

# INFORMATION AND KNOWLEDGE ENGINEERING

## SOLUTIONS FOR THE BUSINESS OF GOVERNMENT

The Appsential team of highly educated solution experts understands the challenges associated with integrating key sources of data for decision-makers. We also migrate data between systems as needed to support operational needs. Our team is unique in its knowledge of Federal Agency data and its ability to offer client value through best practices to identify and translate new sources of data into concise, actionable insights.

Often an agency’s ability to make wise operational decisions rests on a foundation of knowledge, information, and data. This capability area encompasses the activities needed to determine the data needed, and to collect this data in information and knowledge management systems.

To understand what data is needed, information must be traced across functional domains and the data must be modeled to understand how it interrelates, and standards used to ensure that consistent terms are used across domains. Once the relationships between data sets are identified, systems that contain the data need to be integrated and the information centralized so agencies have the data needed to put together the full picture and make informed decisions.

The Appsential team understands the challenges associated with integrating key sources of data for decision-makers, and of challenges associated with the migration of mission-critical data. Our team has developed internal best practices for integration of new sources of data into core systems.

### Information and Knowledge Engineering



## OUR METHODOLOGY

The Appsential Data Integration methodology begins with identifying a new data source. We acquire a sample of the data from the authoritative source and analyze the data to determine the level of granularity and the internal structure of the data set. Here, we must guard against data overload while at the same time providing the Latest Time of Value (LTOV).

We look for internal keys that relate data elements, as well as investigate the operational use of the data. After we understand the data in isolation, we seek to develop the transformation rules that connect new data with existing information. This may involve aggregating or transforming the data to support meaningful analysis.

As we perform initial integrations of the data, we examine the results, and adjust rules as needed to tune and optimize the ingest logic. Once the data enters systems, we take responsibility for the safeguarding of the data, working closely with cybersecurity teams, and developing additional plans for protecting the information entrusted to us.

We upgrade and maintain systems, migrating data between environments as needed to support operational use. Our Data Integration methodology ensures that the data is staged and ready for numerous types of analysis in order to prepare reports for decision-makers.

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*Appsential has applied its expertise in information and knowledge management during the design, development and operations of the Department of Energy's business systems, including its Oracle financial system, procurement system, data warehouse, and others.  
The integrated data-warehouse integrates data from multiple information sources into a single repository of record that can be used to support essential business analysis and decision-making.*

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## About Appsential

Appsential is a customer focused IT and management consulting firm – delivering process driven, repeatable solutions. The testament of our commitment and high quality work to enable government is directly evidenced by the fact that we successfully support all key mission critical business systems including: Oracle Federal Financials, Compusearch PRISM, Oracle Web Center suite, Oracle Business Intelligence Enterprise Edition and Datawarehouse, as well as Oracle Primavera Portfolio Management.

## Let's Work Together

Established in 2005, Appsential LLC is certified by the SBA as a Small Business. We can provide our customers access to the following Contract Vehicles.

- ➔ **GSA IT Schedule 70 (prime)**
- ➔ **CIO-SP3 Small Bus. /Unrestricted**
- ➔ **DHS EAGLE II FC2**
- ➔ **DHS TABSS Domains 1 & 2**
- ➔ **SeaPort E**

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