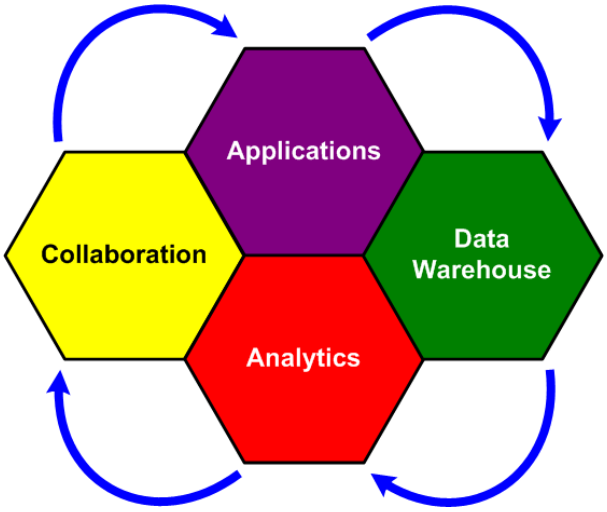
Metadata Services for Notes

Bringing Notes Applications into the Enterprise World



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Metadata Services for Notes

Metadata services are the critical foundation for data accessibility and integration for hybrid applications. While the Lotus Notes platform sets the standard for organizational collaboration, it does not include metadata services. The result is that Notes applications have been difficult to integrate with enterprise data. Now there is a complete package of metadata services for Notes which makes it quick and easy to bring Notes applications together with enterprise services like business intelligence (BI) and data warehouse. The result is a whole new set of integrated functionality which combines the best of the collaboration and analytics worlds. We call this hybrid capability Collaborative BI.

What is Metadata?

Metadata is best defined as data that serves to provide context or additional information about other data. A simple example of metadata is the card catalog that describes the books in a library. The metadata that describes a book includes important facts about the book (title, author, publisher, etc.), a high level summary of the book, and information about where to find the book. The metadata describes the data (in this case a book), but exists apart from the data.

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In the field of information management, metadata is used to describe data structures and content. Metadata definitions describe the technical data structures (databases, tables, columns, etc.), the use of the data (how technical elements correspond to commonly understood business objects), and the location of the data (protocol, server, database, etc.). In information management, metadata definitions provide a common language to describe data independently of the data type or underlying data management system. Metadata is used to define and access data structures, manage the flow and transformation of data from one repository to another and to connect disparate services and data sources. Metadata allows business intelligence applications to connect to data stored in different database management systems. Metadata allows data to flow from an operational database to a data warehouse.

Metadata management is the set of services used to manage the metadata that spans the diverse data repositories in an organization. A rich set of metadata management services has evolved and serves as the foundation for enterprise information management (including data warehouse and business analytics), and service oriented architecture (SOA), the basis for inter-application data sharing.

Lotus Notes: Collaboration Rich, Access Poor

Lotus Notes has been the leading platform for building collaborative applications for nearly twenty years. Typical Notes applications include tracking, information sharing and workflow, an area often referred to as groupware. Since Notes applications are comparatively fast and inexpensive to build, many organizations end up supporting hundreds or even thousands of collaborative Notes applications.

We like to consider Notes as the leading platform for managing semi-structured data. Let me explain what I mean by semi-structured. Notes data is not structured like relational databases, which consist of tabular structures of rows and columns. It is also not unstructured like the files on your laptop or web pages on a web server. Notes semi-structured data includes structured data fields as well as rich content, including formatted text, embedded objects and file attachments. Semi-structured data inhabits that world which exists between

structured and unstructured data. It constitutes a significant portion of the data in an organization. It is estimated that 16% of the data in an organization is semi-structured; by comparison only 4% is structured.

Lotus Notes applications tend to stand alone. Although the Domino Designer supports a variety of programming languages (Notes formula language, LotusScript, Java and JavaScript), there is very little support for data accessibility between Notes applications and the rest of the enterprise. Notes data is not relational, so it cannot be easily accessed by applications that expect to see relational data. Notes views cannot access data outside the native NSF container, which makes aggregation across Notes databases difficult. Notes has no native support for the metadata standards that are so prevalent in the rest of the information management world. The result is a proliferation of siloed collaboration applications which work well by themselves but do not integrate well with other enterprise services. Data integration must be done through custom programming and hand coded data exports, both of which are time consuming, expensive and difficult to maintain.

Metadata Services for Notes

The Data Modeler for Notes from Sun & Son offers a full set of metadata services for Notes applications. The Data Modeler provides an easy-to-use wizard interface for generating metadata models in a number of metadata formats, including Cognos, Information Builders and the open OGM XMI metadata standard. Through Data Modeler metadata, Notes applications can be accessed quickly and easily by all major business intelligence platforms for reporting, analysis and aggregation. The Data Modeler supports two modes for accessing Notes data: direct access to Notes data in the native NSF file, and external staging where Notes data is mirrored to a relational database.

Data Modeler – Powerful & Unique Features

- Access Notes data from BI reports
- Aggregate data across multiple NSF files
- Integrate Notes with data warehouse
- Transform multivalue fields into relational structures
- Notes security for staged data
- Drill-thru links between BI reports and Notes documents
- Hybrid Collaborative BI solutions

Both metadata model generation and data access are handled transparently by the Data Modeler. Specialized metadata modeling and database administration skills are not required. A Notes developer can use the Data Modeler to generate models which can be directly published to Cognos or other leading BI platforms. Business users can then use these published models to build reports, dashboards and scorecards without having to have a technical understanding of the inner workings of the Notes application. Notes applications can become immediately accessible by a wide range of users. Business users no longer have to wait for the IT department to add views to the Notes application to meet their reporting needs. Notes metadata services take care of this for them.

The Data Modeler provides a number of unique features for organizations who choose to stage Notes data to a relational database. They might be doing this to provide faster access to Notes data from their BI applications or to integrate Notes application data with their data warehouse or data mart structures. The Data Modeler can transform Notes multivalue field data into true relational data structures in the target relational database. Otherwise, Notes multivalue fields can be a major headache for reporting, since they do not fit a relational data structure. The Data Modeler will also emulate Notes document level security for data that is staged to a relational database. Normally, the process of copying data from Notes to an external database strips out the security that is enforced by the Notes client or Domino server. The Data Modeler transparently builds all of the required security objects in the staged data and in the Cognos metadata model. As a result, a Cognos BI user will see the same documents on a report

that she would otherwise see in a Notes view.

As you can see, the Data Modeler provides a rich set of metadata services which significantly improve the accessibility of Notes application data. Users can easily access Notes data through BI tools to provide reporting and analysis. Notes data can be aggregated across multiple NSF files or joined with other relational data sources. Notes data can be easily integrated with data warehouse architectures and with metadata management tools for tighter integration with the enterprise. The result is that Notes data is easier to access across the enterprise.

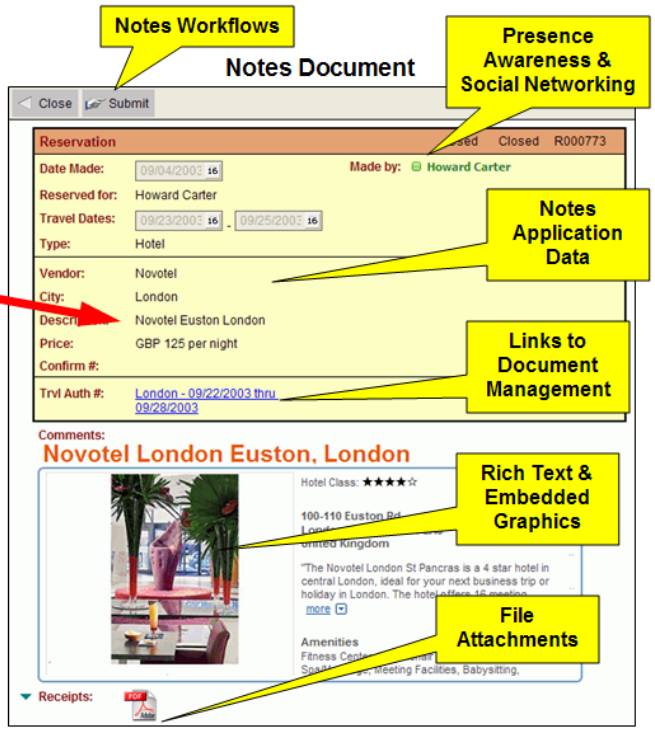
Collaborative BI

Data Modeler metadata services for Notes enable a whole new set of integrated capabilities between Lotus collaboration and business analytics. We refer to this as Collaborative Business Intelligence, or Collaborative BI. Data Modeler models can include drill-thru links which uniquely address individual documents in the Notes database. This allows BI reports to drill-thru in context to live Notes documents. Where BI platforms are optimized for powerful reporting and analysis, they tend to be weak in collaboration. Notes, on the other hand, is highly optimized for collaboration. By joining BI reports and Notes applications together using live drill-thru links, developers can create powerful hybrid solutions which merge the power of BI analytics with that of Lotus collaboration. From a BI report, a user can, at the click of the mouse, be in context in a live Notes where he can access all of the rich Notes/Domino collaborative features: rich content, workflows and shared communication services. The Notes document also serves as the point of integration for other Lotus collaboration features: presence awareness through Lotus Sametime, social networking through Lotus Connections and content management through Lotus Quickr.

Reservation#	Description	City
R000749	Flight to Oklahoma City	Oklahoma City
R000760	Flight to Oakland	Oakland
R000772	Flight to Boston	Boston
R000776	Car in Frankfurt	Frankfurt
R000768	Flight to Frankfurt	Frankfurt
R000769	Flight to London	London
R000773	Novotel Euston London	London
R000774	London Heathrow Marriott	London
R000783	Flight to Frankfurt	Frankfurt
R000784	Marriott Heidelberg	Heidelberg

Cognos Report

Drill-thru links bring the complete capabilities of Lotus contextual workplace to BI reports, including document context, workflows, document management, presence awareness and social networking



Notes Metadata = New Opportunities

We have seen how Data Modeler metadata services enhance the connectivity of Notes applications in many ways. This enhanced accessibility translates to new and higher value opportunities for Lotus customers, Lotus ISVs and Lotus business partners.

Lotus customers can immediately add value to their existing investment in Notes applications. Notes data can be accessed by the BI tools already deployed in the organization - from high end enterprise tools like Cognos and Business Objects to desktop reporting tools like Crystal and IntelliPrint. Notes data can be more easily integrated into portal and dashboard solutions. The life cycle of existing Notes applications can be extended by off-loading processor intensive reporting functionality from Notes views to BI tools. Notes data can easily be integrated into data warehouse strategies, making it more universally accessible. Moving forward, Lotus customers have the opportunity to build powerful new hybrid Collaborative BI applications which integrate Lotus collaboration with BI analytics and relational data.

Lotus ISVs can add powerful aggregation and reporting to their Notes based solutions. ISVs can extend their solutions through the tight integration of Lotus collaboration with BI analytics using metadata drill-thru links. ISVs can improve the scalability of their solutions through metadata driven hybrid applications which combine relational data and Notes collaborative data.

Lotus business partners can extend the range of services they offer to existing customers and create new customer opportunities. Notes application services can be extended to include Cognos BI services. Existing customer relationships can provide a direct up-sell opportunity for a new range of analytics based services. This doesn't mean that the partner has to invest in extensive up front technical training before he can realize any new opportunities. Since the Data Modeler automates the process of metadata modeler creation, partners can use the Data Modeler as a easy stepping stone to acquiring Cognos BI skills.

How to Learn More

Additional information about the Data Modeler for Notes is available from Sun & Son at www.sunandson.com, including demo files, white papers and more. Sun & Son is happy to schedule live Data Modeler demonstrations to interested business partners and customers. We welcome discussing with Lotus and Cognos business partners how you can work with the Data Modeler or resell it to your customers. For additional information and pricing, please contact Adrian Reason at areason@sunandson.com.

About the Author

Ravi Har Singh Khalsa is CEO and Chief Architect at Sun & Son, an IBM business partner focused on collaborative business intelligence, composite applications and knowledge-based solutions. Ravi Har is the designer of the Data Modeler for Notes product.