



“When people are thinking strategically about their business, they will naturally be more creative than when they are dealing with the business on a day-to-day basis with all of the day-to-day problems.” - Rone Lewis, President -Ingersoll-Rand E-Business Sector

Ingersoll Rand India

Ingersoll-Rand's customers had peculiar problems - getting right spares at the right time at the right place coupled with the difficulty of locating and ordering the right parts in the company's huge spare parts manual.

As the leading player in the road construction equipment in India the onus of developing the market and introducing the customers to new web enabled logistics management was on Ingersoll-Rand.

Executive summary

Creation of a B-2-B portal for the road building industry, which creates a dedicated market place for sale of Ingersoll's road building equipment, spares and services, 24 hours-a-day, 7 days-a-week. The spare parts database of the company has been brought online and a commerce enabled Extranet integrating their dealers is being built to accommodate online transactions and also sales to end customers. A host of value-added services were built to encourage traffic.

Client Background

Ingersoll-Rand is the leading supplier of road construction and compaction equipment in the Western Hemisphere and among the top 3 global suppliers.

Recognizing that in any business where there is "friction," that is, inefficiencies in how business is done, there is an opportunity to rethink the process using e-business, Ingersoll-Rand turned to Innasite for an innovative solution in order to help their customers do business with them in an easier manner.





Benefits for IR Customers

www.irroads.com holds data on the complete list of IR Indian customers who have purchased machines from IR - Road construction Group. This includes basic customer information, details of machines bought by each customer and the complete spare part database of every machine in the road construction group.

The initial database includes a) 30 models b) 300 machines c) and nearly 30,000 spare parts as part of the spare part database.

Functional Summary

www.irroads.com is a b2b initiative from Ingersoll Rand (India) Limited for their with the primary objective of leveraging the power of the Internet to

a) Enable its existing customers to identify a spare part of a specific machine that they own for placing an order on the same online.

b) provide extensive information on the products and services available with the Road Construction division of Ingersoll Rand for potential customers

c) Build a online community of people by providing information on a variety of resources specific to the road construction group.

Objective is to enable every IR customer to be able to utilize the irroads.com web application to place an order on a spare part for a specific machine that they own.

Given the fact that there are nearly hundreds if not thousands of parts that make up a machine, an intuitive and user friendly way of identifying the specific spare part to enable the procurement of the same was required.

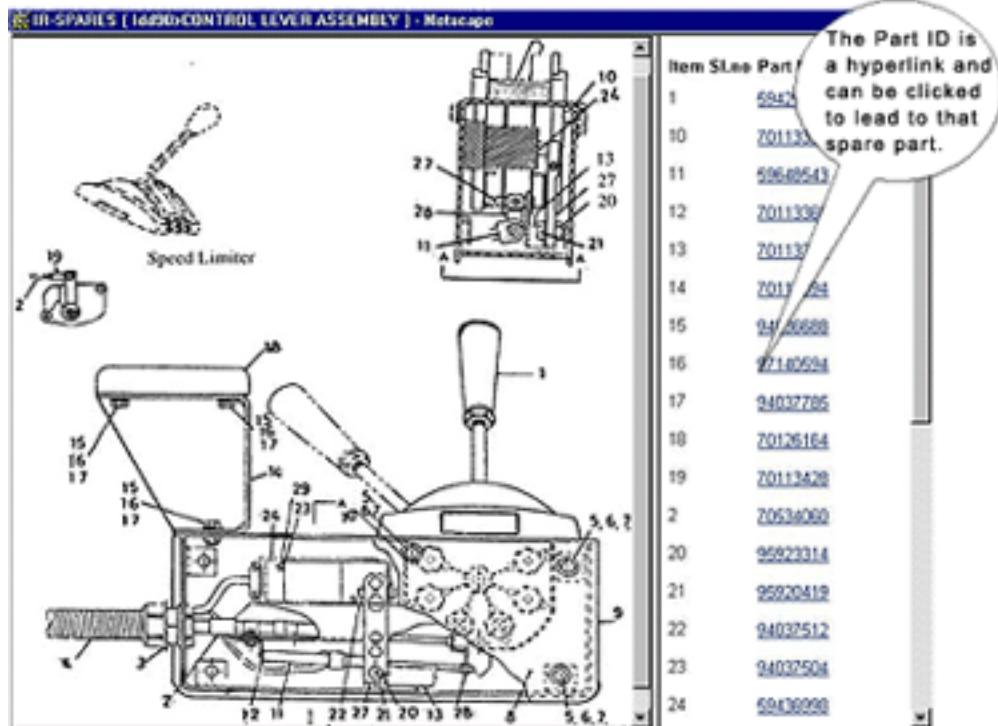
Innasite achieved the required functionality by enabling a IR customer to follow simple steps to identify a spare part for a specific machine and order the same:

- IR customer logs online with a user name and password assigned through the www.irroads.com portal.

- On successful login, the customer will be presented with a list of models he owns currently.

- On selecting a model, the machine serial numbers of all machines in that model will be displayed. (Machine serial number is a unique ID assigned to a machine during purchase)

- On selecting a machine serial number, the customer will be presented with a list of assemblies that make up that machine.





- For this point forwards, a visual diagram of the assembly will be displayed. The assembly drawing will also display a one - one mapping of each spare part that are a part of that assembly.

- The customer needs to simply select the desired spare part (displayed with part ID and description) to place an order on the same.

- If needed, the customer can order a complete assembly also.

- The above mentioned process is recursive. This means that each assembly may have sub assemblies and each sub assembly may in turn have more sub assemblies and so on.

- The application visually tracks the steps taken by the customer and enables the customer to jump to a specific point (already traversed) at any point in time.

- The application provides a Search by Part ID or Description to reach the spare part directly.

- Order fulfillment is done offline through a order form which will automatically carry the spare part the customer wants along with the necessary details in terms of shipping or any other instructions that the customer may have.

- The order form is stored in the database and is also routed via e-mail to IR sales department.

Integrated Web Based Content Management

The www.irroads.com portal features a complete integrated content management tool using which an authorized person from IR can update the Spares Database with new models, machines, spare parts or the customer information.

IR makes the content for each available in a EXCEL format that can be uploaded using the content management tool. The EXCEL data is then automatically converted, read, mapped and stored into the primary Spares Database.

Benefits for existing IR Customers and registered members (potential customers)

Registered members of the www.irroads.com portal have at their disposal an array of features to enable them to make decisions on purchase, obtain required information on road construction products and more. **Snapshots of these features are:**

- Product Service Showroom - This facility lists the complete set of road construction products from IR categorized according to use in terms

of application and intended task. For each product, information on features, technical specifications, pricing, financing and rental information are displayed online. Product visual is also made available.

- Dealer Locator - The complete IR India Dealer database is available on the www.irroads.com portal to help a registered member or IR customer to reach a specific dealer according to location (state, city). This feature is presented in a visual manner (through a clickable India Map) that a user can click to get a list of dealers in that region of India.

- Integrated Mail for the Dealer Locator - A mailing system is integrated with the dealer locator to enable a user to send enquiry to a specific dealer, a copy of which is automatically routed to the IR office also.

- Engineer's Corner - is a collection of information on road construction products from IR in easily downloadable PDF format.

Generic Community Features

The www.irroads.com portal is highly interactive and is designed to satisfy a wide range of audience and just the IR customers. To this extent a wide range of features such as yellow pages, classifieds, tenders, industry events, and industry-related news are made



· Training Center - This feature makes the complete event calendar of IR training available online. A user can select a training of his choice and send a registration form for the same online.

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Technical Summary

The development team at Innasite designed a highly scalable model for the development of the IR Roads portal. The complete web application was built using the Microsoft Solutions Framework (MSF) with Oracle 8i as the back end database for the application.

The development took into account the huge volume of data in the database and also the potential increase of this volume in the future. The architecture was designed using a three - tier architecture by effectively utilizing the power of the Oracle database in conjunction with the highly scalable ADO database access model of MSF.

The development was executed in a very streamlined manner by effectively understanding the functional requirements of the portal with due coordination from the IR representatives.

The complete web application is content driven and supports a full fledged content management tool for each of the features in the portal enabling a IR representative to make changes in content as and when desired through the portal itself.

Technical Snapshot

Operating System

Windows NT

Middleware Scripting

ASP & VB script

Business Logic encapsulation

ADO & Stored Procedures & BLOB

Database

Oracle 8I

Design

HTML, DHTML , Java script