METAMATRIX ENTERPRISE DATA SERVICES PLATFORM IN GOVERNMENT

DATA SERVICES FOR BETTER INFORMATION SHARING

With continuing threats of terrorist action, natural disasters, and pandemics, as well as the more mundane challenges of stretching budgets, improving operational efficiency, and fulfilling complex missions, the United States Government and its counterparts in other countries and at regional and local levels continue to struggle with the implementation of large-scale information-sharing programs along with the challenges of executing a wide range of ongoing operations and new initiatives. The complexity of these programs and the difficulty of meeting objectives is largely due to the large number and wide variety of information sources—data silos that have been independently designed and managed across departments at national and local levels to support ongoing missions. Significant roadblocks are encountered as various groups work to access data in these systems, resolve semantic differences, and integrate data from multiple systems, not only to share key information across groups but also to make better management and deeper insights possible with a more efficient use of resources.

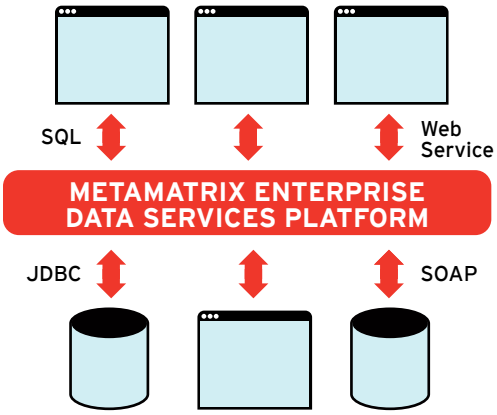
MetaMatrix is being used by government agencies in the United States and other countries to address diverse information management challenges. Through extensive work with government agencies and government-focused systems integrators, MetaMatrix EDSP has been honed to meet the exacting demands of government projects. MetaMatrix can help government organizations overcome numerous challenges as they strive to:

- **Provide accurate, current information for national defense, internal security, and intelligence efforts.** Share accurate, current, and timely information for national defense initiatives, internal security initiatives, and across the various intelligence and criminal justice systems at all levels while maintaining appropriate security. Support ongoing investigations, enable new programs, and improve responsiveness.
- **Streamline civilian program information exchange.** Manage reference information more efficiently and share any information more effectively between the national government and the various state, province, and local governments and non-government organizations to support and streamline numerous government programs and improve emergency response.
- **Improve budget management and procurement.** Gain greater insight into spending and into the nature of relationships with suppliers through better integration and aggregation of information and improved reporting.
- **Continue to improve efficiency of information systems.** Reduce costs by reducing unnecessary redundancy in data and systems, by improving automated interactions between agencies, by streamlining system development costs, by implementing service-oriented architectures, and by taking full advantage of commercial, off-the-shelf (COTS) software.

U.S. FEDERAL GOVERNMENT PROJECTS: IMPROVING INTEROPERABILITY

It is well documented that the Federal Government continues to struggle with the implementation of large-scale information-sharing and interoperability programs. The complexity of these information sharing programs is largely due to the dependency on a wide variety of disparate information sources—data silos that have been independently designed and managed across department, agency, state, and local governments for ongoing missions. There are significant roadblocks to accessing and integrating the data in these systems.

Solving interoperability challenges requires management priority, operational innovation, and more effective use of technology. U.S. Government agencies are making a start with their efforts to adopt service oriented architecture (SOA), a set of policies, practices, principles and frameworks that allow for the encapsulation of data and processes as a set of software services. SOA promises flexibility,



MetaMatrix meets the exacting demands of government projects.

bringing standard interfaces and protocols that can be accessed by a growing and ever changing community of information consumers.

In recognition of the problems plaguing the current information sharing initiatives in the Defense, Intelligence, and Civilian communities, Defense Information Systems Agency (DISA) and other agencies are promoting the adoption of Net-Centric architectures and technologies. Net-centricity harnesses the power of the Internet for information sharing and application processing, with the goal of eliminating the barriers of stove-piped systems while advocating the fusion of information within existing systems.

Agreeing on standard data architectures and vocabularies is also a key component of better information interchange. The Federal Enterprise Architecture (FEA) Data Reference Model (DRM) Version 2 was released in November 2005, and provides a much-improved framework for information sharing and information interoperability across the federal government. The DRM outlines a standard means by which data may be described, categorized, and shared. These are reflected within each of the DRM's three standardization areas:

- **Data Description:** Provides a means to uniformly describe data, thereby supporting its discovery and sharing.
- **Data Context:** Facilitates discovery of data through an approach to the categorization of data.
- **Data Sharing:** Supports the access and exchange of data.

In order to satisfy the goals of a net-centric data strategy, and to begin executing against the actionable framework defined by the DRM, future information-sharing architectures must provide a means to leave legacy data systems in place and expose information assets as data services within a distributed network environment. MetaMatrix software provides an ideal architecture for this purpose, enabling the creation of data services that decouple applications from data sources. In addition, the architecture must provide data dictionaries, registries, metadata catalogs, and other inventories of available data assets, as well as a way to search, discover, and request data meaningful to the task at hand. MetaMatrix incorporates all the metadata government organizations need in order to create and manage data services. Finally, the information-sharing architecture must provide for multiple levels of security with trusted, controlled interfaces that are appropriate for the type of information being requested. MetaMatrix can provide all these capabilities today, and is making a difference in diverse government projects.

CRIMINAL JUSTICE AND HOMELAND SECURITY

Analysis of the events of September 11, 2001 and their aftermath has served to provide many lessons learned, including the realization that better utilization of existing information is required for the purposes of domestic preparedness. As cited in the President's National Strategy for Homeland Security, one of the fundamental drivers is the need to share information in a timely manner among the intelligence, law enforcement, defense, emergency management, and responder communities.

Fundamental to criminal justice and homeland security is the need for information interoperability among all federal, state, and local levels of government. Information must flow across all jurisdictional boundaries, while maintaining the ability of information owners to determine when, why, and under what conditions anyone else may use it. What is needed is a pervasive, distributed information system that provides a broad range of users with tools and services that have access to disparate information sources. Such a system must be federated in order for information owners to maintain control of access to their information assets. The information sharing system must also be economical, and therefore must avoid the need to replicate information assets for access.

There is a great deal of technical complexity inherent in providing such an information sharing capability, and it should also be recognized that the political and policy challenges associated with the massive transformation underway within government agencies are equally daunting. Despite the complexity of the effort, it is evident that many agencies have failed to take advantage of approaches and technologies for information management that have been applied successfully in similarly challenging environments. While ubiquitous access to all information assets is technically not feasible and in some instances is inappropriate, much can still be accomplished in making information more visible and more accessible. Greater visibility and accessibility can be achieved without sacrificing the need to provide appropriate levels of control over access and usage, and in the process voiding many of the arguments today for not sharing information.

Greater information visibility and information sharing can help criminal justice and homeland security across all of its wideranging operations. This includes the consolidation of watch lists, transportation, and border data, and other intelligence gathering initiatives. It also extends to more business-focused programs that seek to consolidate and integrate the budget, accounting, and cost management functions.

MetaMatrix is working today to help intelligence and criminal justice groups in the United States and abroad to better utilize available information in service of their core missions.

DEFENSE LOGISTICS

Currently, over $170 billion in goods and services are procured each year at the United States Department of Defense. However, at the enterprise level, the DoD has limited insight into what it buys and from whom it buys. Each military service and agency procures goods and services across the Department, with little coordination between procurement offices that are purchasing the same or similar services. The existing spend information resides in numerous disparate applications located throughout the Department.

Rapidly-developing problems and hot spots around the world require governments to respond quickly with the right teams and the proper support. One major element of war management is ensuring the flow of personnel and supplies to and from the battlefield throughout all phases of an operation and across military commands. In order to develop and sustain this flow, logistics commanders in the field need to have information that will allow them to see both the tactical and logistical situation. The current combat support environment falls short of this goal, as a result of stovepipe information systems for which there is lack of visibility and limited access. As a result, a common operational picture is impossible to attain.

The ability to capture essential data, transform it into usable information, and gain information superiority is paramount to the success of maintaining force readiness and winning conflicts. The ultimate database for the war fighter would have information on all Service inventory, DLA inventory, private contractor assets, and in-transit shipments available via a single access point, such that out-of-stock conditions could be mitigated in real time. This type of virtual information access capability would have a massive impact on war-fighting readiness.

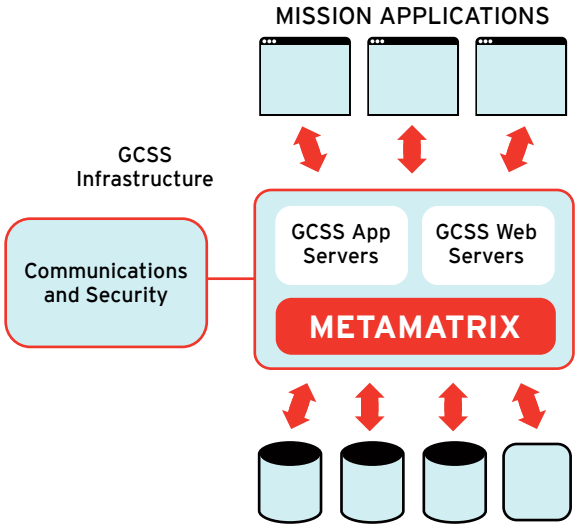
In addition to war-fighting, the second major benefit of information readiness would be the ability to execute leveraged purchasing programs. As an example, many organizations in the federal government buy pharmaceutical and medical supplies—including the VA, DLA, GSA, and Service Hospitals. If inventories and procurement actions were available as a set of reusable data services, any agency that was ready to make a purchase could join other agencies in order to drive up the purchase quantity and drive down the cost. In this example, the savings would be enormous. Although procurement data is generally not as sensitive as intelligence data, much effort still remains in providing technologies and approaches that improve the visibility and information sharing capabilities of agencies that could benefit from joint purchasing.

METAMATRIX WORKING FOR THE U.S. GOVERNMENT

MetaMatrix has been selected and implemented as the information integration backbone in several large intelligence agencies both in the U.S. and abroad. With MetaMatrix, these agencies are able to combine structured, unstructured, and geo-spatial information within one environment, and as a result, are able to meet their integration targets for new initiatives in a matter of months, rather than the years of effort that have frequently been required.

SOLUTION EXAMPLE: Global Combat Support System

Recognizing the need to provide commanders in the field with a better and more integrated source of logistics information, DISAhas begun developing the Global Combat Support System (GCSS). GCSS is an initiative that integrates existing combat support information to gain efficiency and interoperability in support of the warfighter. DISA has selected MetaMatrix to support the GCSS Program in its transition to a new Enterprise Information Integration (EII) strategy. MetaMatrix enables the transition from stove-piped systems to a loosely coupled serviceoriented architecture, DISA's Net-Centric environment. Data service management solutions from MetaMatrix enable the GCSS to provide real-time information from transportation, supply, maintenance, personnel, acquisition, health affairs, finance, and engineering systems. MetaMatrix makes distributed data accessible and manageable, breaking through the traditional barriers of location, structure, semantics and context.



MetaMatrix is helping the Defense Information Systems Agency improve delivery of combat logistics information.

GOVERNMENTS OUTSIDE THE U.S.

MetaMatrix also works with governments around the world who use data service management as part of a flexible approach to data access and integration to improve interoperability among diverse systems and create a single view of information from diverse sources.

FOR MORE INFORMATION

JBoss Enterprise Middleware is a key to making service-oriented architecture simple, open and affordable. For more information on JBoss Enterprise Middleware, visit www.redhat.com/jboss or contact your Red Hat sales representative.