Integration of ArcGIS with Enterprise Application

The biggest challenge before the technology team is to integrated heterogeneous system and applications to implement an integrated GIS Application with Business Application. MSD’s infrastructure includes hardware from IBM, Dell and HP; Operating Systems supported are AIX, Linux and Windows; Application portfolio includes Oracle EBS, Maximo, ArcGIS Server, LIMS, PIMS and over 30 applications. These applications are either .NET or Java. The challenge is to implement and integrated so that the data and applications work seamlessly with over 99% uptime.

In 2006 Metropolitan St Louis Sewer District (MSD), St Louis, MO evaluated and decided to migrate all its GIS and Asset information to ArcGIS 9.1 platform. MSD partnered with ESRI to identify its core business areas that can be integrated with the GIS system. Areas identified for integration were Environmental Compliance, Billing & Collection, Asset Management (Maximo 7.1) and Financial System (Oracle EBS 12.1.3).

Areas identified for integration with GIS were
- Engineering (Planning)
- Operations
- Billing/Customer Services
- Environmental Compliance
- Purchasing
- Risk Management

In 2010 we were able to successfully integrate GIS asset into Oracle EBS 12.1.3. This involved extraction of GIS asset information by project and transfer to Oracle EBS through its interface. This helped MSD in automating the process, thus reducing the chance of error.

This interface was implemented using PL/SQL for data extraction of assets for projects from GIS database and loading asset through Oracle EBS interface to maintain data integrity. This is a scheduled program and is executable on demand.
Again in 2011 MSD implemented Maximo 7.1 with integration to Arcgis Server 9.2. This enabled MSD to create service requests directly on GIS Assets thus enabling the Operations to effectively manage their service calls.

Data related to GIS assets were duplicated as assets within the Maximo application and Maximo called ArcGIS webs services to identify assets related to service calls.

River is another web based application developed in .net for operations and engineering to view/locates GIS maps by service area, watersheds and city wards.

This front end application was developed in .net using ArcGIS web services. Plans are there to replace the front end by Adobe Flex to implement rich interface.

In our heterogeneous environment we indentified that for successful implementation the following guidelines must be adhered to

1. Use of Web Services
2. Single source of data
3. Avoid tightly coupled applications
4. Use of technology in using rich interface
5. Develop web based application rather than thick client applications

MSD plans to integrate other strategic business areas with GIS in near future to maximize its investment in Technology.