

Total Optimization Plant Simulation
A Dynamic Event-Based Simulation Tool

Frequently Asked Questions

The following are answers to some frequently asked questions regarding K-TOPS and Process Modeling.

1 Why Perform A Process Optimization Exercise?

Process Modeling is a critical component in the design of a new facility, expansion of an existing facility or an optimization of an existing facility. Process modeling enables you to see the time impact on equipment, areas, and even entire facilities. The most important benefit is that it helps ensure that the facility can achieve the capacity that it was designed to run. It helps identify the robustness of the system by showing where bottlenecks occur in the current process or in future processes, as well as the impact of changes on the facility or area. Process modeling optimization is useful for both new facilities and to debottleneck existing facilities.

2 Why Use K-TOPS? Already Spent A Lot Of Money On Other Simulations.

There are three key reasons

The first is that the value of K-TOPS is the combination of the software and the process technical expertise. Our process expertise is filled with a strong understanding of not only the design, but also the building and construction of the facility. A K-TOPS optimization study makes use not only of the software but also of the combined experience of over a hundred design specialists.

In addition, it is designed to work using the limited amount of data available at the start of a project to quickly get the required answers. As the project progresses and additional data becomes available, it can be easily added to the program to answer more detailed questions. Most commercially available software requires so much detail that simulation efforts sometimes go on for months or years without any substantive results. K-TOPS can model most facilities effectively in just a few weeks.

The third key reason is that K-TOPS is flexible enough to address the same question differently. Able to give the best solution for the way you want to operate, not the best generic solution.

As a result, with a K-TOPS effort, the uncertainty about the facility is diminished, without requiring paying for more than is needed.

3 How Is K-TOPS Different From Other Programs?

The program was created by process experts with a key objective of designing and optimizing facilities quickly. It is designed to obtain answers to the important questions first, with very little data input. As the project progresses, additional, more detailed questions can be answered by providing additional inputs. This layered approach is frequently needed in today's fast paced projects.

The modular architecture combined with friendly spreadsheet input forms allow for rapid model development. The additions of new process areas or entire processes can be as quick as copying and pasting information.

Process data in K-TOPS is easy to maintain so that it can be continually enhanced to return valuable analysis during the entire life cycle of the manufactured product. K-TOPS can be used for production and preventative maintenance scheduling.

Another key differentiator is its unlimited flexibility. There is literally no process that K-TOPS cannot model. Most of the better designs within industry today have some sort of unique processing or scheduling scheme that cannot be modeled using existing, commercially available software solutions.

With K-TOPS, there is greater certainty that the facility can achieve the capacity it was designed to produce.

4 How Much Does It Cost?

It's a fraction of the cost of the savings. Our experience is that it saves millions of dollars.

Optimization studies typically save clients anywhere from several million to several hundred million dollars. Savings typically come from a combination of reduced capital cost, shortened project duration, or additional throughput that leads to additional revenue from product sold.

Alfa Laval Biokinetics will perform K-TOPS optimization studies for either a percentage of savings realized, for a hourly rate, or a combination of both.

5 How Long Does It Take?

K-TOPS efforts differ in length due to the overall objectives, the level of information available, and the number and complexity of processes being modeled. However, four to six weeks is a reasonable amount of time to achieve key objectives required for an process optimization effort, with information being obtained from modeling and answers to questions being addressed in as short as one to two weeks. Once the model has been created, the time to address additional questions, either variations of the original questions or new areas of interest, is reasonably quick.

6 Do We Sell The K-TOPS Simulation Tool?

Yes. We can sell the finished model with the K-TOPS tool at the completion of an optimization effort. The best value of K-TOPS to the client is when we provide a combined service of optimization using our process expertise and the K-TOPS tool. At the end of an effort we can work as an extension of

their company team, performing “what-if” analyses for new possibilities that occur after the original effort is completed or we can license the K-TOPS tool with their process already modeled.

7 When Is It Too Late To Perform A Process Optimization Exercise?

It's never too late to perform a process optimization exercise. For existing facilities, process optimization will identify opportunities to potentially improve production capacity with little or no process changes. It can also identify more efficient ways of running the existing operations, making it easier to ensure that production can consistently meet or exceed their targets.

For new facilities, process optimization is also of value at any stage of design or construction. Frequently, the earlier that process optimization is incorporated, the greater the benefit. However, process optimization can occur at later stages and still give high value by ensuring that the facility will be able to achieve the desired production capacity and by identifying how to best implement future changes. Process optimization exercises can also help with personnel planning for areas to allow for the initial and full production capacity.

In all cases, there are always good business reasons to make the facility the best it can be.

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