performance, highly integrated system-on-chip solution—the company was pleased to learn that RMI is a Wind River partner with a readily available BSP. VxWorks is well-supported on RMI, with a clearly defined roadmap. Both the XLR and XLS families of RMI multicore and multithreaded processors support not only VxWorks but Wind River Linux and Wind River's on-chip-debugging products.

"Wind River's products and support in multicore technology reduce risk and provide us with the ability to deliver a new product on time while meeting the highest hardware and software quality-ranking standards in next-generation network applications and services," Fan says.

For example, with VxWorks multicore tools, QQ Technology is able to equip its products with power-saving features and earn them "green" labels.

Opening Doors to International Markets

VxWorks enables QQ Technology to achieve faster time-to-market. This is key to the company's expansion plans because it can now quickly provide diverse products to international markets.

"As a startup company, we also place a high value on Wind River's global reputation in the industry," Fan says. "This will help us enter high-end and international markets."

With 3G/4G networks deploying and enabling broadband voice, data, and video content, the volume and types of data traveling through networks are exploding. All this data must be reliably routed, classified, managed, and delivered in order to ensure QoS. Large network infrastructure vendors, including Nokia Siemens Networks and Alcatel-Lucent, are interested in adding QQ Technology's products to their own offerings.

QQ Technology attracts these large companies' attention with its in-depth expertise in quickly, precisely capturing sources of abnormal data streams in networks. The companies find extra assurance in the fact that QQ Technology products are based on the trusted VxWorks platform.

"As we enter international markets, there's a larger focus on IP and brand recognition," Fan says. "With the IP we bring to the table, and the industry-recognized Wind River VxWorks platform, we can open many more international doors."

Measuring the Bottom Line

"Wind River VxWorks was the best real-time operating system (RTOS) choice for our 10G carrier grade high-performance solutions," Fan says. "With the commercial-grade solution from Wind River, and so many VxWorks success cases and reference designs, we debuted our first high-end product within an aggressive time frame."

Now that QQ Technology has extended VxWorks to all its products, the company will reap even more rewards across the board—including development efficiencies, reduced time-to-market and development costs, and robust products with lower power consumption and increased possibilities for future standardization.

"Deploying Wind River VxWorks was a great next step for us—the step we needed to advance our company to the next level and enter new international markets," Fan concludes. "We will continue to use Wind River VxWorks, and we eagerly await new versions to help us serve the networking marketplace with more innovative solutions."

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

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