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The Slow Rise of 3D on the Web

Technology and market drivers are removing barriers and accelerating adoption of 3D on the Web

For a number of years now, 3D on the Web has been a presumed "coming thing" for the graphics industry, and many companies placed their bets early. The technology has advanced, but for a number of reasons, the market itself has been slow to make widespread inroads for consumer, commercial, and educational applications.

On both the playback and development side, a number of barriers still impede adoption of 3D on the Web. The first is bandwidth. The ability to view and interact with 3D content requires a fast Internet connection, which most consumers still don't have. Then there is the problem of the 3D players themselves. Each is based on a proprietary format and must be downloaded before a user can view content. Finally, on the development side, 3D content creation remains a bottleneck in terms of the number of developers skilled enough to use the tools. Compare the roughly 200,000 active 3D graphics professionals to the 10 million-plus users who are currently deploying 2D Internet content. In order for 3D to be come ubiquitous on the Web, the tools must be accessible to the majority of Web developers who are not already 3D graphics professionals.



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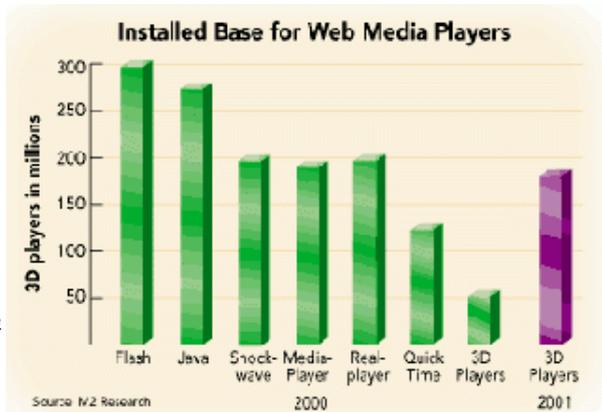
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Slowly, over the last 18 months, technology and market drivers have been helping to remove these barriers and accelerate penetration and adoption rates of 3D on the Web. M2 Research findings show that broadband is growing, with an installed base of about 8 million users in the US in 2000, as opposed to 2.7 million in 1999. New game consoles, such as Sony's Play Station2, and the soon-to-be-released Microsoft Xbox and Nintendo GameCube mean that Web-based real-time 3D multi-player gaming will be available to a large consumer audience of game enthusiasts. And advances in embedded 3D graphics hardware will enable new applications for Internet appliances and hand-held devices.

Currently, 17 percent of all Web media players are 3D enabled, which translates to roughly 51 million units. Many 3D player vendors realized last year that they needed to



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Last year, the installed base for 3D-enabled Web players was outnumbered by 2D Web media players such as Flash and Java. In 2001, the installed base for 3D players is expected to more than double—from approximately 51 million in 2000 to approximately 124 million in 2001.



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directly support the more standardized 2D players such as Flash, Shockwave, Real Player, QuickTime, and Java. This sort of pairing up should make it easier for 3D Web players to enter the mainstream market. By the end of 2001, we estimate that 32 percent of all Web media players will be 3D enabled.

Aside from the proliferation of 3D players, integration of 3D for Web-specific applications such as entertainment, e-commerce, and education is on the rise. In 2001 we project that 15 percent of all the 3D content developed from animation packages will be used to create 3D content specifically for the Web, up from 7 percent in 2000. The current tool of choice for creating 3D Web content is Discreet's 3ds max modeling and animation software, but there is ample room for additional tools, and many competing tool vendors are unveiling their Internet strategies.

Even with these improvements, however, the content production process remains a major bottleneck to wide deployment of inexpensive, compelling 3D content. If we consider the millions of Web authors currently not using 3D, it's easy to see that there is a need for a new set of 3D tools to support the existing Web authoring, video, and other 2D imaging tools.

These 3D tools must be as easy to use as others on which creative professionals and digital designers currently depend. Ultimately, the key success factor for 3D Web content will be its ability to work seamlessly in tandem with already-established types of Web content-video, 2D graphics, and audio. It is the convergence of these media components and the delivery of new platforms that will drive the Internet's next technological and social evolution.

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