

# Case Study



## LOCATION-BASED AD 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 system will be an end-to-end, location-based, proximity content distribution server for advertising purposes that would run on the Windows platform and utilize both Bluetooth & GPRS wireless technology for communication.

The system will be capable of interacting with wireless devices available in range, forming a personal local area network (in case of Bluetooth) and making data accessible to any wireless device enabled with the downloadable wireless client.

The software will enable mobile users to access the Bluetooth/GPRS wireless network located at specific & certified locations and benefit from various value-added services & localized information.

The system will be targeted towards marketing purposes, business advertisements, and infotainment services.

The system will be made available for shopping centers and other such customer-centric services based on their location & proximity to retail outlets.

## Challenges

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

Enabling the system to use both Bluetooth & GPRS wireless technology for communication.

Developing a personal area network through the system and making data accessible to any wireless device enabled with the downloadable wireless client.

Equipping the system with dependable framework capable of supporting a range of value-added services & localized information made available to customers over the network.

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

## Manpower

Project Leader	1
Developers	5
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 The Mobile clients using Bluetooth stack (BTNode) for accessing mobile devices (in case of Bluetooth) or Packet based UDP / IP in case of GPRS.
- o The Windows Desktop client using internet protocols (TCP/IP) for the Web Server to communicate windows desktop clients or Bluetooth stack (BTNode) if the PC is Bluetooth-enabled.
- o Integrated third party SMS and MMS gateway to support SMS and MMS ads.

## Architecture

For providing quality location-based advertising services, the Web Server was identified as the core component of the 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. The server was made available on Windows platform, equipped with a number of BT Nodes. Data from mobile terminals could be routed via the BT Nodes to the Web server where it can be accessed from third party applications. The Server was designed to keep track of mobile & PDA users to display personalized and location-based content and advertisements when they access the client services through Bluetooth or GPRS. The Mobile clients would either use Bluetooth stack (BTNode) for accessing mobile devices or Packet based UDP / IP in case of GPRS. The Web server would interact with the database using .Net pages. The system was integrated with third party SMS and MMS gateways to support SMS and MMS ads. Instead of directly connecting to the database, the Web server would compose SMS or MMS and send it to the respective gateway to ensure effective performance.

## Development Highlights

The system provided complete solutions for exhaustive end-to-end location-based advertising and large-scale marketing activities by making content available for users through the Bluetooth or the GPRS. The system equipped the marketers with numerous options for composing SMS and MMS ads which they could utilize as mass broadcasts and campaigns. The system was made capable of sending out reply-enabled alerts which could be used to conduct polls and gain valuable user preferences, statistics and other user-related information. The site was developed and fully functional within a span of 6 months.

## Client Feedback

“GMI was a very satisfying provider to work with. Performance was excellent and above expectations. They are very professional in their approach and are sure about their requirements. They are quick to respond with our requirements and specs. They are open to reason and appreciative. We are looking forward to work with them soon.”