

# Accelerating Supply Chain Efficiency



Xoriant helps a global supply chain product suite deliver the next-generation module to engage with SME markets.

## Background

Our client is a US headquartered global SCM software vendor with clients across the world. The company delivers reliable, scalable technology solutions that allow a manufacturing or a retailing company to improve the performance of its supply chain and increase margins. Our client's solutions have enabled seamless connectivity with the existing disparate enterprise applications in the customer's IT environments. This has helped its customers to easily connect with their trading partners, thus significantly reducing the transaction costs.

In keeping with their growth plans, our client now wanted to expand the product functionality to enable mid-sized companies create a highly efficient and affordable trading infrastructure. Our client wanted to achieve the right functionality, flexibility, features, usability and performance features in the product for this mid-market despite the lowering of the price point for this market as compared with the large enterprise market.

## Client Requirements

Envisaging this engagement as an opportunity for innovation, the client sought to build a newer version of the product-not simply a duplicate of the existing product. The new product would offer substantial improvements in systems architecture, features, functionality, usability scalability and performance, and quality that encompassed global supportability.

High value assembling-trading companies-the initial target market for the client-typically deal with a large number and volumes of input component parts that result in moderate output volumes of very high value products. This requires the supply chain software to have the right data structure and data organization to be able to achieve the data accuracy, data granularity and acceptable performance.

Our client was looking for a development partner who had deep and broad experience in the full software engineering lifecycle of complex enterprise class applications products. In addition, our client felt that the partner should have the experience and available resources, who are highly proficient in commercially available relational databases, specifically in terms of data structure design, performance tuning and optimization. The partner was also required to have experience in Java/J2EE stack as well as user interface using Java Swing. Expertise in systems and database performance optimization was a key criterion.

As an ISV traditionally catering to large multinational and government organizations, our client required the product to be developed using the best practices, methodologies and ISO compliant standards and practices.

### **Our Solution**

The product architects from the client and from Xoriant proposed a Java/J2EE Swing architecture to ensure scalability, and ease of development and maintenance. The new product development by Xoriant included integrating functions of warehousing, inventory, shipment and forecasting on top of the existing SCM functionality. In addition, we also incorporated functionalities of advanced network administration, workflow management and rules engine management.

### **Product Capabilities and Features**

The SCM client's customers-in various forms of feedback-helped build the right requirements for a new product. The new product was expected to deliver:

- Reduced order-to-delivery and order-to-cash cycles
- Improved plant utilization

- Faster manufacturing response to changes in demand
- Minimized inventory levels
- Reduced transportation costs
- Reduced warehousing costs
- Reduced transaction costs

The current version of the product lacked some key features, notably:

- Authentication capabilities: The existing system did not have the capability to authenticate user credentials, resulting in security concerns
- User-based alerts: Notifications to users were manual and delayed, resulting in extra processing time for an order
- Document workflow: Business documents like Purchase Order, Sales Order were managed manually, resulting in delays and errors.
- Non-customizable front end: The administrators had no flexibility to customize the front end based on department needs
- Scalability: The existing system had limited scalability

### **Xoriant Approach and Client benefits**

Xoriant adopted a gradual product build-out approach, since the product was quite complex both technically and functionally.

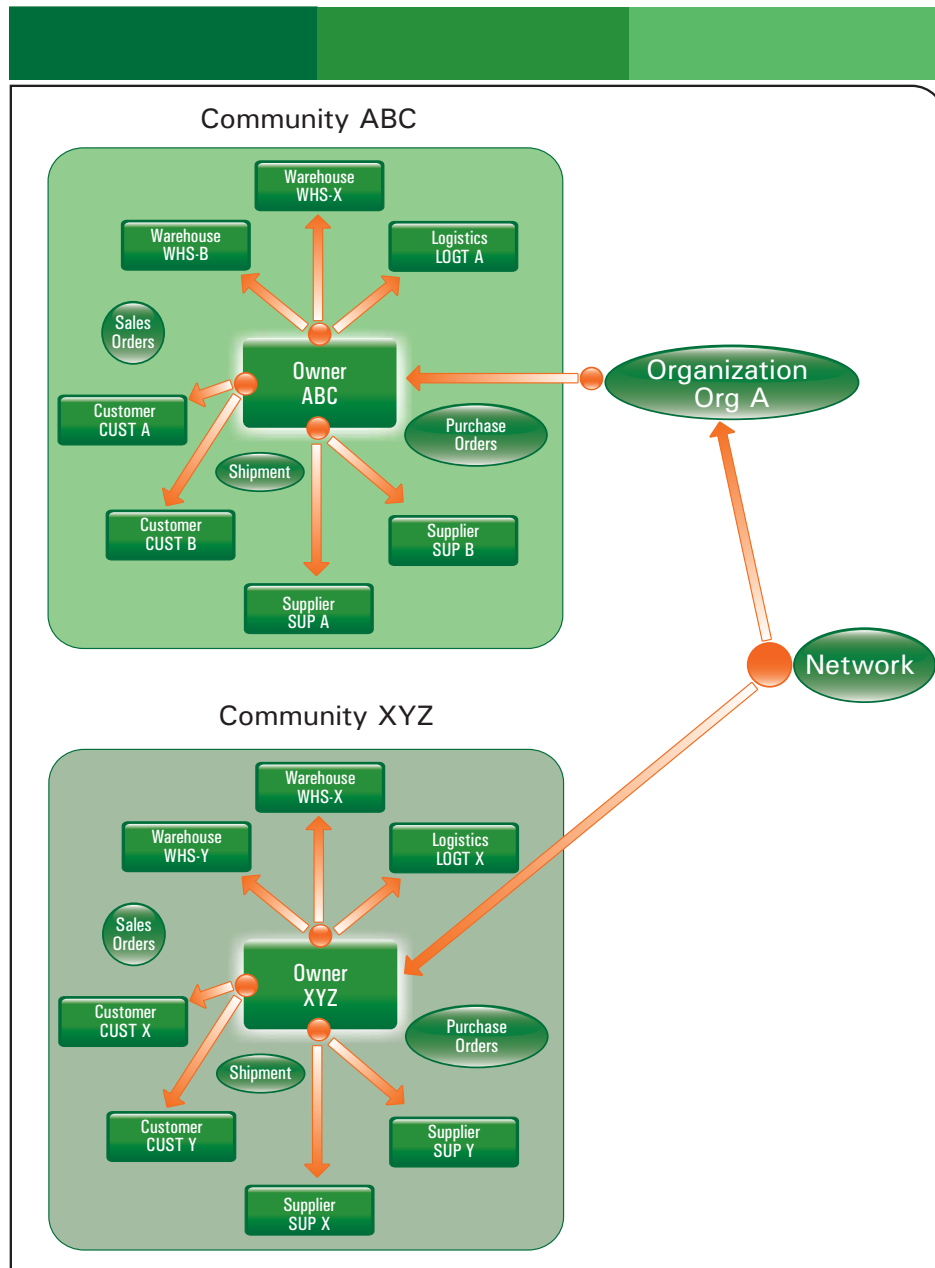
- Xoriant's team of architects spent significant time at the client site to understand and appreciate the nuances of the current product. This helped in handling the development independently from India.
- Xoriant and the client teams clearly bifurcated the product specification and architecture as one part, and the design, development and testing as a different part. Xoriant's designers became an integral part of the client product team,

and thus could clearly communicate the product architecture with the Xoriant development team. Very soon, the client team was comfortable with the Xoriant on-site team and its handling the offshore development teams, and could focus on the advances/features to be added to the product.

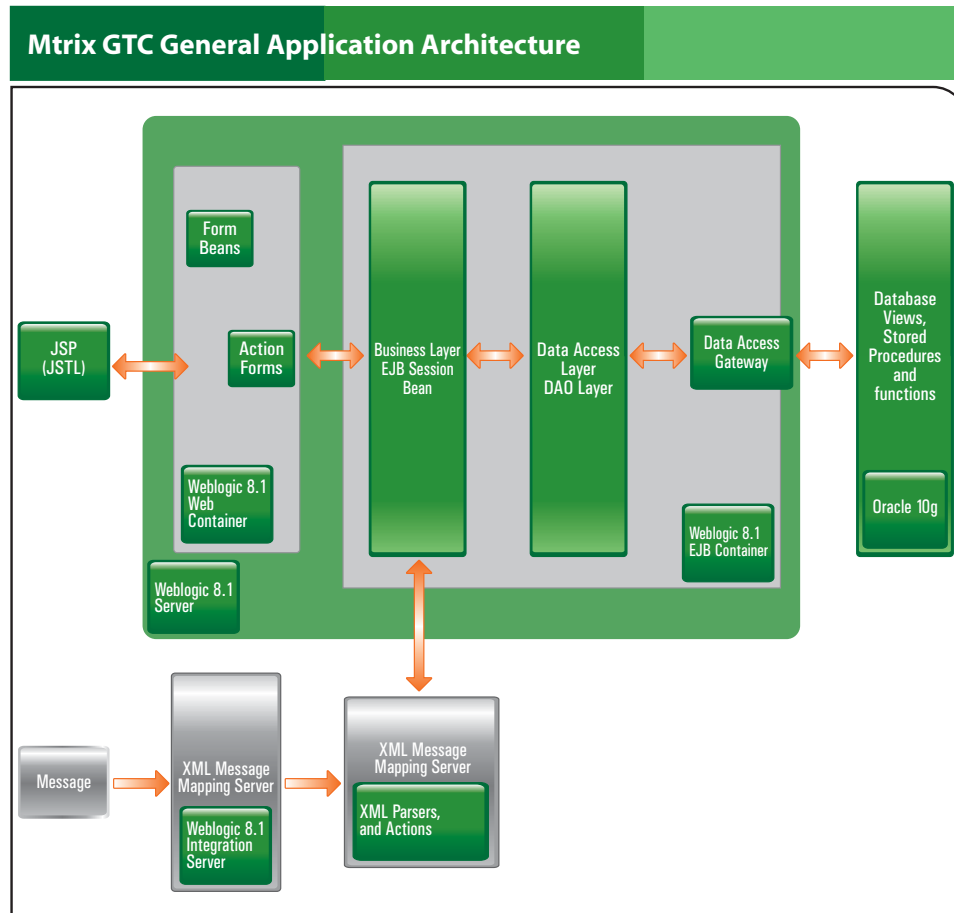
- Xoriant designers developed the rules engine that controlled the flow of the system and the core module of notification using several frameworks and tag libraries developed from scratch. Asynchronous notification messages were implemented using JMS.
- For user authentication, user-driven customizable modules were developed.
- The framework encompassed messaging, distributed objects and GUI components. JSP tag-libraries were stored centrally and could be utilized without the need to download and modify them every time.
- A collaboration framework managed the workflow for any business document (Purchase Order, Sales Order etc)
- Xoriant engineers chose Oracle over Microsoft SQL Server after analyzing the needs of referential integrity, stored procedures/ triggers, scalability and performance.
- Stored procedures and queries were optimized and the performance was enhanced by over 60%.
- The Xoriant team was able to work using client's existing development approach to begin with, and then bring in the components of formal process slowly within client's comfort zone, causing minimum impact to product schedules. This resulted in high impact to quality and maintainability of the final product.
- With good resource planning we could increase the team size in a phased manner. This brought down the total cost of the project.

- Quality Control and Quality Assurance were handled by experienced members from Xoriant's centre of excellence for Quality, thereby reducing the testing cycle and increasing the product quality

Business flow diagram



## Architecture/Data flow diagram



### Some of the highlights of the architecture were

1. A robust, scalable framework with a rules engine that allows manufacturing units to send/receive messages from diverse entities-owners, suppliers, warehouses, and so on
2. An MVC architecture that uses a flexible Tiles framework for ease of development
3. Home grown API's for easy interface to SAP and Baan

**Client Benefits:**

- The client was able to meet the release date and announced capabilities of the product in a new market segment.
- There was significant level of interest from new and existing customers, given the robust design and flexibility
- Xoriant's capabilities of customization and implementation at new customer sites offered our client the flexibility of quicker sale cycles and potentially higher revenue dollars per sale