



**GREY MATTER INDIA TECHNOLOGIES  
PRIVATE LIMITED**

[www.greymatterindia.com](http://www.greymatterindia.com)

**CASE STUDY**

**SALES TRACKER MANAGEMENT SYSTEM**

## **CLIENT REQUIREMENT**

Our client is a major business entity engaged in and excelling at the manufacture, marketing and sales of adhesive products. With a strong backbone in terms of manpower numbering to 400+, they were in dire need of a solution to track daily activities of their employees. The process of filing the daily activities, booking orders, generating the aIDA report was mundane and cumbersome, besides involving a vast amount of paperwork. The ideal resolution to this situation was an online system that could:

- Provide a means to the employees to record their daily activities in the form of timesheets and expenses
- Enable monitoring of activities by supervisors through scrutiny of the filled in timesheets
- Provide users with the ability to forecast their estimated sales and expenses
- Conceive a routing system involving all activities based on the organization hierarchy
- Provide a reporting suite for users to strengthen the data management system
- Minimize the paperwork required by the automation of the whole aIDA process.

## **CHALLENGES**

- The development of a unique Online Timesheet and Expense management tool that provides a lucid routing mechanism to the users enabling the completion and direction of the same to their superiors was the major challenge.
- Generation of complex reports involving extensive and intricate querying o the database without affecting the site performance in terms of loading speeds.
- Implementation of a flash based component enabling the dynamic creation of team hierarchy on runtime.
- Creation and Maintenance of a database with an array of interactive features including mail service, Timesheet & Expenses and Forecasting.
- Incorporation of web usability principles into the website design to provide all types of users with the ease of navigation

The most important aspect was to ensure data security.

## TECHNOLOGIES USED

ASP.NET (C#)	The appropriate solution suited to create dynamic web pages enabling faster extraction of data from the database and presenting it on the webpage.
JavaScript and AJAX	(Client-side Language) These provide optimum cross browser support & faster loading time with light web pages that require no plug-in downloads. Provision of flexibility and an enhanced user experience and involvement through Javascript based controls.
MSSQL	A good relational model server database with primary query languages that are T- SQL and ANSI-SQL.
WINDOWS 2003 server	Strong security features through the Windows OS
IIS 6	An integrated Windows Server ideal for serving static as well as dynamic content on the web in a safe and secure manner. Support for a wide variety of features while offering extendable core functionality.

## MANPOWER

Project Leader	1
Developers	5
Designers	2
Quality Assurance Testers	3

## PLANNING

Performance, security, scalability and the nature of the website were considered and a solution that was envisioned included a design approach built around ASP.NET using C# and MSSQL. As an augmentation, a 'faster to market' transition of concepts was facilitated through the implementation of a specific development structure.

Efficient access to the database in an object oriented context was facilitated through the implementation of an interface that translated the object logic to the relational logic to communicate with the relational databases in an object-oriented way. Access to the data base was enabled through the creation of an intermediary abstraction layer. Only the complex retrieval of data from multiple tables was facilitated through stored procedures and everywhere else conditional syntax was implemented to ensure seamless performance of the website. Images, applications and data were called from their respective servers keeping the UI layer free of any business logic.

## **ARCHITECTURE**

N-tier architecture was implemented with the loose coupling linking all the layers together as the structure of the site was enormous and the challenges involved numerous.

**Presentation Specific Layer:** This segment includes the page level layer which accesses the other layers beneath to present the data.

**Business Specific Layer:** This segment is the bridge between the presentation and the database layer and contains all the business logic for the different components involved in the project.

**Database Specific Layer:** This will be bridge between the physical database and the business logic accessing the data.

**Physical Database Layer:** MSSQL 2005 with the tables, views and stored procedures etc.

## **DEVELOPMENT HIGHLIGHTS**

Greater accuracy in generating reports for all the modules provided privacy and security of content on the site. Generation of the forecast reports was the crux of the application as it involved all the major complex queries and an intelligent UI that allowed the admin to drill down and see the details of each user's sales targets and actual and forecasted volumes. Optimized query features were included to offer comprehensive search and browse options and a team hierarchy mechanism was implemented for routing tasks to the supervisors. Adaptability and ease of incorporating new features was achieved through a scalable framework and web usability guidelines were followed to the tee through the judicious use of CSS and HTML controls. The site was developed and fully functional in 6 months.

## **CLIENT FEEDBACK**