



USoft Technology Platform

Summary for IT Professionals

Executive Summary

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USoft is a generic design environment for creating data-intensive business applications.

Benefits to customer are:

- Ease of build: minimal programming skills needed, rapid development.
- Excellent prototyping facilities promoting end user involvement at design time.
- Ease of maintenance resulting in low cost-of-ownership.
- Integration capability of disparate or legacy applications and data sources.

These benefits are achieved through the following technological features:

- Design-time environment based on conceptual declaration, with automatic generation of database structures, C/S and web interfaces, and runtime components. The design-time conceptual layer is based on business rules concepts.
- Runtime rules engine interoperable within a wide range of IT architectures. The rules engine is a software component implementing business logic and responsible for application data integrity.

Business Rules Management

USoft makes it possible for technical analysts and conceptually skilled people to perform much of the development work associated with business rules and the data model, without requiring programming skills. Initial business rules are specified in natural language, (for example, English). USoft is also moving towards the use of SBVR for the specification of business rules. These business rules are the central concept of the USoft Approach to application development. Typically, with USoft you do not translate business logic into low-level

Java, Visual Basic or C++ code. Even the more involved rules are specified by setting parameters or by writing standard SQL statements. Besides understanding business rules as a development principle, all that is needed is a firm grasp of set-oriented thinking, in for example, SQL. The declarative rule paradigm strongly reduces the need for programming skills without limiting the advantages of integrating the rule paradigm with the object-oriented paradigm. Most importantly, as Business Rules Management is at the core of the USoft methodology, USoft business rules are very easy to maintain and change, even in applications with hundreds of implemented rules.

Development Environment

USoft uses a central dynamic repository containing data model definitions, business rules, and user interface definitions for Internet, Intranet, client/server and batch environments. Applications are generated from this repository without requiring source code editing or proprietary scripting languages. The repository remains a single point of definition throughout application life cycles and even beyond. It includes authorization information. USoft enables rapid deployment of each solution iteration.

Modular Development

USoft applications can be split up and developed in separate modules, and run as one application. The end user application allows for enterprise rules and an integrated GUI. Splitting up your application into several modules which can be developed and maintained separately can make your development more flexible. It has many advantages:

- You can create independent releases for the modules.
- Faster delivery of smaller projects.

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- New teams only need to build up knowledge of one (small) module.

Integration

USoft is interoperable with other software, such as legacy systems, web sites, content management tools, ERP systems, and B2B communication software. Its Rules-Driven Method Invocation (RDMI) features enables you to call third-party object layers and component ware at the level of individual business rules. This gives you tight, fine-grained integration of USoft and third-party software.

The Active EAI concept within RDMI enables you to represent external data sources as if they were USoft database tables. This gives you unparalleled ease of application integration after one-time declaration of external data sources.

USoft's technology platform promotes ease of development and a structured approach:

Structured Development

The development process itself can be documented and traced to any required level of detail: you can record workload, design decisions and their implementations, development priorities, notes and session minutes about every aspect of system design. This information is shared by all team members and truly integrated with the application itself, for instance, through automatic change logging.

Agile Development

Due to its highly flexible nature, and use of the USoft Approach with its iterative prototyping rounds, USoft can be fully integrated into an Agile Software Development process. Several Agile methodologies are available to support this process, including Scrum, Crystal Clear, Extreme Programming, Adaptive Software Development, (ASD), or Dynamic Systems Development Method (DSDM).

Manageable Development Content

UML, ORM and E/R data models can be transferred to and from the USoft repository using point-and-click interfaces. Logical parts of USoft applications can easily be selected for export and

import to allow version control, parallel development and use of template applications.

Usability

Wizards help you create data model components. Development efforts for both web-based and Windows environments are greatly expedited by the possibility to run and test instant prototypes built from current repository information. Extensive help facilities are provided. Business logic is expressed mainly in standard SQL statements. These statements are built using simple drag-and-drop facilities, and automatically checked for correctness.

Key Modules

USoft Definer is used to define business models. Unlike other tools in the market, USoft Definer models do not just include structural elements (entities, domains, attributes, relationships, views, subtypes, conditions) but also complex data integrity rules spanning 2 or more database tables and reaching any level of logical complexity. These rules are usually expressed in standard SQL statements but they can also be programmed in third-party objects and procedures (e.g. .NET, J2EE, Visual Basic) called by the rules engine.

USoft Definer contains **USoft TeamWork**, a multi-user rules repository that supports project management from rules discovery and natural-language definition through to work assignment, change logging, session notes, prioritization, and management overview of project progress.

Also integrated in the USoft Definer is the **USoft Batch Definer** which covers the definition and execution of batch jobs. Batch applications execute from the same set of rules and application specifications used for online applications.

USoft Authorizer is used to define authorization on the application tables (end user data). Authorization can be set for various user groups within the development team, and can deal with sophisticated rule specifications.

USoft BenchMark tests prototypes for functionality and performance. Complex interdependent business rules can be prototyped and corrected instantly.

USoft Repository Manager provides an XML-oriented approach to USoft Version Management that enables you to export (in XML format), compare, and synchronize USoft repositories or parts of repositories.

Prototyping and Interface Design

USoft automatically delivers web-based and Windows-based default user interfaces for prototyping. This allows you to share the evolving application with future end users so they can give immediate feedback. The prototypes have full data manipulation capability: read, write, create and delete, commit and rollback of all application data currently modeled. USoft prototypes are fully transaction-based.

USoft Web Designer

USoft Web Designer is a point-and-click, drag-and-drop interface to tailor default web interfaces to what you want for an end result. It offers design functions related to data manipulation: you can add, change or drop fields (column value displays), add, change or drop buttons for data manipulation actions, influence the representation of date values, and so on.

USoft Web Designer is not a content management tool for web sites, nor does it offer professional graphic design capabilities in this area.

USoft Windows Designer

USoft Windows Designer allows you to create full-fledged Windows interfaces for USoft applications. It features a high-level style guide for windows, controls and dialogs, which ensures a common look-and-feel throughout the application interface.

Runtime Rules Engine

The Business Rules paradigm is powerfully integrated with mainstream IT technologies. The syntax and semantics of rules give you immediate access to both external data and software. This

includes calling web services, the import and export of XML or SOAP content, XSL transformations defined with rules, and the deployment of Java and .NET components in rules.

The runtime software delivered by USoft to end users is referred to as the USoft rules engine. The rules engine controls access to business data, guarantees advanced levels of data integrity, and implements associated business logic as a service to a wide range of USoft or non-USoft user interfaces and batch applications.

The USoft rules engine is accessed via USoft web page interfaces, other ASP/JSP server pages, or generally by ODBC/JDBC, ADO or ADO.NET compliant third party software. It can also be invoked using XML, or act as a SOAP-based web service.

Using a native JDBC driver, the rules engine can be deployed on both Windows XP onwards and UNIX-based servers.

The rules engine is set up and can be accessed through a browser-based management console for remote control and tuning.

For web applications, USoft generates web pages that connect to data sources through a thin layer of ASP or JSP call and a USoft runtime component installed on the web server.

In client/server (Windows) applications, the rules engine runs on both the client machines and the server. This keeps network traffic (data and rules transfer) down.

USoft as a Web Service

Web services offer a new and evolving model for building distributed applications. USoft's Web Services solution allows other applications to communicate with USoft applications using Web Service technology, by providing a mechanism to access USoft application data through HTTP using soap messages.

Supported Technology

Supported client platforms

This section describes supported client platforms for solutions featuring USoft user interfaces. USoft generated web pages run on most recent internet browser versions, for example: Internet Explorer, Firefox, Opera and Google Chrome. Note that it is important that browsers are kept up-to-date with all the latest available patches.

For a production and development environments, you need at least Windows XP or Windows 2003. Windows Vista and Windows 2008 are also supported.

For both the USoft production and development environment, a Pentium IV PC is the minimum required. For development work, a dual core machine is recommended.

The memory requirement for the production environment on Windows XP or Windows 2003 Server depends upon the size of the USoft application and the number of other applications running on the machine, but a minimum of 512 Mb is recommended. For the development environment on Windows XP and Windows 2003, a minimum of 1 Gb is recommended.

For the production and development environments on Vista or Windows 2008, a minimum of 1 Gb of RAM is required, though 2 Gb is recommended for development work, especially if other applications are running on the system.

Supported server platforms

Platforms that the rules engine is currently ported to include: Windows XP onwards, RS6000/AIX, Sun/Solaris 6, and HP UX. The same applies to USoft Batch jobs. A browser-based management console for remote control and tuning of the rules engine is included.

In these environments, the USoft rules engine acts as a server to USoft-generated interfaces but also to JSP/ASP server pages, MS Visual Studio, COM+ / Component Services, .NET, or the J2EE platform (e.g. EJB).

Supported databases

- Oracle versions 10 and 11 are currently supported by USoft Developer, in line with the policy that USoft should actively support the two most recent versions of Oracle. In principle, Oracle 9 is also supported by USoft Developer, but support is limited.
- Versions of Microsoft SQL Server up to and including SQL Server 2008.
- SOLID Server 3.5, and 4.5.

Supported middleware and third-party integration techniques

The USoft rules engine as a client can be made to invoke MS Visual Studio, (D)COM / Component Services, .NET, and J2EE components. It also interacts declaratively with any data source approachable through ODBC/JDBC.

As an application server, the USoft rules engine can be approached by any ODBC/JDBC client including OLE/DB and ASP/JSP server pages, or can be componentized to act as a data manager service within Java-based, (D)COM or .NET based object layers.

With the popular dotNet (.NET) common language runtime (CLR), a vast amount of functionality has become available in the form of components in standard libraries and code stub on the internet in an easy to use form. This functionality is available in USoft using the RDMI interface for Microsoft's .NET, and the C Sharp programming language.

Integration details depend on requirements and range from complete online (OLTP) integration with or without transaction control to message-based integration (MSMQ, MQSeries...) and batch-oriented integration (PL/SQL or other proprietary scripting tools, JCS or other batch schedulers, while USoft also offers a native batch server component).

USoft has also expertise in connecting with Java-based and (D)COM object layers, CICS databases and SAP (BAPI, JCO, iDoc protocols). USoft does not include specialized reporting tools as a native feature. USoft has expertise connecting various reporting tools including Actuate and Oracle Reports.