BIOGRAPHICAL INFORMATION

Susan Romeo-Gilbert, BSc., MSc (G.G.I.S)
Manager, GIS Practice
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Specific Responsibilities

Joined ABS-U in 2001, after 5 years with Oracle Corporation. Is the GIS Practice Manager at Accenture Business Services for Utilities (formerly Westech), with over 15 years experience in the IT Industry, including in a variety of industrial sectors such as Utilities, Energy, Telecommunications and Finance, Banking and Trade. Currently manages a team of 11 geospatial consultants who are engaged in the development of spatial applications for Enterprise GIS' for large Utilities and Government. Issues on data quality, validation, metadata management, data consolidation and integration, data sources, data collection, topological interaction, reporting, application portability and data organization are tackled daily by this team.

Also holds responsibility for business development, staff recruitment, performance reviews, personal development and career planning. Conduct courses and continuously coach staff on Consulting Foundation Skills. Responsibility also included Resource Management of some 40 staff within the Geospatial Group. Served as one of four (4) company resource managers, for the placement of all staff on projects, as well as for the management and monitoring of staff utilization.

Past Experience

- Has taken the technical management and lead role for several, geospatial, financial and data warehousing projects. I have also defined and developed strategic spatial enterprise technical architectures and conducted spatial technical quality reviews and audits. As a technical solutions architect I have been responsible for executing design and development, which runs from high level conceptual design for multi-tier infrastructure; network connectivity, with its inherent authentication, security, load balancing, firewall and other criteria, to physical database design, build and post-build performance tuning.
- Managed an initiative with the transmission division of a US power utility for the development of a strategy and project charter for the implementation of their GENRS Smallworld application. She has facilitated workshops and documented business processes for the Transmission Line Engineering, Transmission Line Services, Asset Management and Forestry Management and Property Lines of business.
- Developed a Corporate Metadata Strategy for a Canadian provincial government Ministry. Her role in this project was that of Technical Architect/Spatial Data

Advisor/Work Session Facilitator and she was responsible for: Providing the technical view of meta-content requirements and issues building upon previous work; Examining compliance with international spatial meta-content standards across the Ministry's branches; Examining existing spatial data holdings in terms of metadata management approach; Participated in the Metadata Tool Evaluation and recommendations. This project involved working sessions to identify technical and business requirements, a review of existing systems and architectures, and providing recommendations. The metadata strategy included technical architecture alternatives and a high level logical data model of core metadata elements. The logical model was based on accepted international metadata standards.

- Fulfilled the roles of Spatial Advisor and Technical Architect for a government Salmon Escapement Spatial project. The key project objective was to outline technical options and recommended approaches to meets System Architecture standards and objectives.
- Participated in a Spatial Data Management review of a government agency's spatial data holdings. Recommended an infrastructure design which considered multiple applications, current Operating System, Network and Database environments were examined and incorporated, support for both internal and external clients, a consistent and reliable way to interface to diverse external systems; increased application availability, system performance, and legacy system support.
- Defined and developed strategic enterprise technical architectures.
- Performed a spatial systems audit and operations readiness assessment of the existing technical architecture and database design for a large spatial data warehouse which held a provincial land registration system.

Educational Information

B.Sc. – Computer Science, University of the West Indies
P.G. Cert. – Principles and Practice of Management, University of the West Indies
M.Sc. Geographic and Geodetic Information Systems (GGIS), University College London

Professional Memberships

GITA

ENTERPRISE SPATIAL INFRASTRUCTURE

A FRAMEWORK
FOR
DESIGN AND DEPLOYMENT

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ABSTRACT

Traditional Geospatial Information Systems has now entered the age of the Internet. Thus the supporting infrastructure needs to embrace the 3+-tier architecture suitable for enterprise data management. To facilitate infrastructure transitioning and application migrations, one must use a structured approach to the design, implementation and deployment of a common infrastructure platform for Enterprise Spatial Systems. Structured methods and techniques now have to be in place for Scope and Assessment; Analysis and Design; Implementation and Deployment, of this infrastructure.

BACKGROUND

Spatial Technology is widely utilized by many organizations to support various applications including asset management, emergency management, managing natural resources, assessing taxes, deploying troops, and designing entire highway systems. Over the past 30 years, thousands of terabytes of spatial data have been generated and stockpiled, all managed using specialized database systems. While spatial data and related technology is applicable to hundreds of commercial applications, businesses are only now, within the past 2 years or so, realizing the full benefits of this technology. The need to build enterprise spatial systems and to spatially enable the existing enterprise data, is increasingly becoming an important practice in organizations. There is now the need for the use of methods, techniques and frameworks for building an enterprise infrastructure to support these very large enterprise-wide DBMS as we take them out of the back-office into the new age of the inter-, extra- and intra-net.

Spatial Information has become an integral part of the IT infrastructure at all levels of industry. Having traditional GIS enter the age of the Internet with its inherent very thin client, spatial information systems now need to move away from the tradition fat client – 2-tier architecture and

embrace the 3-tier architecture suitable for enterprise data management. There is now the need to introduce proven architectures for spatial technologies operating in this environment. How do we go about doing this? By the introduction of methods and techniques to ensure the creation of a solid infrastructure foundation.

INTRODUCTION

A common infrastructure platform for Enterprise Spatial Systems will therefore involve the use of methods and techniques for Scope and Assessment; Analysis and Design and Implementation and Deployment. When building an Enterprise Spatial System, a structured, methodological approach will facilitate infrastructure transition and application migrations from phase to phase. It will also provide a consistent and reliable way to interface to diverse external systems; increased application availability and performance (from client tier to middle tier and middle tier to database tier); reduction in points of failure; load balancing; scalability; security; legacy system support; support for spatial decision support systems (SDSS) and last but not least, support for both internal and external clients (extranet (B2B) and Internet (B2C). Readers will gain an understanding of the need to apply structured methods and techniques to designing and deploying enterprise spatial information infrastructure.

Infrastructure solutions for spatial information, should include the products, partners, processes, people and services to make them all work together. The benefits of bringing spatial information into the open systems world are enormous:

- Distributed, multi-user access
- Portable performance
- Data integrity
- Back-up and recovery
- Security access control
- Use of structured query language(s).

Companies will be able to share spatial databases, internally and externally, minimizing costs and fostering a generation of repeatable solutions. Trends over the last few years have seen spatial information coming out of the back- office to the place where enterprises now need:

- to store and retrieve this data efficiently and make it accessible to an enterprise audience
- to distribute data across multiple databases and hardware platforms
- to maintain data integrity and security
- to integrate and share data

Most companies are familiar with methods for application design, or the application life cycle. Very little attention is paid to the life cycle design for the infrastructure, which supports these applications. The building of a solid foundation, ensures the success of spatial applications as we take them into the web and wireless arena. The use of structured methods and techniques, if followed, will ensure the success of an enterprise spatial system. To design and build an enterprise-wide infrastructure for spatial systems, considerations would include High

Availability, Network Build and Access, Integration, Performance, Security and Systems Management.

METHODS AND FRAMEWORKS OVERVIEW

One of the major components of a successful enterprise spatial implementation, is the creation of the necessary technical environments(s) required. It will require a full technical infrastructure evaluation to be conducted. In order to do this successfully, the following key activities must be performed.

TECHNICAL SCOPE AND ASSESSMENT

A current platform(s), as well as an environment analysis, will need to be undertaken to define requirements.

- ⇒ Understand Business Goals and Drivers
- ⇒ Understand Current Configurations - Baseline architectures
- ⇒ Gather/Specify Requirements
- ⇒ Bound architecture with the scope and assessment
- ⇒ Develop a Conceptual Architecture
- ⇒ Findings and Recommendations

ANALYSIS AND DESIGN

This involves determining the technical infrastructure requirements. Considerations for this include:

- ⇒ Document user requirements for technical infrastructure (e.g. availability, backup/recovery) including estimated data volume and output management requirements
- ⇒ Identify network – LAN / file server Identify related facilities and support (e.g. network support services)
- ⇒ Identify application server(s) requirements
- ⇒ Identify connectivity software – between application & workstation; between application server and database server
- ⇒ Identify workstation(s) requirements
- ⇒ Identify licensing requirements

Once this is completed, there will be the follow-on activity to analyze and produce several potential solutions

- ⇒ Perform risk Assessment
- ⇒ Generate Alternative Approaches
- ⇒ Refine Detailed Requirements
- ⇒ Create High-Level Design

Provide Final Design and Implementation Guidelines

- ⇒ Develop Detailed Design with Bill of Materials
- ⇒ Deliver an Implementation Plan

IMPLEMENTATION AND DEPLOYMENT

Describes and provides selection guidelines for each solution scenario included in the process, where a solution scenario is a specific approach to a process, culminating in the final enterprise spatial technical environment being ready for production. This could take the form of High Availability Solution scenarios which could include the use of Parallel servers, Replication, Standby databases, off-compound backup procedures, etc.

This phase will see the environment installation and configuration, any customizations and/or integration of functionality, which may be necessary across the 3 tiers, with final test and acceptance of the final technical infrastructure configuration.

CONCLUSION

The development of a robust technical architecture to support enterprise spatial systems is a work in progress, that anyone delivering or analyzing Enterprise Spatial Systems Infrastructure Architecture can and should participate in. It initiates the infrastructure upon which an enterprise will build and support application development and deployment, throughout the Enterprise. It details the system architecture – processes, back office databases, application server tier, client tier and all required hardware and software connectivity, for a seamless transition for the spatial user. It facilitates the gamut, from a simple user request via the web, to a meaningful response to that user. It therefore provides a solid foundation that is critical to any successful enterprise spatial implementation.