Corporate Modeler Suite

Version: 10

Casewise Systems

64 Clarendon Road
Watford, Hertfordshire WD17 IDA
United Kingdom
Tel: 0044-(0) 1923-830-300 Fax: 0044-(0) 1923-830-301
Web: www.casewise.com Email: cwmarketing@casewise.com

1. Product Overview

Casewise Corporate Modeler is a repository-based modeling and analysis tool based on Microsoft.Net technology. It supports a wide range of enterprise architecture frameworks and business process modeling notations, approaches, and methodologies. Supplied frameworks include Zachman, TOGAF, DODAF, MODAF, FEAF, and Archimate. By linking organizational, process, IT architecture, and data technology modeling through dynamic object linking, Corporate Modeler enables users to capture and understand the links between people, process, and technology. Table 1 provides an overview of Casewise Corporate Modeler Suite and its various options and add-on components.

Corporate Modeler features a rich and intuitive visual modeling environment designed for ease of use. It enables the automated graphical representation of information using a large selection of tools, including Matrixes, SWOT, risk and sensitivity, performance, impact dependency and gap analysis, ad-hoc querying and reporting, RACI, UCON Compliance Analysis, plus automated generation of Gantt charts, “Magic” quadrants, and Boston Grids. Corporate Modeler also offers sophisticated simulation as standard with the toolkit.

Corporate Modeler is highly configurable, and is designed so that companies can easily customize the tool to support almost any methodology, modeling notation, or framework. The repository is fully extensible and user-definable – supporting rules checking, user-defined objects, properties, and associations. Corporate Modeler ships with the Casewise Framework – a step-by-step guide to creating enterprise architecture models based on the Zachman Framework. In addition, Casewise also offers a large number of pre-built models and extensions so companies can “jump start” their modeling efforts with popular frameworks. Basically, Corporate Modeler users choose from templates, metamodels, and enterprise architecture frameworks, which they then refine as required to meet their specific modeling and analysis needs. Thus, in a sense, one can consider Corporate Modeler as a metamodeling tool whose key features are flexibility and ease of customization and use.

In addition to supporting team development, Corporate Modeler lets you publish models in various formats, including HTML and Microsoft Word, as well as via the Casewise Web Portal, which provides real-time dynamic access and editing of all models and their associated artifacts maintained in the repository via an interactive Web browser.

Casewise also offers numerous add-on facilities to assist companies with their modeling and systems implementation efforts. These include interfaces for importing information into the repository to facilitate automated construction of models based on externally-held data; bi-directional interfaces to third-party tools; language translation facilities; and accelerator frameworks designed to support various enterprise architecture and IT initiatives.
Corporate Modeler is available in two main versions:

- **Corporate Modeler Standard Edition** – a limited version of the product that includes Simulation capabilities; and
- **Corporate Modeler Enterprise Edition** – a comprehensive version that includes multiple modules and extensions, both HTML and Word publishing facilities, AutoModeler, Simulation, Interfaces and Links (to third-party tools), and various models, templates, and frameworks.

### Table 1. Overview of Casewise Corporate Modeler Suite

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Casewise Corporate Modeler Suite</strong></td>
<td>Repository-based business process modeling and analysis tool based on the Microsoft.Net technology. Supports various business process modeling notations, approaches, and methodologies (e.g., FEAf, DoDAf, TEAF, eTOM, etc.) to allow users to define and map visual representation of an organization's strategy, plans, and goals, and the business processes required to support these goals. Tool is extensible to support a wide-range of methodologies and frameworks. Provides a very capable repository that supports team development and interaction, and Web publishing of models. Also has a very intuitive and rich visual modeling environment. Available in two versions – Standard Edition and Enterprise Edition.</td>
</tr>
<tr>
<td><strong>Corporate Exchange Repository</strong></td>
<td>Repository for storing and managing all models and their associated artifacts created in Casewise; provides security of modeling information while allowing multi-users collaboration – including reuse of modeling objects for project/enterprise consistency. Highly extensible – users can create their own object types and add new property types to existing objects, enabling companies to develop their own rich set of modeling notation and corporate standards.</td>
</tr>
<tr>
<td><strong>Casewise Portal/Compliance Activity Management (CAM)</strong></td>
<td>Enterprise tool that allows multiple users access to the Casewise repository via dynamic Web browser. Users can browse Corporate Exchange models and objects by object type, name, and by associations, including filtering and searching to locate specific objects. Users can also access all of the Casewise Best Practices and Compliance models, as well as customer-created enterprise and business models. Other key functionality includes the ability to create new objects and associations and edit object and association properties. Compliance Activity Manager (CAM) enhances Casewise Portal from being a fully functional Web front-end to an organization's corporate data by adding inherent work-flow capabilities to facilitate compliance to best practice standards.</td>
</tr>
<tr>
<td><strong>AutoModeler</strong></td>
<td>Imports information in a range of formats into Corporate Modeler to automatically generate modeling objects and diagrams from existing process and system documentation. Also helps companies gather process knowledge from staff via table-based questionnaires (Word or Excel formats). Once completed by staff, AutoModeler uploads questionnaires into the model, automatically converting the contents into objects and process flow diagrams.</td>
</tr>
<tr>
<td><strong>Interfaces and Links</strong></td>
<td>Assortment of bi-directional interfaces that allow analysts and developers to share knowledge from repositories and diagrams held in different tools including IBM Rational RequisitePro; IBM Rational XDE and IBM Rational Rose; Sybase PowerDesigner; CA Erwin; and Oracle Designer.</td>
</tr>
<tr>
<td><strong>Corporate Publisher HTML/Word</strong></td>
<td>Corporate Publisher HTML generates branded Web sites (from models in the Casewise repository) that are ready for hosting on the corporate intranet to provide a knowledge portal organized along process lines with links to supporting information resources. Supports the Adobe Scalable Vector Graphics (SVG) format for Web publishing graphics, making it easier to navigate around large diagrams. Corporate Publisher Word generates Word documents that feature full diagrams and object descriptions hyperlinked to related parts of the document, table of contents, and full indexing.</td>
</tr>
<tr>
<td><strong>Pre-built Models &amp; Templates</strong></td>
<td>Specific frameworks for use with Corporate Modeler, including SAP R/3 reference models, eTOM, UB Biometric Passport, Retail Utilities Industry (MRAscio), New Electricity Trading Arrangement Model (NETA), HIPAA (Health Insurance), FDA, BASEL II, MiFiD, Solvency 2 (Insurance).</td>
</tr>
<tr>
<td><strong>Simulator</strong></td>
<td>Wizard-driven simulation component offered standard with toolset. Users can configure performance data and include additional variables to simulate complex process scenarios. Allows manipulation of variables (e.g., throughput times, frequency, resource utilization, and costs, etc.) during simulations. Generates animations and detailed statistics for all key process performance indicators.</td>
</tr>
</tbody>
</table>
### Translation Manager

Multi-language manager for automated import/export of modeling objects from Casewise repository for translation into different languages, including French, German, Polish, Russian, Spanish, and English. Automatically exports modeling objects into XML or MS Word documents for translation.

### SOA Accelerator

Provides “mapped insight” into the comprehensive world of SOA standards, offering an overview of the enterprise services model and application development environment within an SOA approach, plus necessary guidance on how to approach, use, and catalog the services available within the enterprise. Bridging the gap between design and operation, the SOA Accelerator utilizes the Casewise BPEL interface in which designs can be transformed into the execution language bridging the enterprise architect and technical architects’ worlds for optimum deployment.

### BPEL Accelerator

Provides integration between Corporate Modeler and leading BPEL execution engines, including Oracle BPEL Process Manager, Microsoft BizTalk Server, TIBCO BusinessWorks, and BEA AquaLogic.

### SAP NetWeaver Accelerator

Tools and methods to accelerate the discovery of existing SAP process designs, thereby providing organizations with a streamlined and cost effective migration path to the SAP NetWeaver environment.

### IT Architecture Accelerator

Portal-based solution encompassing framework and best practices for modeling, managing, and communicating processes and enterprise architecture across the enterprise. Includes roadmap for project planning and tracking; supports automated model publishing and report generation; advanced object search facility; ability to create different views for different audiences.

### Governance Risk and Compliance Accelerator

Solution encompassing framework and best practices for streamlining IT service delivery, support, and management, while ensuring adherence to compliance, multiple regulations, and standards, by implementing ITIL Best Practices.

## 2. Product Architecture

### 2.1 Architecture Overview

Figure 1 provides an overview of the Corporate Modeler Suite architecture. Corporate Modeler utilizes a full 3-tier environment based on optimized technologies for native to databases, and which is designed for interoperability. Corporate Modeler Suite is client-server based. The Casewise Portal is Web-based.

The Casewise Corporate Exchange repository is hosted in a relational database. The product supports MSDE, Microsoft SQL Server 2000/2005/Express, and Oracle Database as repositories for Corporate Modeler. (For more on architecture and scalability see Section 10: Scalability.)

### 2.2 Usability and User Interface

Casewise offers both an easy to use multi-user desktop environment and a new advanced “AJAX” Web-based modeling environment (i.e., Casewise Portal) that requires no client installation. Corporate Modeler is designed to support the general business user (i.e., manager) as well as the more technical analyst and IT user.

**Desktop Environment**

The Corporate Modeler desktop modeling tool (Figure 2) closely adheres to the Microsoft desktop user environment. Features include easy to use drag-and-drop functionality, wizards, intuitive connectors, complete undo capabilities, rules, and consistency checking, simulation, reporting, and publication.

Some of the highlights include intelligent connectors that allow you to create clearer diagrams more easily by automatically finding the best paths to link objects and by auto alignment. A semi-transparent object capability lets you layer objects to create multi-level process and relationship maps. Corporate Modeler also has floating, “auto-hiding” windows. This feature allows modelers to work in an uncluttered workspace, which is especially useful when creating large, complex diagrams.
Figure 1. Overview of Corporate Modeler Suite Architecture.

The modeling environment also allows users to create associations between any defined types of objects by simply dragging one object over another. The entire process is also customizable so that types of associations can be controlled, thereby helping to prevent the accidental and unnecessary creation of unwanted associations.
Figure 2. Corporate Modeler desktop modeling environment.

Figure 3. Diagram Tree.
A Diagram Tree (Figure 3) eases navigation through the drill-down structure of models. Two different views are provided. The first offers a cascading view of diagrams, which is useful for fast navigation between levels of detail. The second expands diagrams to show individual objects and drill-down links. You can even open the properties of individual objects from within the Diagram Tree.

**Casewise Portal**

The Casewise Portal facilitates real-time dynamic access and editing of the Corporate Exchange repository via an interactive Web browser. The portal dashboard environment enables the scheduling and publishing of design changes, plus the editing of models and content; in addition it facilitates access rights control and full publication support. It also supports workflow functionality via email-enabled notification, tracking, scheduling, and escalation functionality. (Casewise Portal is discussed further in Sections 2.3 and 2.5.)

### 2.3 Repository Options/Team Development

Corporate Exchange – the repository underpinning Corporate Modeler – is designed to support customization and detailed version management. The repository provides considerable flexibility. Any change to an object within the repository, or on any of the diagrams, is instantly reflected on all the diagrams stored in the repository. Repository access can be controlled by a manager who can define access rights for potential users. The structure itself is extensible via the Model Explorer GUI (Figure 4), which means that object types, properties, and associations can all be added or changed by the user, depending on his or her access rights to the model, thus enabling companies to develop their own rich set of modeling notation and corporate standards.

The repository can be filtered, sorted partially, and/or completely exported. In addition, an interface enables users to create queries that can be visualized in other reporting tools, such as Business Objects.

![Figure 4. Model Explorer.](image-url)
Multi-User Access/Team Development via Casewise Portal

Casewise Portal is an enterprise tool that allows multiple users access to the Corporate Exchange repository (Figure 5). It enables the scheduling and publishing of design changes, plus the editing of models and content as well as providing repository access rights control and publication support. The Portal environment also supports workflow functionality via email enabled Notification, Tracking, Scheduling, and Escalation functionality.

Utilizing the latest Web-based technologies (i.e., AJAX, etc.), the portal grants users the ability to create, navigate, edit, and review Corporate Modeler objects while providing a central point of navigation for users and a framework for the deployment of other Web-based solutions. Users can browse Corporate Exchange models and objects by object type, name, and by associations, including filtering and searching to find precisely the objects of interest. Users can also access all of the Casewise Best Practices and Compliance models, as well as customer-created enterprise and business models. Other key functionality includes the ability to create new objects and associations and edit object and association properties. Users can also display and navigate Corporate Modeler diagrams while accessing reports on key information held within the Corporate Exchange.

Administrators can restrict user access based on object types and/or individual object names. The Portal also provides the flexibility to audit user actions, including the creation and deletion of objects and the editing of object properties.

Companies can also integrate Casewise Web Portal into enterprise portals such as Microsoft SharePoint and others.
Compliance Activity Manager (CAM)

CAM enhances the Casewise Portal from being a fully functional Web front-end to an organization’s corporate data with the addition inherent workflow capabilities to facilitate compliance to best practice standards.

CAM allows users – typically project managers – to assign tasks to other users in order to meet compliance requirements. The compliance standards are implemented as instances of the Corporate Modeler object type (i.e., Audit Questions).

CAM handles the exchange of messages between project managers and users and uses traffic light color coding to display a task’s status (i.e., approved – green; awaiting approval – amber; and rejected – red). Additionally, CAM retains a chronological message trail for each assigned task, allowing the project manager to assess progress towards compliance.

2.4 Integration with Other Products

Corporate Modeler provides strong integration capabilities and can inter-operate with a number of BPM, BPA, and other modeling environments and applications. These include IDS Sheer Aris, IBM Rational Rose, Microsoft Excel, CSV, XML documents, Microsoft Access databases, and CA Erwin. Extra facilities are also provided for importing from more diagram-oriented applications like BPM tools, including Microsoft BizTalk Server, Oracle BPEL Designer, and TIBCO. In addition, Casewise is continuously working to improve the tool’s interoperability with specific interfaces for process execution via various technology partnerships.

Corporate Modeler can export process designs in Excel format, CSV, XML, Word, PowerPoint, and HTML. It also provides extra support oriented to BPM tools like BPEL and XPDL. (XMI format is undergoing testing).

The Casewise repository can be shared through the standard interface (ICM) or by using BPEL interface. Facilities are also available for inspecting SAP systems and generating models from information contained in those systems.

Finally, Casewise is developing WSDL importing capabilities, and presently the tool can connect user-defined objects that will be connected to the Services Description.

3. Analysis and Process Modeling

The Corporate Modeler toolset provides comprehensive modeling capabilities that are designed to support all POLDAT domains – Process, Organization, Location, Data, Application, and Technology.

3.1 Enterprise and Organization Models

Enterprise Architecture Models

Casewise offers numerous frameworks, templates, models, and guidance that organization can use to jump start a range of enterprise architecture projects using Corporate Modeler. These visualized frameworks provide a “holistic” project management vision that can be modified to meet the user’s requirements. In addition, templates can be integrated and used in other models providing standardized objects types and artifacts, bringing consistency throughout modeling and documentation projects. Moreover, Corporate Modeler is highly extensible, allowing organizations to modify existing frameworks, or create new ones, to suit their specific needs. Accordingly, the toolset ships with the Casewise Framework (Figure 6) – a step-by-step guide to creating enterprise architecture models based on the Zachman Framework.
Available framework models include: Zachman Framework, ITIL Best Practice Framework, ArchiMate Framework, eTOM, CMMI, TOGAF, DOD AF MOD. AF FEAF, COBIT 3.0, 4.0, SCOR, Local Authorities Business Model, NETA, OASIS SOA RM, Everware – CBDI SAE, MRASCO

Figure 6. The Casewise Framework.

Organization Models
Corporate Modeler provides the ability to define and model organizational structures to best support an organization’s business processes. (Total flexibility of organizational object types is supported – roles, responsibilities, competencies, workgroups, shift patterns, swim lanes, etc., are available and easily augmented.) These models visually describe which business processes are performed by each organizational department as well as how organizations report to other organizations and how specific roles report to organizations. Corporate Modeler relates processes to organizational units through the use of swim lanes in a workflow model. You can also analyze the relationships and dependencies among people, process, and technology; highlight inefficient use of resources and applications; and map data entities onto process steps, using CRUD (create, read, update, delete) matrices.

Corporate Modeler also allows the graphical representation of information, including Matrices, SWOT, Risk and Sensitivity, Performance, Impact and Dependency and Gap Analysis, Ad Hoc querying and reporting, RACI, UCON Compliance Analysis, plus automated generation of Gantt charts, “Magic” quadrants, and Boston Grids.

Corporate Modeler allows you to model IT resources in support of business processes (see Section 7).

**Resource and Cost Modeling**

Corporate Modeler allows you to capture information and data related to resources in the form of objects. Resource objects can include organizations, roles, people, equipment, facilities, and systems. You can also define custom objects. Resources can be defined with specific costs and schedules of availability. Resource and costs can also be analyzed using Corporate Modeler’s Simulator (as discussed in Section 3.3).

**Mapping Organization Strategies to Performance Measures**

Strategies, goals, and objectives can be documented and measured – as supported by the Casewise Framework (according to Zachman) that is part of the default Corporate Modeler installation.

Corporate Modeler features a wizard that generates comprehensive Web sites and/or documentation from enterprise models. This portal provides real-time access and visualization capabilities. Via this portal, Strategies, Objectives, Goals, KPIs, CSFs, and other performance measures can be maintained, published, and analyzed.

Portal dashboards can also be tailored to meet different user's requirements. For example, a compliance officer that must monitor and measure the compliance performance of the activities and workflows being executed within the enterprise can control, authorize, and ask for review of the processes, all from within his unique view within the toolset.

Available reference models like the Best Practice Reference Model for ITIL include pre-built ITIL processes and the related KPIs and CSFs.

**Managing Process Portfolios**

The Corporate Modeler toolset offers an integrated lifecycle management capability for the approval and optimization, roll-out, and change management of process designs and architecture components. Comprehensive access rights are implemented with login to the Corporate Exchange repository, and all changes are fully traceable, archived, and auditable.

As already noted, the Casewise Portal incorporates, via email, scheduling escalation and notification capabilities to inform process or project owners (e.g., process, application, interface owners, etc.) that a task or process design needs review, requires updating with feedback or approval, and so on. The process owner responds to the email notification by clicking on the attached email URL, which automatically identifies the process owner. Access is password protected at login and presents the views of process designs to be amended or approved.

**3.2 Defining Processes**

**Defining Processes**

Corporate Modeler lets users graphically map core and supporting processes. An extensive set of process mapping, modeling, and linking capabilities (e.g., swim lane models, event process chains, process hierarchies, etc.) are supported. Different process methodologies and notations are supported, including the BPMN, Rational Unified Process (RUP for UML), and CSC Catalyst.

Enterprise architecture methodologies and notations are supported (e.g., TOGAF, IDEF, ArchiMate, DoDAF, MERISE) as well as Model Driven Architecture (MDA). Interfaces are also available to other
MDA tool vendors, including IBM Rational Rose and Telelogic. The TOGAF framework and the ArchiMate Frameworks are certified through the different groups.

Systems Analysis and Design (SA&D) is supported, and the recommended approach is to use UML and Data Flow diagrams, which are standard functionality in Corporate Modeler.

Corporate Modeler also supports UML’s main models (see Section 7.1).

In terms of Structure and Analysis and Design Techniques, Casewise provides a graphical notation for systems description as well as for its cousin IDEF0 via pre-designed templates/extensions.

Apart from the supplied notations, users can generate their own notation based upon their own methodology.

**Process Information Storage and Integrity**

The Corporate Exchange repository is the primary guarantor of process information storage and integrity because it stores and manages all model elements and provides change/version management facilities and access controls.

Corporate Modeler also supports model/process consistency through its pre-defined modeling languages that provide the rigor for an organization's methodology through model and object behavior rules checking controls.

**Graphical Notations**

Corporate Modeler supports a broad range of graphical notations and graphical model, including proprietary notations, BPMN, and UML Activity Diagrams. Figure 7 shows the BPMN notation in Corporate Modeler. Again, Casewise’s metamodeling capabilities allow organizations to customize or create new notations and models. Basically, this enables the toolset to support almost any modeling notation that an analyst may choose to use. This customization capability is one of the major selling points of the Corporate Modeler solution. (See Section 3.1 for more on Casewise frameworks, models, and graphical notations.)

![Figure 7. BPMN modeling notation in Corporate Modeler.](image-url)
3.3 Subprocesses and Activities

Handling Subprocesses and Activities
Corporate Modeler can represent subprocesses in the form of models nested beneath activities and objects, and provides the ability to drill down from the parent level to get a more detailed view of a process. Users can navigate either via diagram hierarchical drill down, object drill down, or by associations between objects. Users may also navigate via a Tree Menu View decomposition or use the toolset’s Search functionality or its Matrices. Other ways to navigate to a detailed abstraction level is via the toolset’s Web portal dashboard, Boston Grids, Gantt Chart diagrams, and reports.

Defining Activities
Activities in Corporate Modeler are used to graphically depict the sequence of actions or events in a process and show the responsibility of work in relation to an organization, automated system, or even a specific role. Users can define activities and events in a process starting from the top parent level down, or from the bottom up.

Each process or activity box can be opened, revealing a window that allows the user to document a wide variety of information about the activity. For example, the user can indicate who is involved in the process, what is produced, costs of units of work, business rules that apply to decisions, and so on. In addition, if sufficient information is entered about each of these activities on a single process diagram, the user can run simulations of a business process using Corporate Modeler’s Simulator (See Section 3.3).

Documenting Decision Rules
Corporate Modeler supports various means for documenting decision rules. Manual, predefined, and statistical decision paths can all be predefined. Boolean logic patterns and rules may also be implemented using Connector sets. In addition, “random” behavior can be entered into the system.

Probability Curves can be defined as one of the following types: Flat, Triangle, Normal, Poisson, or Custom Calendar-Based.

Rules Entry
See previous.

Activity Costs, Resources, and Time Data
Corporate Modeler includes a simulation component for simulating and analyzing costs, resource utilization, and time issues.

3.3 Simulation

Simulation Capabilities
The Corporate Modeler Simulator is included, standard, with the toolset. Simulator is wizard-driven, allowing you to configure performance data and include additional variables to simulate complex process scenarios. As shown in Figure 8, the user enters core information, such as the length of time each individual step in a process takes and the level of resources required. Users can also include additional variables to simulate complex situations. These variables include throughput times, resource utilization, and cost, as well as special distributions to trigger frequency and formulas to measure fluctuations in work rates. Detailed statistics are provided for all key process performance indicators, including: Throughput Performance, Queuing Times, Handling Time, Resource Utilization, and Direct and Indirect Costs Concurrency.
“Goal Seeking” capabilities allow the user to set objectives and KPIs, and the simulator will adjust the metrics to identify possible solutions.

Consistency checks validate model integrity at the start of simulation, advising users on where data is missing or where the model is incorrectly structured.

Calendars give Simulator the ability to vary values based on time. Break points can be used to break from the system always at the same time.

Process animation (Figure 9) enables users to visually locate bottlenecks, duplication of work, and inefficient use of resources. Users can also accelerate to simulate long periods of time in a matter of seconds.

The toolset allows different scenarios to be defined and results saved and compared against multiple simulation scenarios. Output from the simulations can also be exported in Excel file formats.

**Analytic Capabilities**

The Simulator provides advanced process analysis tools including:

- **Grapher** – produces graphs highlighting the fluctuating levels of activity in each of the processes being simulated. Users can run spin controls to alter the values used by a simulation while it is running. This technique helps users rapidly identify the values that eliminate bottlenecks from a business activity.

- **Analyzer** – locates the variables within a process that are crucial to achieving the greatest improvement in a process and, ultimately, helps an organization optimize them.

- **Financial** – enables users to link process simulations to Excel spreadsheets and workbooks so they can visualize the benefits of improving business processes on bottom line costs. In addition, the toolset stores Six Sigma related performance data and Risk Analysis data objects.

Tool flexibility can facilitate Lean Value stream analysis. You can also export results to leading data analysis tools like SAS and SPSS (as well as Microsoft Excel).
Real-time Data Utilization
Users can utilize real-time data to influence the running simulation. This is accomplished by importing data directly from Excel.

Model Distribution and Simulation on Enterprise Networks
Corporate Modeler can distribute models created within the publication across a network.

Statistical Fit/Data Analysis
Simulator generates detailed statistics for all key process performance indicators during simulation (See above).

Capture and Reporting of Simulated Metrics
Corporate Modeler provides an open reporting engine that allows you to query multi dimensional domains and analyze the relationships and interaction points.

4. Business Process Methodologies

4.1 Business Process Methodologies
Corporate Modeler supports a range of process methodologies, including the BPMN, Rational Unified Process (RUP for UML), and CSC Catalyst. In addition, the toolset and repository are highly extensible, in effect, allowing it to support almost any known or custom methods.

4.2 Six Sigma Support
Six Sigma is supported, based on DMAIC/DMADV method. Corporate Modeler can capture an import operational data. Using AutoModeler, you can calculate the defects and number of opportunities.

Figure 9. Animated simulation in Corporate Modeler.
5. Report Generation and Document Management

Corporate Publisher is a wizard-based publishing component that generates comprehensive HTML Websites or Microsoft Word documents from Corporate Modeler models. Two versions of Corporate Publisher are available – Corporate Publisher for HTML and Corporate Publisher for Word.

**Corporate Publisher for HTML**

Corporate Publisher HTML transforms models into hyper-linked Web pages, preserving all drill-down levels and associations between metamodel objects. It also incorporates StyleSheet Builder – an easy-to-use utility used to define look and feel of output without requiring HTML skills.

**Corporate Publisher for Word**

Corporate Publisher Word features a wizard that generates Word documents from Corporate Modeler models (useful for creating reports or process procedure manuals, etc.). Generated Word documents feature full diagrams, object descriptions (all hyperlinked to related parts of the document), table of contents, and full indexing. Corporate Publisher Word also supports Word templates, allowing users to format their documents according to corporate styles.

For both HTML and Word, users can specify specific information to be published from their model and, as well, as how it is presented. These specifications can be saved as “Publication Sets” for use with future publishing needs.

**Casewise Web Portal Publishing**

The Casewise Web Portal also supports the scheduling and publishing of design changes, plus the editing of models and content as well as access rights control and publication support. Casewise Web Portal also connects to third-party document management systems. (This is a standard interoperability feature of the toolset.)

In October 2006, the Royal Bank of Scotland – a large Corporate Modeler user – was awarded first prize in the category for on-line documentation by the Institute of Scientific and Technical Communicators (ISTC). (The ISTC oversees the world of documentation in much the same way as the Chartered Institute of Banking oversees the Banking community.) This recognition of Corporate Modeler’s publishing capabilities serves as independent verification of the toolset’s excellent publishing capabilities [http://www.istc.org.uk/Events/Conference/Papers/2006/RBS.htm](http://www.istc.org.uk/Events/Conference/Papers/2006/RBS.htm).

6. Development Environment

6.1 Language of Tool

Corporate Modeler is written primarily in a combination of C# and C++.

6.2 Product maintenance, and New Versions

Maintenance is provided to customers who have subscribed to Maintenance and Enhancement services. Customers have the rights to software enhancements/updates. Generally, there are between 1 and 2 new releases per annum.

7. Software Modeling and Code Generation

Corporate Modeler allows you to model IT resources in support of business processes. The toolset fully supports Data Warehouse modeling, Star Schema, Snowflake, Hierarchical, Network, Associative, and Data Flows – All can be modeled.
Information Architecture is supported via Interaction Flow Diagrams, Mental Models, and Content Models plus all cartographic association mapping.

Conceptual Data Modeling, Logical Data Modeling, Physical Data Modeling, Systemic Entity Relational Diagrams, and Normalization of Relational Databases are provided within the toolset.

Corporate Modeler also supports physical database model generation with SQL optimization via most low level data modeling applications such as Sybase PowerDesigner, Erwin, and Oracle Designer. The toolset can also automatically collect data models from these database dictionaries. In addition, by using the AutoModeler module to load data into the repository, you can import other database dictionaries into the tool.

**7.1 UML Model Generation**

Corporate Modeler Suite fully supports UML's eight main models:

- Use Case diagrams
- State diagrams
- Sequence diagrams
- Deployment diagrams
- Component diagrams
- Collaboration diagrams
- Class diagrams
- Activity diagrams

Models may also be imported from or exported to third-party object-oriented design (OOD) tools.

**7.2 BPEL Generation**

Corporate Modeler includes a BPEL interface that provides full support for XPDL. (The company is currently testing the XMI format standard used by BPM tools.)

Corporate Modeler supports native integration with Microsoft BizTalk Server, Oracle BPEL Designer, and IBM WebSphere. Casewise BPEL generation can also generate the Web Services Stubs needed to make the BPEL export fully functional in an execution environment. These facilities and models are part of the Casewise SOA Portfolio planning system. Web Services forms one of the key interfaces to access the internal functions of the Corporate Modeler Suite.

**8. Templates and Frameworks**

Casewise offers a number of specific frameworks for use with Corporate Modeler, including

- **SAP R/3 reference Models** (fully visualized) for all industries (e.g., Automotive, Finance, Banking, Retail, etc.)
- **eTOM** for the Telecom industry – Casewise is the custodian on behalf of the TMF of this model, and members of the TMF project team that enhances this model all use Casewise software.
- **United Nations Biometric Passport** (ILOC185) – Casewise is the Custodian on behalf of the United Nations of this model; members of the project team that enhances this model all use Casewise software.
- **Retail Utilities Industry** (MRAcso) – Casewise is a contributor to this model; members of the project team that enhances this model all use Casewise software.
- **New Electricity Trading Arrangement Model** (NETA)
• HIPAA – Health Insurance
• FDA – Pharmaceuticals
• BASEL II – Banking
• MiFiD – Financial Services
• SCOR – Supply Chain Organization Reference Model
• Solvency 2 – Insurance

Casewise provides some extensions free of charge, and they are available via download from the company’s Website. Additional full models are available for cost.

9. Systems Administration and Security

Corporate Modeler supports systems administration and security through various components and facilities, with the Casewise repository providing version management capabilities and user access rights to models and their associated artifacts.

Lifecycle management is supported via the repository, too. This includes granular versioning, check-in/checkout, and detailed graphical views. Lifecycle management is also supported by the Casewise methodology as well as through other specific architecture methodologies. In addition, lifecycles can be visualized as object visualization diagrams as well as Gantt Charts and Boston Grid diagrams.

10. Scalability

As shown in Figure 10, Corporate Modeler utilizes a full 3-tier environment based on optimized technologies for native to databases; it is an environment that is designed for interoperability. Both load balancing and clustering are supported. Round Robin Method is supported.

11. Platforms

At design/runtime. Corporate Modeler supports Microsoft Windows 2000/XP/2003/and VISTA platforms. The repository can be hosted on MSDE, SQL Server, SQL 2000/2005/EXPRESS, and
Oracle 9.2.0.1 and up databases. These can be deployed on Windows, Linux/SuSE Enterprise/Redhat Enterprise, and Unix HP and Unix Solaris Platforms.

12. Pricing

Stand-alone versions of Corporate Modeler start at US $2,500; multi-user versions begin at $5,000. Concurrent licenses start at $8,000. The Web Portal capability is $75,000. Models and frameworks start at $2,000.

Maintenance cost is 17.5% for software products. (Frameworks and compliance models are free of maintenance charges.)

Pricing for Casewise’s hosted compliance as a “Service” (CaaS) offering is negotiable based on transaction volumes and usage.


13.1 Company Background Information

Casewise was established in 1989, and is a market leader in the provision of software and consulting solutions to over 3,000 major global organizations for business process modeling, enterprise architecture, IT Governance, and SOA modeling solutions. With a customer base consisting of Fortune 1,000 corporations spanning all industries and market sectors, Casewise assists companies who are looking to optimize their internal processes in response to higher competition, deregulation, mergers and acquisitions, e-business transformation, and globalization. Casewise is privately held.

Casewise has offices in Philadelphia, London; Paris; and Frankfurt, and a network of over 200 resellers and affiliates covering 50 countries providing the company’s software along with locally delivered training and consulting.

In addition to an extensive client base, Casewise has partnered with various management consulting firms, which have embedded their own in-house methodologies into Casewise’s Corporate Modeler toolset. These include EDS, PWC, Logica, PA Consulting, Business Connections, Deloitte, SAIC, KPMG, CSC, and Bearingpoint.

Commercial and public sector customers include

- Pharmaceuticals – Pfizer, Novartis, Schering-Plough, and Wyeth.
- Technology – Siemens, Alcatel, Philips, LG, Samsung, and Sony.

Casewise is active directly and via its global resellers in the US and Canada; Central and South America; Europe, including Eastern Europe; the Middle East and Africa; and Asia, the Pacific Rim Countries, and Australia.

Casewise Software is available in: English, German, French, Spanish, Russian, Polish, Italian, and Japanese.
13.2 Positioning

Casewise has positioned Corporate Modeler Suite to support a range of EA modeling and BP change activities, including

- Enterprise architecture modeling and analysis
- Business process modeling and analysis, redesign, and improvement
- IT architecture, IT support/automation activities
- Human performance improvement initiatives
- Compliance and risk management
- Development of measurement and management systems
- Detailed process modeling and analysis (simulation)

Casewise Corporate Modeler has emerged as a very popular EA and BP modeling tool because of its ease of use and high degree of extensibility – qualities that make the tool very attractive to both end-user organizations and consulting firms. Add to this, Casewise’s large number of industry and process frameworks and other extensions, and it is no wonder that the company has been positioned by the major analyst firms (e.g., Gartner, Forrester and Butler Group, etc.) as a “leader” and is described as an “Innovator and Pioneer” of advanced business process modeling tools. Casewise is also seen as “The first vendor to invest heavily in support for industry and process frameworks.”

13.3 Product Training

Training is recommended for expert users in roles that require a better understanding of the Corporate Modeler toolset's advanced features (i.e., model and system administration), or for those specialists requiring advanced simulation, publishing, or BPEL generation training. These courses run between one to three days in duration.

General users typically do not require training and are quite capable of using the toolset effectively right out of the box. They can also access modules of their interactive on-line training material as well as the toolset's considerable Wizards and “getting started” tutorials supplied within its Help System to assist with specific areas of understanding.

Classroom, on-site, and Web-based training is also offered. Standard training and customized packages are delivered by Casewise's Services team. Casewise also convenes periodic seminars, user forums, and conferences. These typically involve "lab" environments where customers have direct access to Casewise experts who can advise them on any specific requirements they have for the product.

Services consultants have a wide range of backgrounds, both technical and commercial, that are leveraged to provide optimal solutions to customers. Trainers and consultants have personal accreditation relating to training, best practices (ITIL, ISO, etc.), IT governance (BCI, ISACA/CobIT, etc.) that combine with relevant project exposure to ensure specific and broad-based expertise for their clients' programs. The services organization is distributed between EMEA region and North America. Additional channels for implementation and training services are provided through partners and resellers.

13.4 Business Process Consulting

Casewise provides a comprehensive program of product and methods training in the enterprise architecture and business analysis space. There is also support in a coaching and consultative fashion of feasibility studies, proof-of-concept phases, and pilot implementations specifically covering aspects of business analysis and process design. They offer a product related coaching on their Simulation tool and also short-term consultancy assignments with a standard or custom program of covering the client specific analysis and simulation needs. This training, coaching, and consultancy is geared towards
enabling clients to undertake the relevant and efficient analytical groundwork, customization of model content, and development of scenario-based simulation capabilities that deliver the required business analytical depth and the desired output of simulation efforts within our toolset.

14. Case Study: Department of Health / National Health 18 Week Pathway Case Study

The NHS today is facing a key strategic challenge to deliver access targets and improve patients’ experiences within healthcare. The service is now about to embark on the delivery of one of its most ambitious projects to date, the 18 weeks pathway.

The Government has set the target, that by the end of December 2008 no one will have to wait more than 18 weeks from GP referral to the start of hospital treatment. For the first time, this includes all the stages that lead up to treatment, i.e. outpatient consultations, diagnostic tests and procedures. However, many patients will be seen much more quickly. This maximum patient journey will transform the way that the NHS operates, dramatically improving the patient experience. For the first time in the history of the NHS, patient journey times will be measured as a whole, including diagnostic and outpatient appointments that are currently largely unmeasured. The overall objective being that each pathway will have an 18-week timeline for every specific condition; from a sore throat through to surgical procedures/operations. There are nearly 40 pathways in total, each one focusing on a specific medical specialty.

Since the spring of 2005, 21 NHS pilot sites have been working in conjunction with Department of Health in a consultative exercise focusing on the patient and operational implications of 18 weeks, identifying the challenges in achieving the target, and defining the positioning for the delivery planning process. Clinical, managerial and technical specialists within the NHS were consulted and asked to provide feedback and produce data on current waiting times. After consultation proposed principles and definitions for the 18 week patient pathway were produced.

In May 2006, the Department of Health published ‘Tackling hospital waiting: the 18 week patient pathway - an implementation framework’. This document included the final set of principles and definitions that address central issues such as clock start and stop times for the patient journey and the most efficient ways to measure and manage the new pathway.

As well as finalizing the principles and definitions for the 18 week patient pathway, this framework explains the nature of the challenge, sets out a high-level implementation plan and the timetable in which to achieve it. Most notably, it highlights the key actions and objectives for all those involved in delivering the pathway and ensuring success:

- Enable measurement of the whole pathway, from referral to treatment and the management of patients through the entire journey.
- Reduce waiting and clearing times for certain specialties and diagnostic tests.
- Resolve potential shortfalls in outpatient and diagnostic activities that are required to reduce waits to 18 weeks.
- Ensure the 18 week pathway is a key feature of the changing health service.

The changing NHS environment and its financial position presents new levels of challenge in developing and deploying the 18 week patient pathways. Due to the current situation, the ability to highlight and deploy cost-effective solutions for reducing waiting times is critical. In addition, manpower
along with pace and organizational change is a key element which needs to be defined and addressed in order for the NHS to successfully achieve the 18 week pathway.

There are significant benefits that will be realized from the program and these are focused mainly on the waiting times and performance measurements. Patients will benefit from shorter waiting times and receive the most appropriate treatments. In terms of delivering services, commissioners will be accountable for performance through contracts with providers and these providers will be managing an integrated patient pathway. These benefits will be realized from the re-design of patient pathways coupled with reform of clinical leadership. It is critical that the pathways deliver these benefits, as failure to achieve will impact the NHS in terms of costs and poor service experience to patients and ill health or death. These risks are already apparent in the NHS with high media coverage. A high profile programme failure will increase the focus on the negative impacts and increase pressure on an already weakened system.

However, achievements to date include the clear definition of principles and definitions. The programme has also delivered a set of national 18 week commissioning pathways for twelve medical specialties. These national pathways give the ability for Primary Care Trusts (PCT) to start thinking about their local pathway requirements (i.e. GPs, clinical, providers), potential impacts and timelines. Each PCT will be responsible for ensuring that the 18 week pathway is delivered for local patients. This gives a unique opportunity to PCTs to innovate and re-design primary care and commissioned services. The PCTs will gain significant benefits such as reducing costs and most importantly realize improvements for patients.

The challenge for the PCTs will be to consider in detail how they deliver the services in each specialty as mandated by the programme. This not only requires possible re-design of processes, procedures and operational change but facilitation between GPs, clinics, service providers and clinicians. There are also many touch points, the main one being the referral process from Primary Care to Secondary Care. Overall, the impacts are vast in terms of people, processes and technology. The impacts also being imposed are around measurement processes where in the past the focus was on stages of treatment to now managing a patient’s entire pathway or journey. Systems will need to be deployed to measure the complete referral to treatment pathway.

Approach
In East Kent the local PCT and Hospital Trust are working together to be early achievers of the 18 week pathway. Since March 2006 the health community has been part of the Pioneer group developing measurement of the pathway and testing and understanding the principles and definitions. In February 2007 East Kent Hospitals NHS Trust were one of thirteen Early Achievers announced by Tony Blair.

“The health community had gained a lot of understanding through measuring patient pathways and it was clear that there was great benefit for patients by implementing these shorter waiting times as soon as possible.” Tracy Rouse, 18 Week Project Lead, EKHT.

East Kent Hospitals NHS Trust has been active in the pathway work and is seen to be at a pioneer status as well as an early achiever. One of their objectives focusses on developing and piloting a more clear and user-friendly representation of the national and local pathways. This is critical as the pathways will be used by GPs whose emphasis is on simplicity and reduction of workload. In search for such a solution, their focus was to find an enabling technology to achieve a unique and re-usable solution that will expedite the pathway development activity and pathway use.

Solution
Acknowledged as an established market leader and earning the highest score for its modelling solutions by independent analysts, East Kent Hospitals NHS Trust identified the Casewise Corporate Modeler tool set as an enabling technology. East Kent Hospitals NHS Trust were also aware of Casewise’s track record of enabling organizations to set-up, design, develop and deploy business modelling and process
improvement solutions using the Casewise tool sets. The partnership between Casewise and East Kent Hospitals NHS Trust was thus formed focusing on a pilot project aimed at developing a number of pathways and testing the approach using the Casewise tool sets.

The pilot encompassed a number of activities over a 2 month period including tool set training, a delivery workshop focusing on pathway processes, information architecture and process mapping. The Casewise consultancy model which is very much based around the concept of knowledge transfer enabled the East Kent team to quickly evolve the key skills and take ownership of development.

The solution proposal integrated best practices, methods and Casewise tool sets, namely Corporate Modeler, Automodeler, Simulator and Corporate Publisher. The best practices and methods enabled the clear definition and representation of the pathways aided by the functionality of the tool sets.

Corporate Modeler provided the foundation to develop a pathway framework with strong focus on customization and representation of process information both graphically and textual. The tools ability to facilitate maximum re-use of processes and information enables a reduction in development time. This was helped by Automodeler, which enabled the fast population of information into the pathways using MS Word or MS Excel as a source. Due to the customization abilities of the tool set, additional features on the pathways were created such as including references (hyperlinks) to evidential databases and the NICE (National Institute for Health and Clinical Excellence) guidelines. This would enable the users to access vital information directly from within each pathway. Another design element was the integration between MS Word to display and edit referral forms that GPs would use in order to provide them a seamless flow of operational processes.

Current national pathways that have been developed and distributed do not have these capabilities and most importantly the East Kent NHS Trust pathway now has very clear flow of processes, information look and feel. This was achieved by using the Corporate Publisher tool which gave East Kent NHS Trust the ability to publish the pathways in HTML (Hypertext Mark-up language) or as a MS Word document. Due to the requirement of clear representation of the pathways and the usability requirements for GPs, the HTML output was the best method. The publication consists of a number of high-level entry points (e.g. Dashboards) representing each of the medical specialties and pathways within these areas. This now grants a user the ability to navigate through the pathway framework easily and drill-down into specific pathways and information as required. Corporate Publisher also accommodates easy customization such as corporate branding, which is of key interest to the trust, as internal staff and partners such as GPs will use the pathways.

An additional opportunity realized is the possible integration with current electronic patient record systems that are widely used by GPs, clinicians, medical centres and pharmacies. The integration will mean that users can use the pathways and the operational systems seamlessly allowing users the ability to access and update patient records at specific points within the pathway.

The pilot project deliverables has now created a strong foundation for East Kent Hospitals to begin planning the development of local pathways which are specific to their processes and procedures. This decision is steered by fact that the pilot has tested the concepts of pathway development and presentation using the Casewise tool sets. The ability to re-use the templates and information expedites this development activity. The focus will also be on operational impacts of new and re-designed processes. Key to the re-design and impact analysis is the Casewise Simulator tool which enables the pathway to be simulated with specific data sets in order to test “what if” scenarios. These scenarios for East Kent Hospitals are focused on capacity, resource and costs. The Simulator plays an important role in facilitating operational decisions and helping to plan the overall change management when the local
pathways are deployed. Change management for the organization will be focused on people, processes, data and technology which are at the heart of the Casewise framework.

Results
The pilot project has, in a short space of time, demonstrated the capabilities and flexibility of Casewise tools and how they are able to add significant value to East Kent Hospitals NHS Trust activities regarding the 18 week pathway project. The pilot has also focused on the benefits, which are critical in obtaining buy-in from stakeholders within the PCT.

The overall Casewise solution enables the realization of:

- 3D visualization of East Kent pathways
- Ease of use – easy, flexible and efficient process mapping helping to reduced manual and complex process documenting activities.
- Re-usability of common Pathway processes, data and external information – forms, metrics etc..
- The ability to link customized processes, data, resource and technology components.
- HTML representation of pathways enabling clear navigation thorough processes, decision aids, data and external links/references.
- The ability to validate Pathways by using simulation – ensuring process, resource and technology optimization, aid decisions and change management.

The approach and published pathways using the Casewise toolset have been reviewed by many of the key stakeholders, including GPs and Hospital clinicians. Feedback has been very positive from the board, which views the pathways as being very clear, accommodating user friendliness compared to other pathway representation attempts. In addition, the positive feedback encompassed the achievement of a balance between simplicity and accuracy of the information represented on the pathways. GPs are also very keen adopters due to the additional functionalities such as embedded referral forms, look & feel, HTML publication, usability and flow of processes on the pathways.

“It is exciting that we can present the pathways in such an easy to understand format. My colleagues across East Kent have welcomed this step forward as innovative and simple to use.” East Kent GP.

The East Kent Health Community now has the highest buy-in for the Casewise enabling technology and approach. The long-term goal of designing, developing and deploying the local pathways is now clear and achievable. The expected results have been realized by the benefits that have been evident.

These overall results for East Kent are:

- The fast tracking of East Kent’s customization and adoption of Pathways
- The development of frameworks and methodologies to increase further pathway development, awareness and deployment
- Expedited stakeholder buy-in and support
- Central access and visualization of East Kent pathways
- An enhanced understanding of the Casewise toolset and training activities for Pathways
- Improved communications with external touch points – e.g. GPs, clinicians

These expected results will now help facilitate the project in developing and deploying the remaining pathways. Going forwards the results will help aid the re-design and optimization along with the practical use by users such as GPs and staff within the PCT.
The next steps are focused on promoting the deliverables and gaining further feedback from a diverse user community. This will mean that the project will be able to accommodate further user requirements in terms of customization, look & feel and usability. The Corporate Publisher tool set will be pivotal in achieving the optimum representation of the pathway framework.

The Casewise and East Kent Hospitals NHS Trust partnership coupled with the pilot results has set a new standard for the 18 week patient pathways. This pathway standard is now firmly set by East Kent Hospitals NHS Trust, which is currently the only one nationally. The Casewise tool set and approach has clearly placed East Kent in an exceptional position both locally and nationally.

15. Company Offices

**Casewise Systems Inc.**
100 Century Parkway
Mount Laurel
New Jersey, 08054  USA
Tel: +1 (0) 856 380 1400
Fax: +1 (0) 856 380 1499

**Casewise Limited**
64 Clarendon Road
Watford
Hertfordshire
WD17 1DA
United Kingdom
Tel: +44 (0)1923 830 300
Fax: +44 (0)1923 830 301

**Casewise Belgium**
Casewise Systems Belgium
Pegasuslaan 5,
1831 Diegem
Brussels, Belgium
Tel: +32 (0) 2 709 29 21
Fax: +32 (0) 2 709 222

**Casewise France**
Casewise Systems France
17 Square Edouard VII
75009
Paris, France
Tel: +33 (0) 1 53 43 93 73
Fax: +33 (0) 1 53 43 93 93

**Casewise Germany**
Casewise Systems Germany
Frankfurt Herriot’s
Herriotstrasse 1
60528 Frankfurt
Germany
Tel: +49 (0) 69 677 33 414