ACTsolutions®
Analytics and Control Technology

Worldwide
Simulation Alliance
Executive Decision Support

•OPT Net

Optimization of the distribution networks
and supply chain design.
Optimization of the resource allocation
within the territory.

Redesign the distribution network?

Where locating the warehouses?

How many warehouses?

Multi-level complex networks?

How to distribute resources in the geographical area?

OPT Net helps take due actions straight, with flexibility.

Take decisions objectively and at best!

The best technologies to support decisions!
Highly skilled engineers with a great theoretical knowledge and a strong every-day experience on complex processes.

Specialists in innovative projects.
Why running risks? Contact us!

When does OPT Net prove to be useful?

OPT Net is useful whenever you have to deal with geo-localization of hubs, factories, warehouses, transit points, point of sales and resources. It's useful whenever you have to determine exactly the best place where serving the demand points from. It's useful whenever resources (such as patrols or devices) have to be located on the territories. It's useful when designing complex multi-level networks.

How is OPT Net usually used?

Design Usage

OPT Net is usually fed with a set of data, which form the study scenario. The data describe the flows, resources, the needs to be met (eg. demand). Further, the constraints to comply with are to be given. In output, OPT Net gives the best assignment (of resources on the territory, of points of sale and warehouses, of warehouses and factories, etc). OPT Net can also be used combined with Arena and Simio to simulate the network. In this way we combine with great advantage the optimization approaches with the stochastic and dynamic simulation techniques for a correct and complete strategic analysis.

Operative Usage

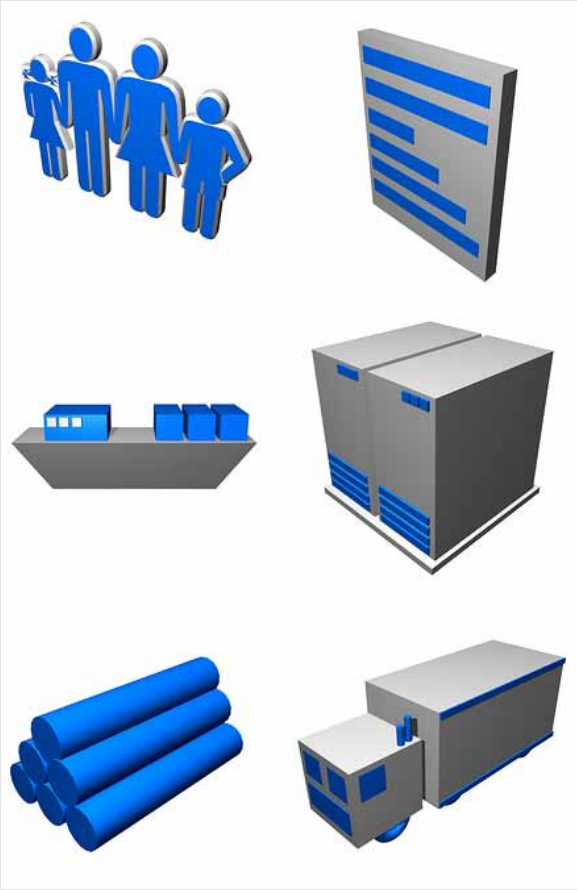
OPT Net is often used in real-time to support day-to-day operative decisions, such as, when fixing the source the SKU have to be delivered from, if more alternatives are possible.

Main Features

Minimizing ogjectives:
- operative costs
- costs of investments
- stocks
- supply time
- use of resources
- mix of dedicated objectives

Constraints of capacity:
- productivity
- stock
- handling
- transportation
- generic constraints of compatibility

Peculiarities:
- automated functions of geo-referencing
- projection on map of the solutions
- possibility to consider factors of risk



What is OPT Net?

OPT Net is an optimization tool designed to:
- support the location of warehouses, factories, point of sales;
- distribute resources on the territory;
- combine at best the points of demand (e.g. points of sale) with the source of supply (e.g. warehouses and points of sale).

OPT Net helps identify the optimal solution and allows the comparison and simulation between different solutions.

OPT Net for the Logistics

OPT Net allows to dimension the distribution networks at best. Different scenarios can be assumed which OPT Net processes, selecting the best, based on the given objective.

OPT Net determines the optimal assignment of the points of demand to the points of supply, in full compliance with production and receptive capacities. The scenario can be simulated by Arena® or Simio. OPT Net can study the costs associated with the nodes of the distribution network.

OPT Net for the assignment of resources within the territory

With OPT Net you can assign areas to visit to sellers or areas to control to patrols. In these cases OPT Net allows to determine the optimal assignment, that is, the best use of re-sources while meeting the existing constraints.

Amongst these constraints, OPT Net can easily manage: the skills of resources, the compatibility between resources and services, the preferences for pre-assignment.
Arena® or Simio can be used to simulate the various scenarios successfully.

Normally a distribution network is dimensioned for the future. Therefore, developing elements and risk factors are to be taken into due account.

In some cases, a well-structured distribution network allows to save even million of dollars/euro and to meet the service levels requested.

Technology

Best Tour is a Java-PURE application designed and implemented with a SOA approach.
The system architecture allows its use as an optimization library within other applications.
Best Tour can exploit the parallel computing on multiprocessor architectures with a 64-bit technology.

Database: ORACLE, MySQL, SQL Server, DB2. Integration in ERP.

ACT Solutions in key-words:

- Simulation, Optimization, Forecasting and Control
- Algorithms and models
- Engineering and decisions sciences
- Advanced planning and scheduling techniques
- Management and optimization of fleets and transportation
- Optimization of warehouses
- Optimization of production
- Optimization of networks and supply chains
- Optimal location (plant, warehouse, points of sale, resources)
- Forecasting of demand
- Revenue and trade optimization

FAQ

Q: What are the inputs OPT Net require?
A: Typically, they are data about the demand (orders) and the geographical information (address).

Q: Can OPT Net be used with a simulation model like the Arena or Simio, for example?
A: Yes, it can. The simulation model allows to value the distribution network based on a dynamic and stochastic way. Moreover, with the Arena and Simio model you can automatically use the OPT Net output to create the fixed network it has defined into the simulation model.

Q: Can OPT Net be used to plan the distribution?
A: In some cases this is feasible also if, generally speaking, in these cases Best Shipping better suits the operative needs. OPT Net is mainly a designing tool.

Q: I've got a 3-level distribution network (plants – warehouse – regional warehouses) made up of hundreds of nodes. Can OPT Net be used to design the network?
A: Yes, OPT Net is sized for large instances with many data to process.

Q: I must face a multi-product and multi-facilities situation with constraints of reference availability only on some locations. Can OPT Net manage this situation ?
A: Yes, it can.

Q: What are the costs to be considered with OPT Net?
A: The cost partly depends on each specific problem: costs related to the logistics, the infrastructures and their effectiveness are be considered as well as "opportunity costs" that help evaluate the elements of risk.

ACTsolutions® Analytics and Control Technology

Worldwide Simulation Alliance
Executive Decision Support