

Want to Attract More Consumers? Use Java™ Technology

Content creation, management, distribution,
and consumption



Highlights

Never has the need for a common language spoken by the complete value chain been more glaring. That language is Java.

- Java technology ties together a diverse set of digital content sources, including cable, satellite, and broadcast TV.
- The global Java community is the second largest brand of software developers on the planet.
- Java code powers more software than any other development language.



Electronic entertainment is in an intense transition. The lines between content creation, management, distribution, and consumption are blurring. Digital media convergence is happening everywhere, and Java technology is at the core of it. If you look behind the scenes of both broadcast and cable media, you see it taking place. Packets are replacing signals. Digital devices are replacing their analog ancestors.

A single digital entertainment file created by a filmmaker or writer will be passed between hundreds of participants on its way to distribution. And the incredible array of devices consumers will use to view it—TVs, DVD players, computers, mobile phones, digicams, iPods, kiosks—is growing every day.

Never has the need for a common language spoken by the complete value chain been more glaring. That language is Java.

Java technology is the foundation for the majority of today's consumer services, intelligent secure networks, content management systems, and distribution software. It has changed the way content is created, managed, and consumed, and we all have many, many more opportunities as a result. You can see it in action.

Consumers want their content to follow them from room to room, and from the home desktop to the go-everywhere handheld, from TV to mobile and back. The Java platform is on the job as today's most widely used software technology for ensuring the consistency of enhanced content across these devices. And, Sun Microsystems touches more consumers with its software than any other company.

That's because Java technology ties together a diverse set of content sources and technologies, such as cable, satellite, and broadcast TV through OCAP and MHP, consumer electronic devices via Blu-Ray Disc, PCs and Apple products via Java-enabled browsers, and new media distribution through a wide range of handheld devices. It's everywhere consumers are.

Java technology is also opening the door for a parade of innovations and new revenue models. Cross-platform digital rights management and identity management enable personalized and interactive video and advertising. That ability delivers much more highly targeted advertising based on user preference, instead of just device preference. Stay tuned, this is just the beginning. The future is full of possibilities.

Why Media Content Creators and Distributors Use Java Technology

Cross-platform Compatibility and Interactivity

- **Share and Leverage Resources:** Java applications and content run on practically any digital device, so sharing files with creation vendors and distribution partners works no matter what type of system they use. For example, Java technology-based content designed to enhance a broadcast television program is easily targeted to support a variety of mobile devices also.
- **Move Up Painlessly:** Java technology is especially useful for applications that integrate and connect legacy equipment and content to today's IT-based content management and distribution systems. For instance, Sun's award winning Digital Asset Management Reference Architecture 2.0 contains Java applets for interfacing automation systems, such as Harris, with IT-quality storage systems.
- **An End-to-End Solution:** Java technology is the only software you need, from creation to distribution and consumption. There are no gaps in its capabilities.

Reusable Code, More Efficient Development

- **Cut and Paste:** By reusing functionality from tested code, you save time and money, not to mention headaches.

- **From Tiny to Huge:** The Java platform is available in specific editions for micro devices, desktop systems, set-top boxes, and enterprise environments to fit your specific needs.

A Huge, Thriving Community of Standards-based Developers

- **Need Help?** There are over four million Java developers worldwide, so you can always find development expertise when you need it.
- **Go Boldly with Confidence:** Java technology is based on compatible platform standards and strict compatibility testing. If an application bears the Java logo, it is compatible with other similar Java devices.

Rendering Close-up: Dygra Films

Accelerated Production

When Dygra Films in Spain produced Europe's first computer-animated film, *The Animated Forest*, and it was nominated for the 2002 Academy Award for Best Animated Film, they knew it wouldn't be their last. They also knew their .NET/Windows and Intel rendering environment wouldn't last through the next film. They desperately needed to eliminate their 3-D rendering bottlenecks for good.

That's when they reviewed all the alternatives and adopted Java technology, the Sun Solaris operating system, and Sun servers and storage to cut the wait time and accelerate the production schedule for their next film: *Saint John's Midnight Dream*. The result? A 24-hour a day dream. Because of the efficiencies of Java development, and the fact that their Sun servers process Java code faster than others in their class, Dygra was able to cut their overall film production time by 50 percent. They're so happy with Java technology, they've extended and applied it throughout their general work processes.

Smooth Distribution without Delay

Java Software Handles the Hand-off

Spotlight: Digital Media Management

Developed by Sun and WGBH, Boston

Picture this: You've built a digital broadcast center with multiple format channels. You've escaped analog asset storage and replaced it with an instant-access digital file-based archive. You've got a resolution-independent ingest and playout system supporting SD, HD, VOD, IPTV, and the web—broadband and mobile. Your creative and engineering staff all communicate through the system. What's the common thread? Java technology, for flexibility, interoperability, and security.

Sun's Java software-based Digital Media Asset Management Reference Architecture 2.0 is now the industry's most powerful and secure software for planning and deploying integrated digital asset management systems for video, audio, and rich media. Integrated components—such as broadcast playout servers from Grass Valley, Omneon, Pinnacle, and Leich—all have Java technology-based interfaces to IT-centric storage solutions from Sun. Today, these solutions are at work in rich media companies around the world, including Comcast, Major League Baseball, TV4, and Stanford University.

Serve Your Audience on the Go

Sun Java System Content Delivery Server

One of the next challenges for our industry is how to deliver and monetize powerful mobile content. Consider it solved. Sun's Java System Content Delivery Server gives you a complete mobile content vending platform. It eases and personalizes the mobile-content experience for users and gives providers all the tools to monetize existing content—from promotions, coupons, bundling, trials, and pay per use—on practically any Java technology enabled device.

Direct to Your Mobile Device: HBO

Encode and Distribute, Untouched by Human Hands

HBO recently standardized on Sun technology to make a transition from standard-definition (SD) and high-definition (HD) video tape-based environments to a server-based storage and playout system that delivers high speed and 99.999 percent reliability. A key element of the system is its Java technology-based integration with Grass Valley Profile and K2 play-to-air systems from Thomson. Java technology has enabled HBO to replace videotape with a digital media workflow and delivery solution that's shared across play-to-air, Video on Demand (VoD), and mobile distribution, streamlining their program delivery to HBO and Cinemax networks, cable aggregators, and mobile devices worldwide.

Highly Conspicuous Consumption

Giving Consumers What They Want, Where They Want It

There is no doubt that consumers love Java software-powered entertainment and devices. They are everywhere you look, even if you don't recognize them. As many as 1.4 billion Java powered mobile phones are delivering content to consumers, with an additional 50 million added every week.

And that's good for the industry, because Java-powered mobile phones and MHP set-top boxes are rolling out in record numbers. OCAP set-tops and televisions and Blu-Ray Disc players will launch this year in a big way also.

No Mobile Phone Can Do That! O.K., One Can

Sanyo MVP, the Mobile Video Platform

Think of how many sports fans carry cell phones. A growing segment of that audience is now watching their Mobile ESPN content on Sanyo MVP phones—the ultimate sports fan phone, and one of the most capable wireless devices around.



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It's a great example of Java integration: music player, digital zoom video and still cameras with a flash, EVDO high-speed networking, and the world of ESPN: video shows, live Gamecast graphics, box scores, team and player stats, and fantasy sports.

The relationship between the Java community and mobile handset manufacturers is one of the greatest success stories in technology. Now Sanyo and ESPN are showing us what is possible with mobile content focused on an audience whose name comes from the word "fanatic."

Networking Hits Home

Let the Content Flow to Every Room

Consumers want the freedom to move around the home, and that's what the members of HANA, the High-Definition Audio-Video Network Alliance, want too.

HANA-standard based products will include HDTVs, set-top boxes, DVD players, personal video recorders, and even home theaters.

They will let home viewers watch, pause, and record at least five HD channels simultaneously, anywhere in the home, from one set-top box. HANA products will also let consumers securely share content between PCs and other home-entertainment devices, and best of all, do everything with just one cable per device and one remote control for them all.

HANA 2.0 will add Java technology to enhance the content's visual impact and enable inter-device networking capabilities. HANA's members include Charter Communications, JVC, Mitsubishi Digital Electronics America, Inc., NBC Universal, Samsung, Sun Microsystems, Texas Instruments, and Warner Bros. Entertainment.

High Def Java Code Is Coming to Your Screen

Blu-Ray Sets a New Standard

DVDs will soon be replaced by a high definition optical media format using blue laser technology to store 50GB on a disc. It's called Blu-Ray technology, and it delivers unsurpassed picture

and sound quality. Java technology gives it interactivity and added content going far beyond today's DVDs, including online access, which can refresh your library of discs years after you've purchased them.

Let's see: Interactivity, the Internet, Java technology, Sun, HD-capable optical media, and that HANA thing above, it's all starting to come together. What's missing?

Gaming Goes Non-linear

Put on Your Helmet, Grandpa, We're Goin' for a Ride

Just go to java.com and take a look at what 16 million visitors each month download. Games represent some of the most technically demanding and popular software applications on the planet.

The games audience is the 900-pound gorilla that wants "more, faster, right now." There are over a million users online at this instant playing multiplayer games. They're not watching TV. They're racing through the streets of Paris, shooting each other in jungles, trying to get close to Guinevere, buying land on a hidden island. They're on PCs, game stations, DVDs, and mobile phones with a passion. The monster must be fed new content continually, and it better be good. Java technology's cross-platform compatibility and rich network interactivity is playing a key role in the games industry. Ask any teenager.

Java Technology, the Name Your Viewers Know

Wherever They Go

Java technology is changing the landscape of how content is built, packaged, sold, bought, viewed, and heard. It transcends the traditional compatibility barriers. And it makes everything interactive. It's no surprise why it's become one of the most recognized technology brands worldwide*.

In short, Java software is letting us see what we want, on the device of our choice, when we want it. If you want a bazillion interactive viewers, you'd better pack some Java code to go.

* The Java brand is one of the hottest technology brands in the world, recognized by over 86% of tech-savvy consumers around the globe (source: Momentum Research, Nov. 2004, 2003)

Learn More

To learn more about the solutions that Sun Microsystems can offer the Media and Entertainment industry, please visit www.sun.com/media.



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