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RESOURCES

INVENTION

Open-Source Media

RealNetworks' gambit to bring video to your cellphone

By David Kushner

Multimedia is opening up a vast new frontier for software companies, thanks to the rapid growth of broadband connections to desktop computers and ever more capable cellphones and wireless PDAs. Instat/MDR, a technology research firm in Scottsdale, Ariz., estimates that the demand for rich media content is going to rise dramatically: the U.S. mobile video services market is expected to leap from today's US $53 million to $5.4 billion in 2009, primarily for video messaging and streaming content. Along with content, the demand for the software to bring that multimedia to users will skyrocket.

Not surprisingly, there's a lot of jostling for position among software vendors: content providers are going to use the software with the biggest user bases to give them the largest possible audience for their content-creation dollar.

While Microsoft Windows Media Player dominates the desktop world, the broader consumer electronics market is still a work in progress, especially the wireless market, where Instat/MDR estimates that Media Player is found on only 1.2 million handsets.

Right now that pales in comparison to RealNetworks Inc.'s market share. The Seattle-based company's RealPlayer is found in 7 million to 10 million cellphones, according to market researcher Zelos Group Inc., in San Francisco.

RealNetworks executives intend to maintain that advantage. They realized two years ago that to beat Redmond, Wash.-based Microsoft's marketing in this new arena, they would have to first win mind share among those itching to get multimedia content like news, sports, movies, music, and games onto a bewildering array of cellphones and PDAs. And that meant a bold licensing and development model cribbed from the pages of the Linux success story, but with a novel twist.

FOR YEARS, COMMUNICATIONS TECHNOLOGY firms such as Motorola Inc., in Schaumburg, Ill., and Nokia Corp., in Espoo, Finland, have been coding unique delivery software for each platform, format, and operating system used in their devices. In its approach, RealNetworks sought to develop a more efficient solution than trying to offer customized versions of its software to run on every make and model of gadget that might come along.

The company looked to the success of Linux as a guide to its own survival and came up with the Helix DNA platform, an open-source media project launched in July 2002. "We had

to take a more universal approach," says Kevin Foreman, RealNetworks' general manager for Helix. "We realized that we weren't able to solve all our customers' problems. It was time to let the customers scratch their own itch."

Helix provides the basic functionality required to create and play back digital audio and video content. This content can be distributed as stand-alone files, like music singles, or it can be streamed from a central server, like a television broadcast. On top of this standard framework, other applications can then be built.

Developers who are happy to employ the open-source version of Helix software must agree to licenses that include provisions to ensure that developers feed any innovations back into the community. But people aren't always willing to show their cards. "It's great for researchers," says Foreman, "but lousy for Motorola." So RealNetworks also offers the Helix software under a closed, proprietary license that lets companies keep the source code of any modifications or applications built on top of Helix to themselves, with RealNetworks receiving royalties.

Helix's code is derived from RealNetworks' original proprietary multimedia software suite. By allowing other people to see and modify the code for their own needs, such as adapting the media player to run on a particular brand of cellphone, the company hopes to benefit from the kind of technical development and flexibility that took Linux from a toy operating system that ran only on PCs to a powerhouse that can run on anything from embedded controllers to mainframes.

The company launched an accompanying Web site that acts as a sort of mission control for Helix developers, http://helixcommunity.org/. "Two years ago, we thought we'd have five or 10 developers at most by now," says Foreman. "Instead, we have 60 000." At the moment, there are a total of 38 Helix projects, touching on everything from Instant Messaging to 3-D gaming. Projects are suggested by developers, and then proposals are circulated through mailing lists—more than 70 proposals are usually making the rounds at any given moment.

Which projects get taken up is determined by a process of natural selection. If a project develops enough interest, RealNetworks gets behind it, devoting server space to it and tapping one of its employees to be the official project lead. If not, the project falls by the wayside.

The company assigns roughly 250 of its 900 full-time employees to Helix projects. They try to govern how the projects come together, ensuring that work is not duplicated and that interoperability between projects is maintained as much as possible.

Within the Helix community, developers are primarily engaged in creating two sorts of media-based projects: content-creation tools and media-delivery systems for cable and DSL providers, as well as mobile carriers. Though markets vary, the common goal is ultimately the same, says Foreman: "Let's together build an industry-standard media format that reaches every platform and operating system."

The community Web site also serves to keep the proprietary and open versions of the Helix code in sync: everyone who contributes to the Helix code base must assign joint ownership in the copyright of the code to RealNetworks. The contributing company is then free to integrate the code into its proprietary offering, sidestepping the restrictions in open-source licenses that generally forbid companies from selling proprietary versions of the software.

While it would be possible for developers to take the Helix code offered under open-source licenses and make their own changes without assigning the copyright to RealNetworks, they would then have to establish their own community of developers and users to make any serious progress—a powerful disincentive.

On the open-source side, RealNetworks uses the standard GNU General Public License and its own RealNetworks Public Source License, while on the commercial side, its license includes a free research and development license. If and when a company goes commercial with a Helix-based product, RealNetworks receives a royalty; in return, it gives the licensee dedicated technical support, something not available to the free licensees. And, importantly, the companies taking the commercial licenses get to keep their source code proprietary. RealNetworks estimates that 50 percent of its Helix developers adhere to the commercial license.

RealNetworks is about to find out if its open-source gambit is going to pay off, as the first wave of Helix-powered hardware reaches the market. So far, only a handful of such devices have been released, including the Sony Vega television in Japan and the palmOne Treo 650 smart phone in the United States. No doubt other software vendors are watching closely; an open-source model that compels all developers to assign copyright back to the "mother ship" could soon become the preferred way to nurture communities of developers.