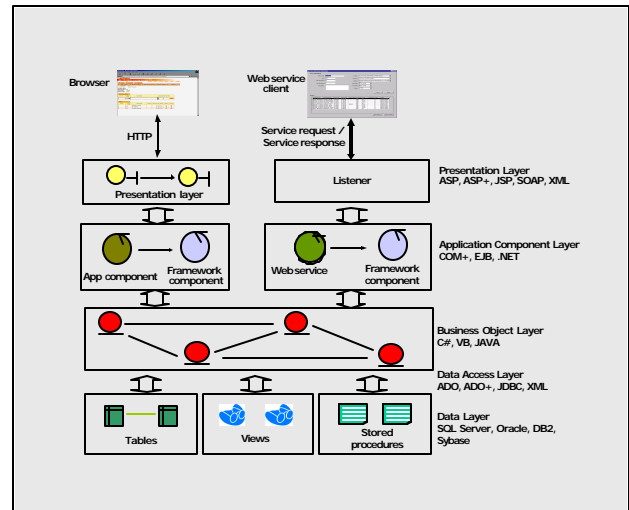## Present Day Scenario

Rapid changes in business needs as well as underlying technologies have created a challenge for organizations. Modeling tools as well as integrated development environments do not solve this problem, as they either lock the users to certain technology platform or keep a gap between a model and its final implementation. The OMG have responded to this challenge by introducing the paradigm of Model Driven Architecture™.
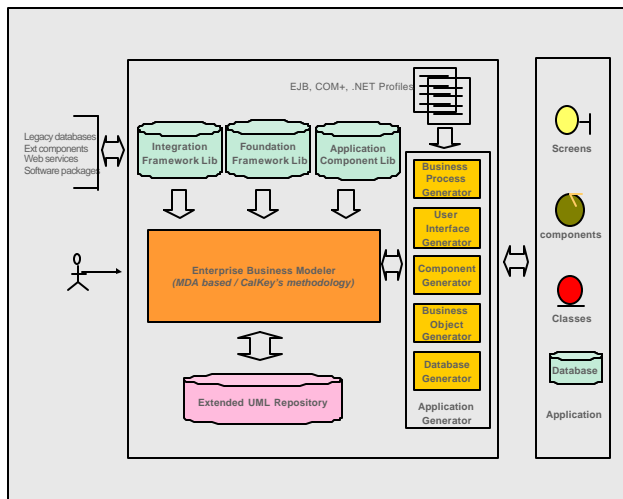
Caboom

Caboom is a **UML™ based design and development platform** that inherently supports the **OMG Model Driven Architecture™**. Caboom enables business analysts and software engineers to rapidly design, build and enhance enterprise component applications. It provides an environment for users to model an entire application from use case definitions to detailed business logic in UML. The model then can be used to generate entire code for various middleware platforms like COM+, J2EE or .NET thus providing platform independent modeling.

Caboom Architecture

Caboom incorporates CalKey's modeling Cal 8 process and supports n-tier application architecture. The process interlinks the various stages of the software development process. This provides a high degree of alignment between business requirements and the final application. It also provides change management feature at various levels. For example if a class is changed the corresponding impact on the components, which use that class is notified.

Caboom Features

Enterprise Application Framework

Caboom is developed on a flexible and scalable architectural framework. The framework uses an **n-tier architecture** optimizing and leveraging the best technologies available at each tier. XML is used as the data transportation mechanism between the various tiers. The framework also supports **SOAP and UDDI** standards.

Caboom generated application architecture

Foundation Framework

Caboom provides designers with a built-in foundation framework to assist during modeling. This framework comprises of various design and analysis patterns (e.g. factory, iterator, accountability, extended object) and foundation services (e.g. entitlement, persistence, workflow, collaboration, matching). The integration framework simplifies integration with existing databases, third party components and web services
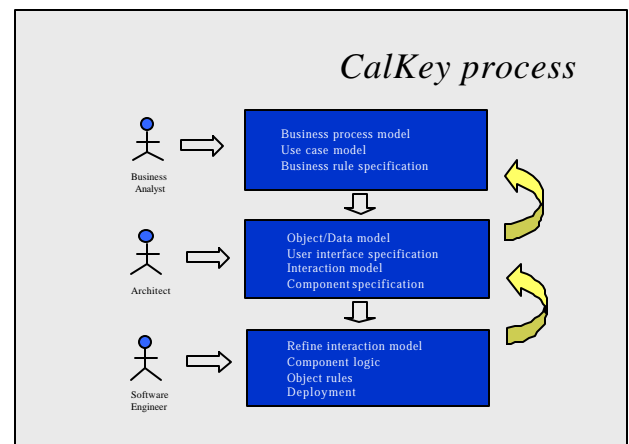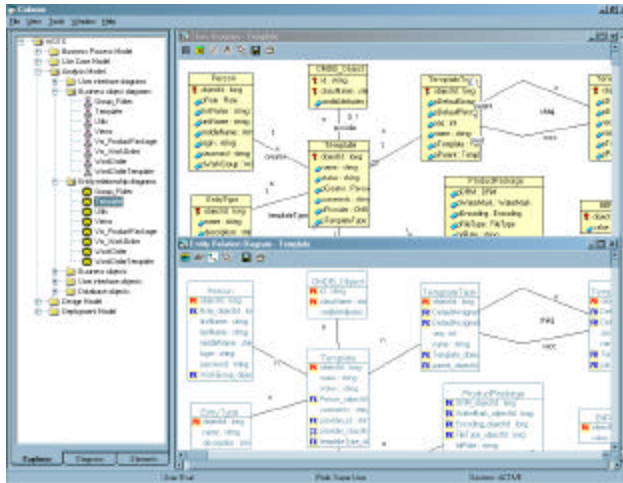
UML Based Modeling Process

Modeling Process

Caboom has an inbuilt UML based process that guides you through the application modeling process. It maintains the links between the information captured in different UML diagrams.
This helps bridge the gaps between traditional analysis, design and development.

Object-Relational Mapping

The O-R mapping framework provides a seamless mapping between the classes and database entities by adopting best practices from the industry. It also provides the facility to model your existing database schema and automatically generate classes. The O-R mapping is optimized to give wide flexibility on various databases and performance.

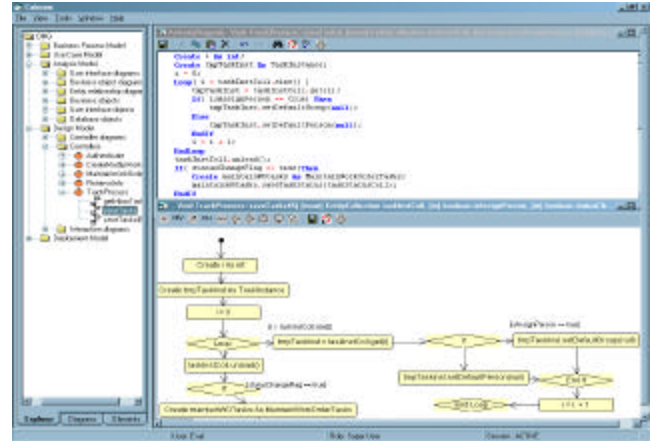**Object – Relation Mapping**

Change Management

Caboom has a built in change management system that allows users to analyze the impact of any changes done at any step of the modeling process. This feature helps in enhancements and changes in the application.

Multi User Development Environment

Caboom provides a robust multi user environment, which allows multiple users to work collaboratively on a project. The environment allows users to define different roles (e.g. business analyst, architect) in a project lifecycle and provide security policies on various UML diagrams in a project. Caboom also provides facilities like diagram locking and concurrency management.

Code Generation

Caboom significantly reduces the development time through its code generation feature. Caboom generates **complete application code** across all the application tiers. The code generator uses built in **CalKey platform specific profiles** for generating platform specific code from the platform independent model. Caboom also has provision for using platform specific profiles provided by OMG in future or from other vendors during platform specific code generation. **Platform independent business logic** can also be modeled in Caboom using UML scripting. This can be done using both, graphical flowcharts or text scripting.

Platform Independent Business Logic Modeling

CalKey Profile Specifications

Database Generator - generates the database scripts for **Oracle, SQL/Server, DB2, Sybase**

Class Generator - generates pure **Java** and **C#** classes. Persistence logic required to access the attributes and interact with the database are automatically generated

Component Generator – generates component code for **COM+, J2EE and .NET** platforms. Generates code for both, business logic and business rules implemented by the component. J2EE platform support includes **BEA WebLogic and ATG Dynamo**

User Interface Generator – generates **ASP.NET** or **JSP** pages for maintaining master data

Caboom generates serialization / de-serialization logic for **components to communicate with classes**. In addition to this a **XML persistence descriptor** is also generated for classes to interact with the underlying database.

Caboom Benefits

Caboom provides tangible benefits for everyone involved in the software design and development process including designers, software engineers, Business Analysts and Technical / Platform Architects. Some of the benefits include:

- Reduction in development time by up to 70%
- Reduced cost throughout the application life-cycle
- Improves application quality and ease of maintenance
- Modeling independent of platform increases return on technology investments
- Rapid inclusion of emerging technology benefits into their existing systems