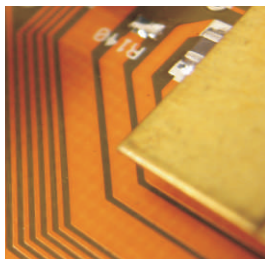


INDUSTRY
**HI-TECH
MANUFACTURING**

**Redefining and Re-engineering
the Material Management
System**



THE BENEFITS

- Extensive, real time insight into key procurement indicators
- Enhanced data processing speed of 39 messages per second
- Real time data available within a few seconds
- Streamlined collaboration through the supply chain by ensuring up-to-date information on lot movement
- Improved capability to determine final output timelines due to the ability to obtain demand and supply information
- Superior customer service levels with increased control over final output
- Enabled end-to-end analysis by combining and examining data from supply chain and other departments

L&T INFOTECH VALUE ADDS

- Developed customized ETL Integration Framework for Real time message processing and bulk data processing for guaranteed data delivery from source to target

WHY L&T INFOTECH?

- Several successful engagements with the client
- Extensive experience and knowledge of data warehousing

L&T Infotech provided its expertise in developing a data warehouse to streamline the supply chain operations that enhanced Actionable BI

THE CLIENT

A leading global designer and manufacturer of embedded semiconductors, the client's service portfolio caters to the automotive, consumer, industrial and networking markets worldwide.

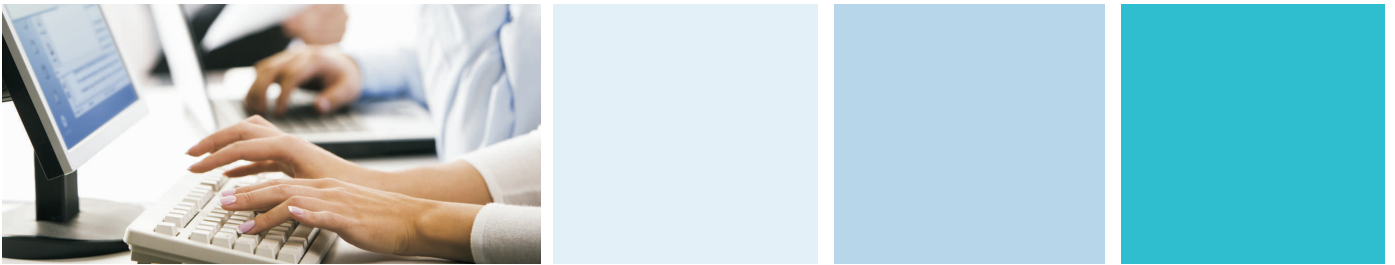
Based in Austin, Texas, and with operations in more than 20 countries, the company is in the league of the top Fortune 500 companies and among the Worldwide Top 20 Semiconductor Sales Leaders.

THE CHALLENGE

Today, manufacturers in semiconductor industry are witnessing greater consumption in the field of computing, digital media, mobile devices, automotive products and other upcoming technologies in relation to the increasing customer demand. The growing production and consumption of electronics across industries and geographies is driving the semiconductor manufacturers to pace up with the rapid innovation and shrinking product lifecycles to ensure smooth supply chain operations. Given the complexities and the wide array of supply chain involved in manufacturing, companies need to trace serial numbers to the smallest component to better comply with regulations and control cost factors.

With operations worldwide, the client was facing issues with performance and real-time view of critical data which was key to business decision making. The client data warehouse was outdated with just 500 GB oracle database with 1000+ ETL jobs and more than 400 standard reports catering to more than 4000 end users.

Since the volume of reports and ETL was high there were major performance issues and critical reports were not delivered on time for the analysis. The old application system was not scalable and was not able to add hardware and boost performance. All this was preventing the client to view data in time to decide for the next manufacturing stage. The client in such a complex environment was facing concerns related to a single view of material data and the movement. Additionally with limited time and resources, tracking the progress of each component in the supply chain had become complicated, which was also increasing overhead costs. And with having multiple data legacy systems in place, the client was losing out on tracking of essential data related to material movement, location and manufacturing stage of each lot. This crucial information was important to the client to forecast future business plans, determine timelines for the delivery of the final output, analyze revenues and reduce costs for warehousing, transportation and order fulfilment for better business decisions making. The client needed a robust yet a simple solution to integrate and provide real-time manufacturing data on the lot movement to further help drive success in today's complicated supply chains.



THE SOLUTION

L&T Infotech's expertise in developing and maintaining data warehousing solutions was crucial in understanding the client requirements. Furthermore, L&T Infotech had previously worked on several engagements with the client and had a good insight into the client's business processes, making it an ideal partner.

L&T Infotech implemented a two-phase solution approach over a period of two years. The first phase was the conception phase and required the creation of a common repository for supply chain data, spreading across diverse IT landscapes and capable of real time processing. Data from multiple source systems were transferred onto the middleware bus using TIBCO technology and then sent to multiple queues. An existing ETL (extract, transform and load) tool would accordingly extract the data from the queues to populate the data warehouse. This data warehouse in turn hosted a master database which acted as a single source of manufacturing and operating data that was updated and maintained in real time.

The second phase involved replacing the outdated application system to enable a seamless flow of data from the master database to downstream applications or target systems. Thus, by providing a central data repository, other client departments such as Quality, Sales and Manufacturing could also utilize the lot information to make informed decisions. L&T Infotech further developed in house extraction tools that could read the source data and load it onto the main framework. With this new tool, a single framework was created to upload data from the master database to downstream applications whereas individual scripts were used previously to extract data.

A crucial part of the solution entailed real time data and backup availability even during downtime due to system error or failure. The new framework ensured that records queued up during downtime were cleared quickly, resulting in smooth, uninterrupted data flow. Logistics became a much simpler process for the client, with shipment information available in real time and with the ability to drill down to specific manufacturing lot data.

Throughout this engagement L&T Infotech utilized existing tools to its maximum potential and then developed new ones when these were found inadequate in order to maximize efficiency and minimize cost. It involved around 20 terabytes of data, a large number of reports and dynamic dashboards. This was the first large scale complex implementation in the semiconductor industry.

L&T Infotech is a 100% subsidiary of the US\$ 11.7 billion plus, engineering, manufacturing & financial services organization with global operations, Larsen & Toubro. We offer comprehensive, end-to-end IT services & solutions to leading companies across the globe. We provide the winning edge to our clients by leveraging our Business-to-IT Connect and Deeply Committed People.

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