VA ENTERPRISE DESIGN PATTERNS INTEROPERABILITY AND DATA SHARING DATA-AS-A-SERVICE

Office of Technology Strategies (TS)
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EXECUTIVE SUMMARY

Scope

Data-as-a-Service (DaaS) represents a capability that enables applications to obtain seamless access to enterprise data stores in a standardized way, while shielding them from the complexity of their implementations. It is based on the concept that data can be provided on demand to users through web services regardless of the organizational separation of service providers and consumers.

Business Need

Within VA, IT programs have experienced problems accomplishing enterprise-wide data sharing due to the development of self-contained applications that access application-specific data stores. In many cases, these data stores required proprietary and/or custom software to access and display data, which often constrains users to proprietary standards. Solutions in these cases typically included a software bundle comprised of a data store and the application(s) needed to access the data. Implementation and sustainment of these solutions left programs in a state of vendor lock-in in order to maintain their applications. Additionally, many programs developed applications tightly coupled to specific data stores, resulting in difficult troubleshooting and increasing maintenance challenges as the data stores changed over time. The diagram below provides a notional services “layer cake” representation of the “as-is” state of the VA application development environment. It is meant to specifically highlight the data layer within VA’s IT infrastructure, indicating the existence of data stovepipes and silos (red rectangles).

Approach

VA is planning and executing the evolution of its IT architecture from a set of stove-piped systems to an integrated, modern service oriented architecture (SOA) environment. This evolution will involve design approaches that support the modernization of existing applications as well as future implementations of new applications that share enterprise services and data using the VA SOA infrastructure to access enterprise data. DaaS will be realized through SOA-based data services in conjunction with additional Enterprise Shared Services (ESS) and data management tools (MDM, ETL, etc.), that will enable data quality to be maintained at a standardized enterprise level, cleansing and enriching data and making it available to different systems, applications, and users on demand. DaaS will aid in simplifying and accelerating application development, eliminating data silos by enabling enterprise-wide data sharing and allowing VA to address challenges with respect to linking various types of customer data and views through a shared enterprise Virtual Data Access Layer (e.g., Health, Benefits, Corporate, and Memorials).

Enterprise Design Patterns (EDPs) are developed by TS in coordination with internal and external subject matter experts and stakeholders. An EDP is a reusable capability guidance document that identifies best practice approaches and resources for achieving VA IT strategic objectives. The EDP Team uses industry trends and innovations; enterprise architectural standards; and guiding principles for capabilities and constraints to improve efficiency and effectiveness and define solutions to reoccurring technical problems. The EDP helps guide the design of IT systems and services by VA project teams.