Fiorano®
Enabling change at the speed of thought

Fiorano SOA™ Platform

Company	Industry	Business Challenges	Fiorano Solution
POSCO	Manufacturing	• Integration of disparate systems • Central GUI based Management • Adaptability to meet future needs • Remote monitoring and troubleshooting • Error Notifications	• Handles legacy systems integration with ease • Graphical Tools for Monitoring and Event Handling Capabilities • Highly adaptable and scalable • Allows remote monitoring and run time debugging • Graphical Tools to investigate and take corrective action.
World's second largest bank	Banking	• Transport-vendor dependency over multiple transport systems	• Developed a miniature platform to nullify all vendor specific dependencies.
Justice Department of Tulare County	e-governance	• Transformations • Ease of use	• Powerful transformation capabilities • Simple drag-drop-configuration from a rich graphics based user interface
EasyPay	Finance	• Faster message routing • remote management	• Based on fastest JMS server for messaging - Fiorano MQ • Remote monitoring and management from a centralized management console
Largest non-bank Futures Commission Merchant (FCM)	Finance	• Standards-based messaging system • Scalability issues • Nonflexible Architecture	• Embeds the world's first JMS server - Fiorano MQ • Ensure 100% message delivery and scalability • Brought in modularity to the solutions

POSCO

Company Overview & Problem Analysis

One of the largest implementations of Fiorano SOA Platform is at POSCO; the steel giant established in 1968, POSCO is a Global 500 company. POSCO has an annual crude steel production capacity of 28 million tons and annual revenues of US$ 10.6 Bn.

- Inefficient Manufacturing Processes
- Islands of Information Systems
- Integration of disparate systems ranging from Legacy to Best-of-breed new application
- Automation of business process spanning Geographical Boundaries and a Geographically Spread InfrastructureError Notifications
- Simplify management of distributed applications by having a single comprehensive view of the entire process manageable from a central location.
- A new system infrastructure was required to exchange data in real-time from one geographical location to another across firewalls, WANs and over the Internet and in a reliable and secure manner.
- Open system architecture to be able to realize full benefits of new technologies and ensure adaptability to future needs.
- System Uptime Maintenance at each of its sites, manual monitoring all Process Computers for faults. Average time between problem occurrence and its detection was quite high (approximately 4 hours).
- Remote monitoring and troubleshooting Applications in Real Time.
- No Disaster Recovery Process
- Error Notifications

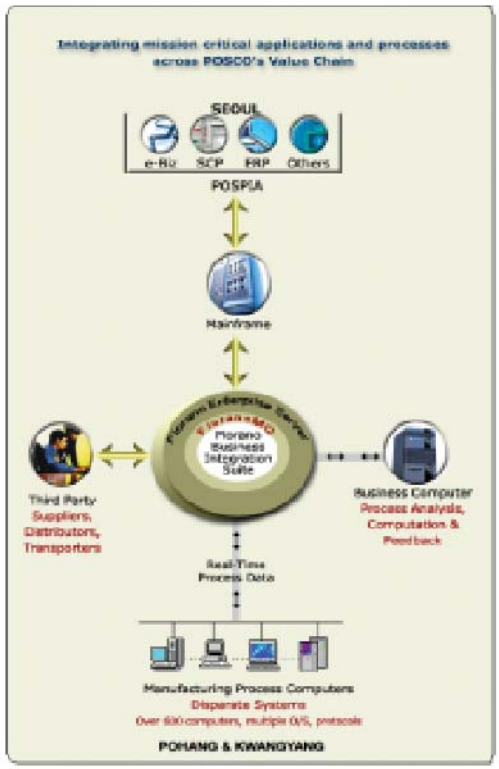
The Solution

Fiorano solution handles Legacy Systems Integration with ease - Integration of these legacy systems with the new PC's removed the biggest bottleneck that existing infrastructure products (IBM MQSeries, WebSphere Integrator) were not able to provide.

Fiorano provided solution for real time processes analysis - The business computer running Oracle 9i Application Server was integrated with the various process computers running on disparate platforms and operating systems (including Windows, Solaris, Linux and other Legacy platforms like VAX/ VMS). This integration enabled process data analysis and feedback in real time.

Management and Monitoring Capabilities - Fiorano Business Integration solution also provided POSCO with a comprehensive set of Management and Monitoring Tools.

POSCO's Business and Technical Analysts can now quickly compose, develop, test and deploy Business Processes. In addition, it's Monitoring and Event Handling Capabilities provided POSCO with Graphical Tools to investigate the origin of the problem and then take corrective action.



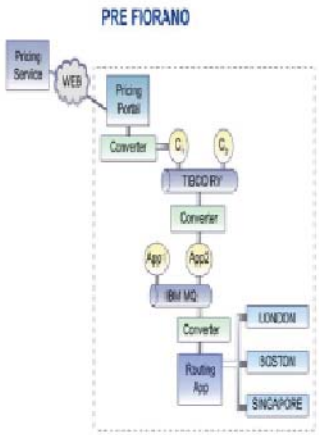
Data Mapping and Transformation - The Fiorano Mapper provides multiple File (File Reader, File Writer Adapters) and Database Adapters (Oracle, DB2, SQL Server etc.) to handle a wide range of data and file formats.

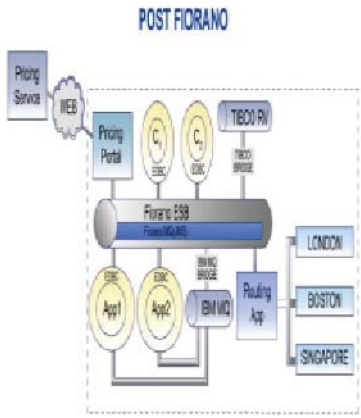
Coarse Grained Component Model extends Component Re-usability - The use of Fiorano Adapters and the Fiorano Mapper helped POSCO save precious time and resources, which would otherwise be required for programming these different complex Business Rules and validations for automating the Manufacturing Business Processes

World's second largest bank

Company Overview & Problem Analysis

With headquarters in London and a network comprising of approximately 10,000 offices in 82 countries across the world, the company reviewed in this case is one of the largest banks in the world. The major problems that bank was facing were - Transport-vendor dependency over multiple transport systems, including MQSeries, Tibco and others, unreliable Hosting Environment with low performance and without high availability, Componentization of Business logic for reusability, Black-box Integration of existing applications developed by contract programmers.





The Solution

The bank developed a miniature platform called LASER using Fiorano SOA platform directly for component development. LASER acts as a bridge on which the bank will convert all its existing applications into components using the bank APIs. The LASER platform will in turn auto-generate Fiorano components from the LASER components. More than anything LASER is one of the tools relied on to promote the event driven component architecture of Fiorano within the bank infrastructure.

Justice Department of Tulare County

Company Overview & Problem Analysis

The Justice Department of Tulare County was faced with the need to streamline the exchange of information and in turn expedite their justice machinery. They faced serious limitations in achieving these goals due to a lack of a middleware platform. Considerable time was required for information to flow across the various departments that comprise the overall system. This resulted in a slow, antiquated system where every legal case or data file had to step sequentially through several departments before finally making its way through the entire system. The primary cause for all pain points was the absence of a middleware component that could govern the data transfer aspects.

The Solution

Fiorano SOA was chosen as the best middleware by Tulare County Justice Department. Fiorano introduced a Service Oriented Architecture. Figure - 1 shows how various divisions of the Justice Department share data using the Fiorano SOA platform. The Enterprise Service Bus (ESB) provides the required messaging backbone used by their various applications to originate information which is then published as messages on the service bus. These messages are transformed, if required, and routed to the appropriate target destination, response messages or notifications from the receiving system are then routed back to the application that made the original request assuring receipt. These highly efficient workflows are achieved via simple drag-drop-configuration of pre-built components. Fiorano SOA includes a rich graphics based user interface that allows the creation, testing, deployment and management of workflows.

EasyPay

Company Overview & Problem Analysis

EasyPay had a mix and match of batch job and real time applications running on different systems. Several in-house Java-based applications rendered value added services but the over all data environment was inflexible, creating complex management issues. EasyPay also discovered that customers using direct channels such as Internet and Telephone expected a faster response. EasyPay's current message routing solution slowed down the message flow or retained confirmation messages for store and forward longer than required.

The Solution

Fiorano introduced a Service Oriented Architecture (SOA). The illustration below shows how various servers at EasyPay provide services to clients. The Enterprise Service Bus (ESB) provides a messaging backbone, and client devices such as point of sale (POS) terminals, web browser clients and mobile (GSM) devices originate requests that are published as messages on the ESB. These messages are translated, if necessary, and routed to the EFT Switch or appropriate value added service (VAS), and response messages from the back-end services are routed back to the clients that made the requests. Transaction data is sent to the Recon service for reconciliation while system problems generate events to the Escalation service for operator intervention. Systems that need to send messages such as email or FAX use the Notification service. A FAX device is shown as an example of a recipient. Data files are transferred by ConnectDirect as a result of messages received via the ESB. All of this activity can now be monitored and managed conveniently from a centralized management console

Largest non-bank Futures Commission Merchant (FCM)

Company Overview & Problem Analysis

The Company is the largest non-bank Futures Commission Merchant (FCM) in the world that specializes solely in spot forex. It services over 50,000 retail clients and over 400 institutional clients from more than 80 countries, making its trading volume virtually unrivaled in the online currency market.

The forex Company offers traders access to the global currency market and pioneered the process of dealing directly from live, streaming two-way prices, enabling traders to take advantage of the liquidity of the currency market. With over 50,000 clients with an average monthly trading volume that exceeded $70 billion, the Company needed not only the right technology but one that could be implemented quickly and efficiently. In order to achieve this, it had to bring in modularity to its solutions and ensure 100% message delivery and scalability, all at a reduced cost.

Scalability issues: The Company's client base has been growing rapidly. In order to support an increased number of simultaneously connected users, it needed to add one or more instances of Middleware servers with the ability to handle high volume messaging at large scale. It was required that the backend system should have enough resources to handle a large number of Middleware "black boxes".

Nonflexible Architecture: Current messaging architecture did not permit building of next generation business applications founded on a component-based architecture.

Unreliable messaging during remote connectivity: With clients worldwide, a major concern was users in areas where internet connectivity is less reliable, and where users experience greater latency. The Company had to address this issue by setting up proxy servers in these geographic regions to minimize any latency and insure reliable message delivery.

Proprietary messaging frameworks: These are generally not accepted by larger financial institutions. Therefore, in order to extend its customer base and market leadership, there was a need to shift to a standards-based messaging system.

The Solution

The Fiorano ESB was incorporated to bring in modularity to the solutions and ensure 100% message delivery and scalability. The message-based ESB has helped the Company ensure that business messages flow with 100% reliability. At the same time, this messaging system has helped shield the communication level details from the business application module. Using this concept, an independent, linearly scalable, peer-to-peer message transport solution was built.

Fiorano ESB Service is able to communicate with the back-end system by wrapping the server side runtime library of the Company's business application. At the same time, the service is able to communicate with other services across the network using peer-to-peer JMS messaging supported by the Fiorano Peer Server (which embeds the world's fastest JMS server: Fiorano MQ). Running the same service on top of a Fiorano Peer Server in contrast to a raw JMS server provides innumerable benefits, which include remote deployment, monitoring, and debugging.

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