



# Cognitum - GUI-oriented J2EE development platform

**Data Management Service – secure and business-oriented.**

## The Situation

**Applications and the IT-infrastructure often require central data sources (directories, relational databases (RDMS)) for exchanging and saving information, authentication and even access control.**

As a result, maintaining the quality and integrity of directory content has become a critical requirement. Still, a large percentage of directory data is usually found to be inaccurate or incomplete. The ability to cleanse, maintain and leverage directory data has been limited by the lack of accessibility, flexibility and usability of core directory services. Furthermore the creation of new interfaces to existing data whether these are User Interfaces or automated interfaces often appears to be complicated or even impossible.

## The Challenge

Organizations must be able to implement comprehensive directory services - with secure and accurate data - to supplement or replace the more costly and less efficient mechanisms currently in use for data sharing in applications.

## The Solution

**Business-oriented and secure data exchange between core applications**

**Cognitum** is a J2EE development platform that enables the rapid design and deployment of business-oriented applications based on directories and relational databases. Highly customized and flexible applications can be quickly developed and delivered. The development effort of applications that use heterogeneous data sources is reduced considerably thanks to the Data Management Services of **Cognitum**, thus helping the company to shorten the "Time-To-Market" of the application decisively.

**Cognitum** can be seamlessly integrated into your IT environment and provides a common platform with a comprehensive package of configurable services for all data management requirements.

**Cognitum** includes multiple components, which provide a visual design and runtime environment, that accesses LDAP, RDBMS and other data sources. **Cognitum** manages complex tasks like data organisation. Therefore, this frees time for application developers and allows them to put more energy into important tasks like

business policies and the user presentation layer, to develop effective interfaces and applications.

**Cognitum** simplifies the planning, development and usage of web-based directory services and applications and improves quality and precision of directory-service content.

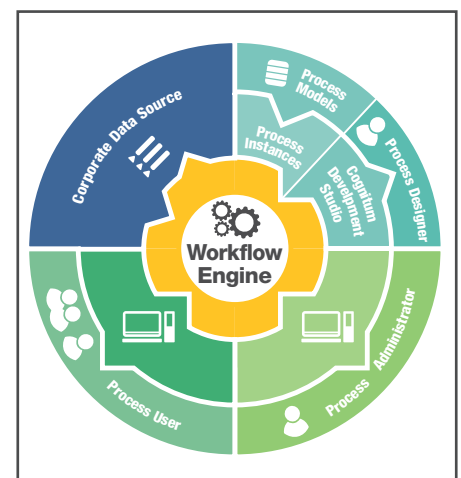


Figure: **Cognitum** Workflow Process

# Core Features

## Features

- The visual development environment allows fast creation of prototypes and offers iterative design options
- The concurrent connection with disparate data sources supports the logical aggregation of data which are used for presentations and applications
- Application components and services support a quick, secure and effective application development.
- The open and scalable architecture is based on standard technology (e.g. JAVA and XML)
- Improved support of a secure application authentication and data transfer
- Extendable and fully configurable multilingual dictionaries help to locate applications effectively
- A scheduler starts predefined tasks such as preparing reports, accessing webservices and resolving URL

## Components

**Cognitum** includes multiple components:

- **Cognitum** Console – the core development and management environment. The console is used to create standard application functions and key data, to define access to the data and to describe access authorizations for the applications.
- **Cognitum** Development Studio – the wizard based graphical development environment for the development of user interface and business forms. The Studio is a concept for custom forms, data import/export models, workflow process models, reports, etc. Although a major part of corporate procedures/operational workflows can be defined by “show-and-click” with the help of **Cognitum** Console, for more complex business logic, JAVA, JSP and ASP code can be integrated into the applications.
- The **Cognitum** Data Management Services – supports the integration of different data sources, such as Microsoft Active Directory, relational database systems, LDAP directories, etc. to include this information seamlessly into the **Cognitum** applications. The JDBC Driver Manager allows precise configuration of the connectors.
- **Cognitum** Server – the application engine can execute on most common servlet engines. The integrated Apache Tomcat J2EE application server helps to run real-time tests of the applications developed with **Cognitum**. As soon as the application is configured and ready for operation, it can be directly exported from the console as a WAR File (WebArchive). Then it can simply be deployed onto any J2EE application server (e.g. Apache Tomcat, JBoss, Wildfly, WebSphere, WebLogic, Glassfish etc.).

## Technical Architecture

**Cognitum** is based on JAVA and XML technologies; from the architectural point of view **Cognitum** has three primary layers:

The lowest layer represents the connectivity to any kind of physical data source. Access to data is provided using JNDI and JDBC connectors. Load balancing and fail-over strategies are also handled within the connectivity layer.

The abstraction layer hosts the workflow engine and performs data abstraction based on defined business logic. This layer models the applications' underlying data and creates business rules and data triggers. The workflow engine handles tasks, links, time-outs, and sub-processes, given the designed business processes.

For the presentation layer, **Cognitum** features application programming interfaces (APIs) and workflow objects that can be used with web services, web forms, reports, and other **Cognitum** solutions. The arrangement of abstraction objects, web forms, and solutions is a **Cognitum** application that communicates with other applications and end-users. .

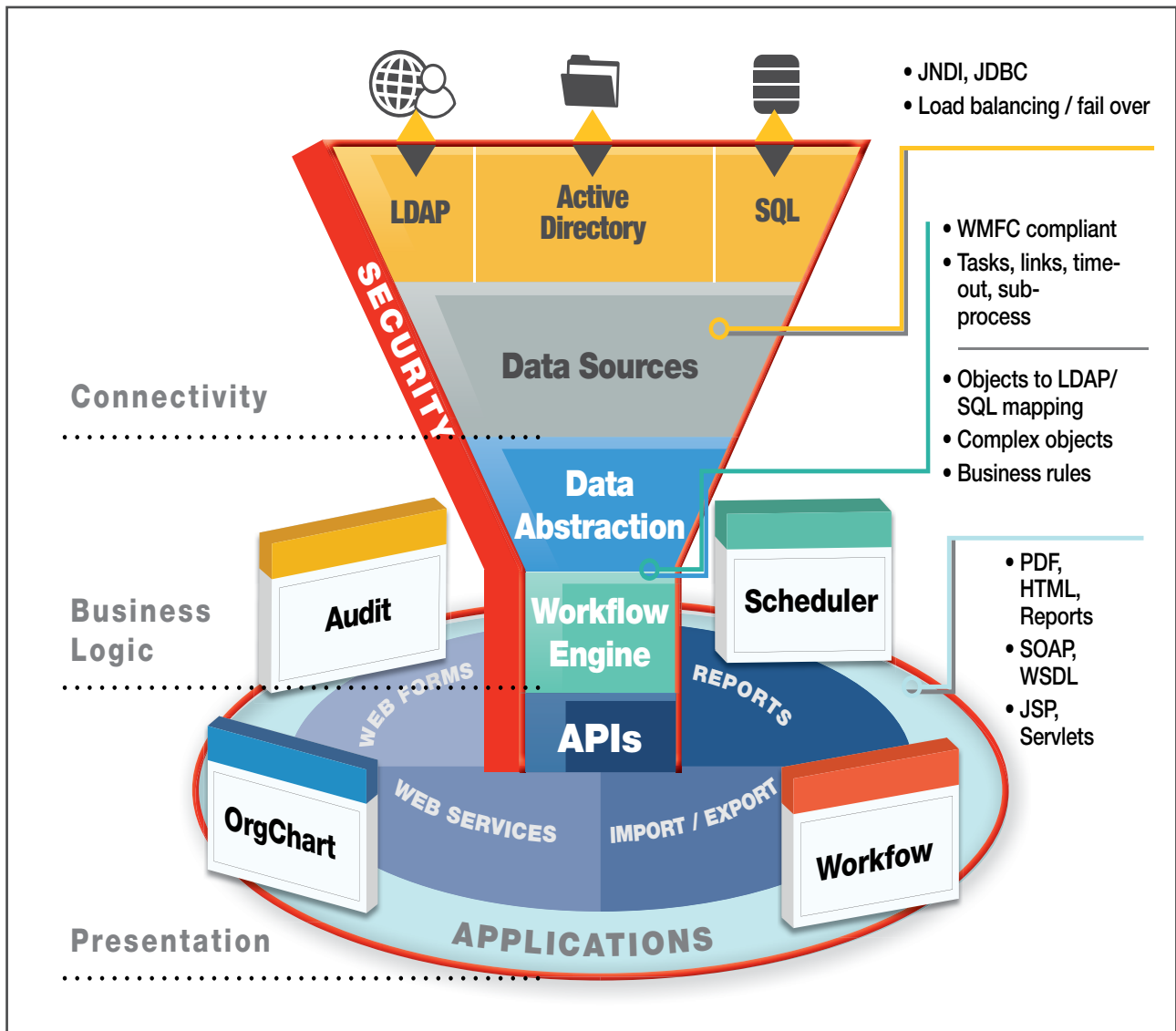


Figure: Cognitum Technical Architecture

## Applicability

Due to the modularity of **Cognitum**, a wide range of solution types can be developed, for example:

### Content Management

- Corporate directory, white and yellow pages
- Organizational charts
- Catalog management
- Organizational, hierarchical, and other business-oriented views
- Report and status generation
- Structure management

### Identity Management

- System account management
- Group / role / profile management
- Password reset and propagation
- Delegated Administration
- Self-Service

### Security Management

- Access rights and authorization management
- PKI management

### Provisioning

- Creation, deletion and update of system accounts
- Creation, deletion and update of database accounts
- Creation, deletion and update of directory accounts

### Workflow

- Personnel workflow processes
- Data workflow processes

# Cognitum Applications

**Cognitum** is a modular solution and additional application packages are available:

## **Workflow:**

A browser-based, graphical process designer and management tool to create business procedures which can be edited by all process participants via a browser-based interface.

## **Scheduler:**

A tool for planning specific tasks in a defined time slot.

## **OrgChart:**

Dynamic display of organizational information based on content from LDAP and/or RDBMS.

## **Audit:**

This module includes functions for monitoring user actions and modifications.

## **Import/Export Manager:**

allows a global or incremental data transfer between multiple memory locations and data sources. It supports the graphical creation of specifications for data transformation with the import designer.

## **Report Designer:**

A visual, drag-and-drop, interface to create reports from data in any database.



# Cognitum

**Benefit from the advantages of a data and business oriented solution**

- ✓ One end-user interface to multiple information sources
- ✓ Streamlines business processes with fully-customizable end-user interfaces
- ✓ Short time-to-service
- ✓ Open, SOA-conform, and non-intrusive platform
- ✓ Fully adaptable look and feel
- ✓ Multi-language support for the applications you build with the Cognitum platform
- ✓ Support for code reuse



# COGNITUM

S o f t w a r e



**Cognitum**

**COGNITUM Software combines long-term Identity and Access Governance expertise for the development of standard software.**

Identity & Access Governance is a key component in building a secure IT infrastructure. With our comprehensive practical experience in consulting, implementation and our expertise in identity and access governance solutions, we have developed our software that is deployable rapidly and cost effective - for any business, regardless of industry and size. COGNITUM Software emerged from ITConcepts group, a leading, global IT service provider and agnostic system integrator.

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