Designing Hybrid CD-ROM/Web: A Reality Check

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Introduction

When discussing multimedia development and delivery we come across a heated debate between two different camps. Those promoting and defending CD ROM based technologies and others promoting exclusive Web based technologies. This paper explores some issues surrounding these debates and it looks at the Hybrid CD ROM/Web technology that takes the best from both. When considering the use of multimedia technologies, issues concerning authoring, delivery and content updates are the most important. In particular, questions focus on whether the authoring tools are powerful and easy to use with both formats and whether there is a real benefit from using this technology.

Why use hybrid CD-ROM/Web technology?

CD-ROM has been considered by many as a good and inexpensive vehicle for delivering interactive multimedia content. The major criticism of CD-ROM is that its content is static and quickly becomes out of date. On the other hand Internet and in particular the World Wide Web, offers incredible flexibility, real time information and distributed collaboration. On the negative side, the bandwidth and authoring capabilities are very often criticized and are often seen as the major obstacles in the creation and delivery of multimedia content.

It has often been suggested (Ozer 1997) that improvement in the Internet bandwidth will eventually kill the CD-ROM. It is also widely agreed that wide adoption of Web in the developers community will improve the authoring tools as well. If this will eventually happen and if so when is open to speculation. Meanwhile, the advantages of utilizing both technologies to create hybrid CD-ROM/Web content should be considered as a bridged solution.

Different types of Hybrid CD ROM/Web Designs

It has been estimated (Cole 1997) that in the mid-1996 there were 350 or more hybrid titles and that by the end of 1997 there will be around 3500 titles available. Many are from well established companies such as Microsoft, Voayager, Grolier, Dorling Kinderslay and others. Careful evaluation of these products will allow the seperation of marketing hype from the useful tools that will improve the development and delivery of multimedia content.

The major types of hybrid CD-ROM/Web designs to consider are:

1. CD-ROM media content ( video, audio, large graphics ) accessed directly from web browsers (could be either local or remote mode).
2. Interactive multimedia titles with simple link to a web site by launching a web browser.
3. Interactive multimedia titles with links to the various media content update site or sites (e.g. Microsoft Baseball, Cinemania 97).
4. HTML-based CD-ROM with HTML structured content (e.g. Encyclopedia Britanica 2.0).

Each format has its own strengths and weaknesses and we can choose those elements that are particularly suitable to our application.

Creating hybrid CD-ROM/Web Content

There are several authoring tools available on the market today. Asymetrixis ToolBook II, Allen Communicationis QuestNet+, MarketScapeis WebCD, Macromediais Director 6.0 and Authorware 4.0 and others embrace the Internet integration more effectively and with various ease-of use. We have chosen Director 6.0 and Authorware 4.0 for our projects because of our familiarity with the software, its suitability to our particular content design and its cross-platform capability. In particular, Director 6.0 offers good integration with Java, so that movies can be embedded as applets. Similarly, Java applets can be played within Shockwave movies. Other enhancements to the Director 6.0 include support for Active X controls, QuickTime VR, QuickDraw 3D, DirectSound, JavaScript and LiveConnect. These capabilities offer a number of advantages over other authoring tools.

Conclusion

With the advances in Internet-based technologies, such as VRLM 2.0, proposed HTML 4.0 and XML markup language, improved Java JDK and just in time (JIT) compilers, ActiveX and Java Beans the integration of CD-ROM looks very promising (Gustavson 1997).

At the CITD, we have started to create a University of Toronto at Scarborough Promotional CD ROM. It will consist of promotional video clips, animation and voice-over with many images - media that CD ROM handles reasonably well. On the other hand, fast changing textual information is well implemented on the Web. Placing media intensive part on the CD ROM (such as video and animation) and linking the changing textual information (such as course calendar, timetables and other information) presently available on the Web site to it seems to be the best solution for now. The projected completion of this Hybrid CD ROM/Web project is July 1998 and complete report on this project will be generated as well. At the same time we are also evaluating the possibilities of using this technology in several distance education projects. Similarly, many publishers today consider CD-ROM not as exclusively standalone product, but rather see it along with the Internet, as a hybrid strategy in their publishing effort (Cole 1997).

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