FACTORY EXPLORER®



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APPLICATIONS & EXAMPLES

Factory Explorer[®] is a predictive factory evaluation software platform. With a prestigious installed base, Factory Explorer[®] is The Choice of diverse manufacturing, assembly, and teaching institutions. An impressive customer list includes world leaders such as: Infineon Technologies, iFire Technology, Western Digital, BP Solar, and Stanford University. With its proven track record, Factory Explorer[®] is ready to address your critical business and academic applications.

CAPACITY PLANNING

For most manufacturing and assembly facilities, the need for additional production equipment must be identified and ordered far in advance of its actual use. When one product loads a tool to a greater degree than another product, any deviation from the expected product mix can leave the facility with insufficient capacity, even if total production volume is right on forecast.

Factory Explorer[®] provides an accurate view of capacity requirements by taking into account product mix changes over time and shared resources, both equipment and staffing. Factory Explorer[®] integrates both short-term (hour, day, week, and month) and long-term (quarter and annual) planning horizons. Unlike other applications that force users to wait for hours to get results, Factory Explorer[®] combines the speed of analytic capacity planning with the power of fast discrete-event simulation to provide answers in minutes.

CRITICAL PATH SUPPLY CHAIN ANALYSIS[™]

Effective control of the flow of components and materials to the manufacturing or assembly line is a key to cost effective manufacturing. In an optimal supply chain, materials and components are received just-in-time to enable lean manufacturing, i.e., the right product, in the right place, at the right time, at the lowest possible cost. Critical Path Supply Chain Analysis[™] is a method that uses capacity and simulation models to identify the supply chain links with the most potential to interrupt manufacturing and to explore the risks of interruption. This analysis becomes the foundation for a corrective supply chain solution. For a more detailed explanation of the application of Factory Explorer[®] to this topic area, please request "Critical Path Supply Chain Analysis[™]: A White Paper."

CYCLE TIME OPTIMIZATION

The combination of increased capital investment and shortened product life-cycles has led cycle time to become one of the most important factors in profitably meeting market windows. With influencing factors such as processing time, resource availability, product mix, process variability, and supply chain interruptions, cycle time management quickly becomes much too complex for static approaches.

Factory Explorer's powerful discrete-event simulation engine quickly identifies the factors such as bottlenecks, queuing, and batch sizing that greatly impact factory efficiency. Factory Explorer[®] provides management with the answers to their critical business questions and maximizes the opportunity to successfully meet market timing and customer commitments.

TECHNOLOGY TRANSITIONS

Driven by shorter product life-cycles, technology transitions have accelerated and become a major factor impacting factory productivity. Agile and flexible

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manufacturing techniques must be implemented to allow for the introduction of new technologies without impacting the production schedule of existing products.

Factory Explorer[®] helps you understand the impact of introducing a new technology by predicting the required capital investment, floor space, potential bottlenecks, resources (both physical and human), and cycle time (including accelerated cycles of learning through hot lots). Factory Explorer[®] allows you to create a virtual factory and facilitates "what-if" scenario planning before committing your hard earned working capital.

FACTORY SIZING

New factory planning needs to examine two distinct time horizons. Shortterm planning looks at the optimal factory size and production capacity for known and estimated demand for products already in the development cycle. Long-term planning needs to take into consideration possible technology transitions and capacity expansions.

By integrating capacity, simulation, and cost engines, Factory Explorer[®] is able to clearly show the relationships between start rates, capital investment, and product costs, while deriving floor space requirements by type and work area. Factory Explorer[®] can further assist in optimizing layouts by providing data on product travel distances between work cells.

WORK-IN-PROCESS (WIP) TRENDS

WIP Management is critical to reducing cycle time variability and identifying potential areas for inventory cost control. There are several methods typically employed to manage WIP including Kanban, ConWIP, and Theory of Constraints. The question becomes which method is right for your specific manufacturing environment.

Factory Explorer[®] addresses this question by determining the Kanban quantity between each machine, suggesting the total WIP in the factory for ConWIP, and identifying the "Herbie" for the application of Theory of Constraints, all under changing states of product mix and technology. Factory Explorer[®] is the right tool to drive your Lean Manufacturing decisions.

ACADEMIC TEACHING

In both undergraduate and graduate classes in Industrial Engineering, Operations Research, and Business Management, it is advantageous to expose students to simulation techniques as part of their background in decision making processes. This exposure has traditionally been limited by the complexity of simulation tools, their learning curves, and the length of the class quarter or semester.

Factory Explorer's short learning curve provides an alternative that can put the power of both analytic and simulation engines into the hands of students. In a matter of a few days, students can have their first models built and be running experiments to reinforce class instructional materials. To further support this important academic need, WWK offers special pricing that is very affordable to even the most cash-poor institutions.

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