

# Case Study



## STREAMING MULTIMEDIA CONTENT DISTRIBUTION NETWORK FOR MOBILE DEVICES



*“Idhasoft is a global world-class organization providing best-of-breed localized business and technology solutions, with continuous innovation and quality backed by best-in-class people”*

## Client Requirement

The module will be an interactive streaming multimedia application capable of audio and video content distribution over various networks.

The application will allow users to add tags to a video file and view the video along with any tags associated with the video.

Uploaded videos could be tagged either at the client end or at server end.

The user will be provided with a choice to view the tags while the video is being played or when the video has finished playing.

Users will also have the option to download the tags and save the tags locally.

The communication medium between the client devices and central server for the application will be WLAN, GPRS networks.

## Challenges

Developing an interactive streaming multimedia application allow users to add tags to a video file and view the video along with any tags associated with the video.

Incorporating the module with a system that works as a web server and is capable of delivering location-based, proximity content distribution services within a certain range.

Providing users the functionality to view the tags while the video is being played or when the video has finished playing.

Enabling users to download the tags and save them locally.

Enabling the system to use WLAN, GPRS networks for communication.

Ensuring safe and secure transfer of data.

## Technologies Used

### Web Server Environment

Operating System	Windows 2003 Server
Language	VC++ 6.0, Microsoft Platform SDK
Database	MS-SQL

### Bluetooth stack (BT Node)

Operating System	Windows XP
Language	VC++ 6.0, Microsoft Platform SDK

### Windows Desktop Client Environment

Operating System	Windows 2000 Server
Language	VC++ 6.0, Microsoft Platform SDK

### Mobile Devices Environment

Operating System	Windows Mobile 2003 Phone Edition, Windows Mobile 5.0, Symbian Series 60 (before third edition).
Language	For Symbian: Carbide, .Net, Codewarrior. For WinCE: Visual Studio 2005, Win32 SDK, PocketPC 2003 SDK, PocketPC 5.0 SDK, Smartphone 2003 SDK, Smartphone 5.0 SDK.
Database	Symbian: XML, Symbian native database. WinCE: XML , EDB

## Manpower

Project Leader	1
Developers	7
Designers	2
Quality Assurance Testers	2

## Planning

Taking into consideration the functionality of the server, the following development areas were charted out to be elaborated upon:

- o The Web server using HTTP protocol for communication with the Web browser.
- o Connection management by the server through WLAN, GPRS networks.
- o Development of the video editing (tagging) and viewing tool for the user.

## Architecture

The Web Server was identified as the core component of the streaming multimedia system. Via the Web server, it could be possible to configure and monitor the entire system. The Web server would also allow for centralized monitoring of the security and keep track of mobile & PDA users to display location-based content that was made available either through WLAN, GPRS networks. Web server and the central server were designed to run on Windows. Web server functioned on static IP address. Mobile users could connect directly to web server using GPRS, WLAN. Security was ensured through designing web pages to handle communications by interacting with the database via the implementation .Net pages.compose SMS or MMS and send it to the respective gateway to ensure effective performance.

## Development Highlights

The system facilitated video uploading and downloading for users besides providing extensive features for creating tags for video uploads. The tags were user-dependant and could be created in image, video and text format. The tagging process was implemented such that the tags could be edited while the video was being played (real-time) or after the video was done playing (differed-time), effectively allowing greater freedom for users. Various video categories were incorporated in the system to systematically index all videos and allow for user-defined category preferences. After proper validation, users could also edit their video uploads on the system itself. A superior video conversion engine was exclusively created to make different video formats compatible for being played on various mobiles as well the PC. Besides offering crossplatform usability, the system also ensured seamless playing of videos by dividing video files into smaller clips depending upon their size. These clips could be easily streamed in succession while more clips were being downloaded through the backend process, creating the illusion of breakfree and continuous video play. The system was developed and fully functional within a span of 4 months.

## Client Feedback

“...GMI is a fantastic company to work with. Easy communication with technical management, experienced programmers and creative designers all met my expectations and delivered the application successfully. We will continue to work with GMI as partners for a long time ...”