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## Building a 21st century radio

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**There's more at stake in Howard Stern's flight from the FM dial to a cutting-edge satellite broadcaster than fuddy-duddy programming restrictions: The shock jock's high-tech leap underscores a widening digital divide between the old world of radio and the new.**

The rise of the iPod, digital television, TiVo and other high-tech entertainment devices has made it painfully clear to many that traditional radio's continued reliance on analog transmissions is outdated and has to go. Now radio is facing a technological transformation from both above and below, as stations begin to move from analog transmissions toward the new digital medium, and as companies and consumers apply high-tech tools to capture broadcasts in their current nondigital form.

"Radio cannot remain the only analog player in a digital world," said National Association of Broadcasters Chief Executive Officer Edward Fritts, in a keynote speech at the industry's annual convention in San Diego this week. "This industry has always been a business filled with risk-takers. But in my view, the real risk is for those unwilling to embrace the promise of HD (digital) Radio."

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#### What's new:

The rise of the iPod, digital television, TiVo and other high-tech devices suggests that traditional radio's continued reliance on analog transmissions is outdated and has to go.

#### Bottom line:

Although widespread digital radio services are still some way off, growing interest in TiVo-like radio features is spurring a cottage industry of services promising to put current analog radio signals onto hard drives.



Digital technology is coming slowly but surely to radio, promising to rock the industry with enhancements such as improved reception, as well as on-demand programming and time-shifting that have begun to tantalize TV viewers even as they terrorize Hollywood.

Digital radio growth has been slow in the United States, but adoption is ramping up quickly overseas, where "memory radios" that allow listeners to pause, rewind and record live broadcasts are already being sold.

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The U.K.-based Digital Radio Development Bureau said this week that it expects cumulative digital radio sales to hit 13 million in the U.K. by 2008--that's about 29 percent of all households and would create an annual market value of \$891 million. The group said unit sales of TiVo-like memory radios will grow from 36,000 in 2004 to 261,000 in 2008, generating revenues of \$8.9 million and \$56.8 million, respectively.

By contrast, digital radio receivers are just beginning to hit the U.S. market. Boston Acoustics released one of the **first home digital radios** at the NAB show Wednesday. The system does not include a hard drive to record the digital radio content, however.

In the United States, the digital radio technology approved by federal regulators is based on work from a company called iBiquity Digital. That company is working on several new features, including the TiVo-like ability to record and replay broadcasts, said iBiquity vice president of marketing David Salemi. Other features will include on-demand access to features such as traffic or weather reports, probably at the touch of a button, he added.

U.S. consumers saw a glimpse of the future in a recent furor over software called TimeTrax that allowed consumers to record XM Radio broadcasts and store them on their computers as MP3 files. The satellite radio company **subsequently discontinued** the PC-based satellite broadcast receiver, due in part to fears over how the recording industry would react.

Holding back the tide may be difficult.




Although widespread digital radio services are still some way off, growing interest in TiVo-like radio features is spurring a cottage industry of services promising to put current analog radio signals onto hard drives.

A new company called AudioFeast produces copy-protected, **downloadable radio programming** from NPR, the BBC and other stations for the iPod generation. Audiobook company Audible has long offered digital versions of some radio shows to its customers as well.











A network of bloggers is offering up "**podcasts**"--or pre-recorded Net radio shows that can be downloaded as a single file to an iPod.

A few companies are starting to offer services that aim at providing TiVo-like recording capabilities for analog radio broadcasts. **As previously reported**, one of these, Griffin Technologies in Tennessee, produces a shark fin-shaped device called "**RadioShark**" that plugs into a computer and records broadcast radio onto the hard drive.

Listeners can pause and fast-forward the show the same way they can with recorded shows on TiVo, the company says--but because there's no digital information that comes along with the shows, there is no program guide or skipping between songs.

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More TiVo-like functions might be on the way soon. Griffin is talking with online music company Gracenote about licensing technology that recognizes audio "fingerprints." With that capability, the RadioShark might be able to identify songs as they are played on the radio, creating a more useful archive of work on a computer hard drive, said Andrew Green, Griffin's vice president of marketing.

"If you just take analog radio as it is now, it's very difficult," Green said. "Nothing like TV schedules exists (for radio). But there are a couple of things we can do."

Such developments are making the recording industry nervous. Record labels are already worried that digital radio will allow people to record and keep pristine copies of music, and they've lobbied federal regulators to include some kind of anticopying mechanism in the digital radio standards.

But while that debate is ongoing, the broadcast industry is already making the switch. The Federal Communications Commission set the basic digital radio standard, based on technology from a company called iBiquity, late in 2002.

According to that company's Web site, almost **400 stations are now licensed** to broadcast in iBiquity's HD Radio format, although far fewer than that are actually broadcasting today. Recent announcements have included news that giant Clear Channel would upgrade 1,000 of its top stations to digital format within the next three years.

"That was like a domino that needed to fall," said iBiquity's Salemi. "By the end of the year, we're going to have anywhere from 2,000 to 2,500 stations licensed or committed to move over to digital."

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