OpenGate White Paper

Having Problems Extracting Accurate and Dynamic MEDITECH Data?

A major question most vendors are asking themselves today is, "Will the Web ever help enable all applications to finally connect seamlessly with all other applications?" There are literally over 100 companies trying to help the healthcare industry deal with this complex issue. Middleware, Portal and HCIS vendors who supply such products as Single Sign-On, Identity Management, Integration Products (connectors), Web Architectures, Content Management, Scripting, etc. are getting better and better at meeting the needs of healthcare organizations. The full acceptance of HL7 by all the major vendors has helped in a large way, much as it did for the Interface Engines in the 80's. The one vendor almost all of these middleware companies have problems with is MEDITECH. There is one problematic byproduct of the enormous success MEDITECH has realized for almost 40 years, and that is the truly complex nature of the MEDITECH database. It has become one of the most sophisticated hierarchical databases ever developed and it is highly compartmentalized. The system is feature rich but has a data structure that is multiple layers deep.

Portals (the term used most often in healthcare to represent middleware) have been around healthcare for many years, with some success. Almost all of the Portal vendors in the healthcare space have run into significant problems trying to figure out where data is in the MEDITECH system. A variety of methods have been attempted but none have had the ability to efficiently get directly inside the MEDITECH data structure. That has now changed with the release of a product called OpenGate developed by a company named Blue Elm. Blue Elm was started about 10 years ago by a John Mackey. John had been, for over 10 years, one of the key people within MEDITECH who had to deal with all the interface and integration issues facing MEDITECH. John developed the first HL7 and TCP/IP interfaces for MEDITECH. Using his low-level knowledge of the MEDITECH proprietary databases and system, John initially developed a product called DrAuditor; which helped MEDITECH clients authenticate the quality and content of their data repositories. There are currently over 90 facilities using this product.

This experience led to the development of the next evolution of Blue Elm products called OpenGate. John wrote OpenGate to further the MEDITECH healthcare population's ability to deliver cutting edge and cost effective tools and applications. OpenGate allows a vendor (or facility) to open up MAGIC and C/S databases directly using ADO.NET; C#, VB.NET, ASP.NET, SOAP, SQL Server Reporting Services, and a host of other applications can all

Blue Elm Company LLC
220 Alder Road, Westwood, MA 02090
Tel: (978) 239-4430
Fax: (978) 856-3569
info@blueelm.com
www.blueelm.com

directly take advantage of OpenGate. This product has been successfully implemented in over 200 facilities over the past 6 years and is quickly becoming the accepted standard in the MEDITECH world. Because of ADO. NET's innate ability to support hierarchical databases, OpenGate is able to access MAGIC data without the need for middleware or schema manipulations. This means OpenGate accesses MEDITECH data using native NPR data definitions, which are the same definitions both MAGIC programmers and NPR Report Writers use. Users of OpenGate that have NPR knowledge do not have to learn a new schema to figure out how data is related or where data resides.

When deciding which platform to write OpenGate in, three choices were considered. The first was ODBC. However, ODBC was quickly eliminated as it lacked the flexibility to support a hierarchical database natively. ODBC is not a good fit with MAGIC/CS databases since ODBC is designed to be compatible with relational databases while MEDITECH databases are hierarchical. A middleware translation layer would be required between the NPR definitions and a flattened (relational) version of MEDITECH hierarchical database structure. ADO (OLE DB) was also considered, but ADO.NET was chosen for its current edge in data handling capability. Also, because of Microsoft's support for the .NET platform, ADO.NET seemed a better fit for future integration with Microsoft products. ADO.NET is the newest standard by Microsoft for universal database access. ADO.NET providers tend to be written natively for their database and are thus faster than both ADO (OLE DB) and ODBC drivers. In ADO.NET, NPR elements and segments can retain their exact (native) names (e.g., ADM.PAT.name). This describes the technical nature of why ADO.NET was chosen for OpenGate and the following are a few real life practical uses for such a tool.

One very straightforward use is to check the accuracy of the data that would be fed into MEDITECH though a scripting/screen scraping product. These products have traditionally worked well in the classic use (outside MEDITECH) because there are usually predictable ways of determining where data actually resides in an HCIS vendor's database. OpenGate can be used to simply check the actual data source within MEDITECH. If it does not have what was sent, then a simple input change can be made in the scripting/screen scraping product, to send the correct data element. This will prevent a user, such as a doctor, from becoming frustrated if his "password" rejected even though the new password had been attempted to be input by a traditional scripting approach.

Another use would be to help the traditional NPR Report Writer user make much better use of both their time and lessen the potential performance impact on the MEDITECH system. Products such as SQL Server Reporting Services (SSRS) can produce more dynamic, brilliant, and complex reports than using NPR Report Writer. By accessing data directly in SSRS, one can easily harness the power of a modern report writer while keeping their MEDITECH data in MAGIC and C/S. By leaving data in its native database, issues with keeping an external

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database synchronized are avoided. Synchronizing data from a MAGIC or C/S database is especially difficult due to the application layer in MEDITECH controlling the changes to the database. Anyone trying to extract data out of MEDITECH needs to be very careful not to try to take too much data out as this can potentially cause serious performance problems for the MEDITECH system. Using OpenGate eliminates the need for duplicating data since data can be accessed directly.

A third significant advantage is that it is very easy to integrate OpenGate into applications that are .NET compatible. Because OpenGate does not require a middleware layer or traditional third party component, OpenGate has a very small footprint. Therefore OpenGate has very low maintenance when it comes to downtime (essentially none). OpenGate, by maintaining a low profile and small footprint, makes updating software using OpenGate far simpler than the use of static interfaces and NPR reports. By having a low profile, OpenGate saves time and money during implementation and maintenance. Source code can be maintained in your application/system without ever having to access MAGIC or C/S directly to modify code/reports to retrieve data. Even for non-.NET applications OpenGate is easily accessible via SOAP and COM interfaces. Users of OpenGate include web portals, software applications, Windows applications, decision support products, scripting/screen scraping products, and data extractions to populate external databases, etc. For applications embedding OpenGate directly, the product is programmed very similar to how one programs with the SQL Server ADO.NET provider.

In conclusion, if you are a vendor or facility pulling your hair out trying to figure out what went wrong with your interpretation of MEDITECH data, there could well be a solution to your problems in Blue Elm. With OpenGate you can now use MAGIC and C/S data as you would use any other open database (e.g., SQL Server). The uses of OpenGate are only limited to your imagination.

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