Technology Applications Group Multimedia CD-ROM Project

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Abstract

To produce a multimedia CD-ROM for the Technology Applications Group which would present the Technology Opportunity Showcase (TOPS) exhibits and Small Business Innovative Research (SBIR) projects to interested companies. The CD-ROM format is being used and developed especially for those companies who do not have Internet access, and cannot directly visit Langley through the World Wide Web. The CD-ROM will include text, pictures, sound, and movies. The information for the CD-ROM will be stored in a database from which the users can query and browse the information, and future CD's can be maintained and updated.

The Project

The Technology Applications Group needed a way to transfer technological ideas to the private sector companies. A great way to transfer this technology is reaching millions of people through the Internet. However, another huge section of society does not have Internet access, and those are the people and the companies that we hope to target with this and future CD-ROM's.

The CD-ROM team consists of Myrna 'Sya' Rivera, a senior at Christopher Newport University majoring in Computer Information Science, Dr. Joshua Anyiwo, Associate Professor of Physics and Computer Science at Christopher Newport University, and myself, a recent graduate of Christopher Newport University with a degree in Computer Information Science. Sya and Dr. Anyiwo started work early, and at the end of a previous job, I joined them on the June 5th beginning of the 1995 LARSS program. Stuart Pendleton, our mentor, knew that this would be a very interesting, yet time-consuming project and suggested that they begin as soon as possible. There was a huge learning curve that was associated with this multimedia project . None of us had experience in multimedia, but Sya and I had worked together before in a team environment developing World Wide Web (WWW) pages for our senior project at CNU under direction of Dr. Anyiwo. This gave us a general knowledge of graphical user interface (GUI) development and the structure of information and ideas.

In the beginning, the team had considered developing the CD-ROM in the Hyper Text Markup Language which is used for development of World Wide Web pages on the Internet. However, due to limitations in time and the ability to acquire distribution rights of the WWW browser, the group decided to use a relational database format.

The purpose of producing the CD-ROM is to inform the different organizations of the TOPS exhibits and the SBIR projects at NASA. The CD-ROM will allow companies that cannot afford Internet capabilities or to send representatives to the TOPS exhibits, the opportunity to obtain the information available. The CD will also allow small businesses to quickly access information on TOPS or SBIR projects and determine if they could use the technology, o would like to participate in the development of a new technology. The primary function of the CD-ROM is to distribute information.

The TOPS portion will be composed of approximately 100 one pagers from the 1995 exhibit. The purpose of TOPS is to identify new multi-use technology opportunities and develop new partnerships with U.S. industry for commercialization of this technology. The purpose of SBIR is to seek innovative concepts that meet NASA mission needs, as well as have the potential for commercial applications.

The Design

Maintainability
The design of the CD-ROM is modular, meaning that maintaining and updating the CD will only require updating the necessary information contained in the database, such as video, audio, text and movies.

Usability
The GUI format of the CD will require that the users 'click' on the desired information or enter a keyword for topical searches of the TOPS technologies..

Reusability
Storing the CD information will keep future developers from having to start from scratch. Inputting the new information is all that will required.

Extendibility
Changes to the CD can be made through changes to the database and how the information can translated into Hyper Text Markup Language (HTML) for future LARSS students.

LaRC Equipment and facilities

Software
Software used included Microsoft Power Point for graphics and presentation formats, Microsoft Excel for a few spreadsheet documents, Microsoft Word for lots of word processing. We also used Claris Impact and Color-It to produce the screen layouts including the clip art, gradient backgrounds and a variety of colored screens. Adobe Photoshop was used for scanning images and enhancing the images quality of color, brightness, etc. Adobe Premiere was used for editing the video and audio portions of movies and remaking the movies with the changes. Fusion Recorder was used to gather video clips from a VCR using an audio/video capture board. Movie Shop was used to process the Premiere movies and apply compression algorithms for play back off of a double speed CD-ROM drive. Netscape, a WWW browser was used to gather information. Fetch, a FTP software package was used to download needed files. Microsoft FoxPro was used to assemble all of the data sources in one program for ease of use and browsing.

Hardware
The team used huge amounts of hardware and computing power. The three of us each used a Power Macintosh. I had a 21" monitor that was absolutely fabulous. I also had an 540 Mb internal hard drive, as well as a 1 Gb external hard drive. This amount of space was essential since some of the movie files that were created exceed 350 Mb a piece. Some of the other equipment consisted of a ScanMaker II scanner, a Pinnacle CD-ROM writer, and a VCR.

Facilities

For the most part, we used the equipment in our office, and got information and files of the network and file servers. We did request some information and images from Graphics, as well as the Video Production Lab.

Conclusion

We hope to have the CD finished by the end of this week, or the very beginning of next week. We will probably present the CD to the Technology Applications Group on Monday, August 14th. We have learned a lot, and made long strides of progress. I have learned a great deal, and value the experience that I have gained.