



Modeling and Simulation of Complex Problems

Planning and decision making under the conditions of uncertainty and complexity require new thoughts and instruments. In cooperation with XJ Technologies, FICO Germany completes Siron® Business Intelligence Suite with the most innovative tool worldwide for modeling, optimization, and simulation of complex problems. You may model multi-layered challenges of the most varying type and integrate the results in your company's planning and decision-making process.

Decision Support for Complex Problems

Because of their complexity, many questions that arise in organizations can no longer be answered by the classical instruments for planning and decision-making support. Too manifold are the influence factors that affect a company. With AnyLogic you can understand and model the relevant complexity of a problem and, on the basis of that, simulate scenarios and the effects of various strategies of action. It enables planning and decision making in complex systems in an entirely new quality.

Graphical Modeling of Cross-linked Systems

Through graphical modeling of complex problems the business environment and its relations become transparent. Experts can contribute with their knowledge to the aspects that determine and influence a specific problem and discuss the structures supported by visualization. Relations between the factors can be quantified and the system model calibrated and tested automatically using historical data.

Optimization of conflicts of objectives

In complex situations it is necessary to tackle conflicts of objectives. On the basis of the developed models conflicts of objectives can be identified and considered in the decision-making process.

Though the integrated optimization modul OptQuest™ influence variables who optimize one or more target figures of the decision-maker can be detected.

Overview of the Customer Benefits

- Graphical modeling, simulation and optimization of entrepreneurial problems
- Integrated system dynamics, process and agent-based modeling in one tool
- Flexible deployment, from support in strategy creation to operational planning
- Visualization of the system dynamics through customizable charts and animation
- Creation of worst case or best case scenarios
- Monte Carlo simulation and sensitivity analysis
- Optimization runs for decision-making support
- Simple connection to existing data stocks and reporting tools
- Transfer of the simulation results to budgeting and to middle and long-term planning
- Calibration of models with historical data
- Flexible use through creation of standalone Java applets and applications
- Integration with Siron® Business Intelligence Suite

What-If Simulation

Based on these simulation models, you can develop and simulate various environment scenarios and the effect of possible actions. A powerful library helps you to design user interfaces to enter scenarios, create user-defined animations, and visualize the results of the simulation. Furthermore, you can store scenarios and compare them with the simulation runs of other scenarios.

New Dimension in Strategy Development

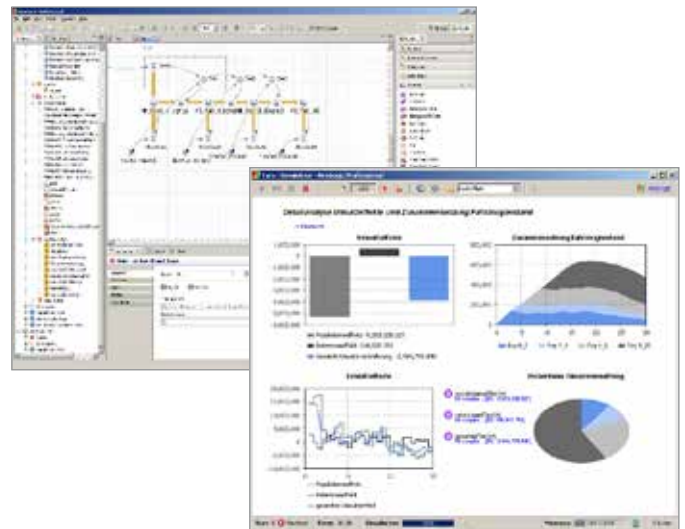
Modeling and simulation with AnyLogic enables you to demonstrate the possibilities to the management and to assess the efficiency of alternative strategies. By doing so, all participants are sensitized to the repercussions and „tipping points“ of the model and develop a feeling for the relevant quantities of the company’s future success. Thus the process of strategy development is accelerated and the management disburdened.

Higher Planning Quality Even in Dynamic and Insecure Environments

Through simulation, current events and developments are directly integrated in your plans. Its effects can be analyzed immediately, and the simulation results can be considered in budgeting, forecasting, and in mid-term and long-term planning. Instead of being a vexatious ritual exercise, all participants are stimulated to intensely deal with the current factors involved and the company’s future development.

Your Company’s Future Success is Based on the Right Decisions Today

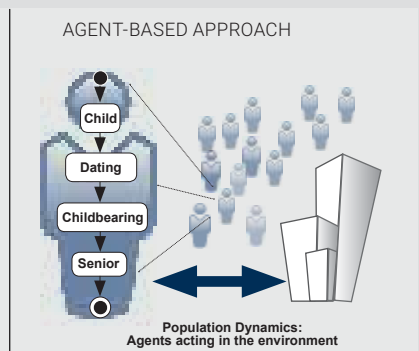
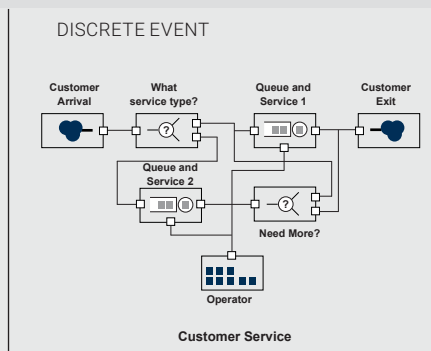
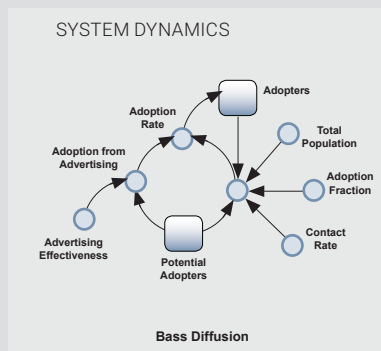
Entrepreneurial decisions only show their full effect in the future – be that for investment decisions, the design of production and business processes, the introduction of further product lines, or when entering a new market. With AnyLogic you can simulate the effects of today’s decisions without any risk; and you get immediate feedback on the consequences of the chosen strategy.



Selected Fields of Deployment

Due to the integration of different modeling approaches, the fields of application for AnyLogic in terms of modeling, simulation, and optimization are almost unlimited. Here are some examples:

- Strategic management and scenario analysis
- Marketing (market and competitor analysis)
- Corporate finance and investment assessment
- Production and business processes
- Deployment of staff and resource planning
- Supply-chain management
- Inventory and distribution policy
- Transport and fleet management
- Asset management
- Business simulations for educational purposes



SYSTEM DYNAMICS is a method for holistic modeling and simulation of complex and dynamic systems. From the bird’s eye view, the environment of complex problems can be perceived, modeled and simulated along with all its relations. **SYSTEM DYNAMICS** is especially used for simulations of strategic problems. The **DISCRETE EVENT**-approach allows you to model complex problems as a sequence of different results. It is mainly used to optimize the simulation of business and production processes. Using the **AGENT-BASED APPROACHES** you simulate the behavior of individual decision-making units (individuals, households, companies, states, etc.) and their interactions. The behavior of the system results from the interaction of a variety of agents. This approach is suited to model strategic and operative tasks, since it links the micro level (individuals) to the macro level (the system behavior).