

# Exsys Case Study

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## Optimum Sampling Plan Advisor

*DuPont*

Sampling is done for the purpose of making a decision about the status of a process or product and should always be adding value to the product for a customer. The quality of decisions (how often they are correct) is a function of the variability, sampling and testing structure. A good understanding of the variability structure is necessary for optimum sampling. The **Optimum Sampling Plan Advisor** utilizes industry-recognized sampling techniques and an extensive knowledge automation expert system to provide quality control engineers with appropriate guidance.

The Advisor determines the type of decisions that need to be made and calculates a value that represents the “performance of the process”. This value and the



uncertainty in the relation of tolerance limits with the customer are evaluated by the Advisor to make a recommendation. The value of this Advisor provides increased confidence of knowing that the sampling size and structure is based upon process capability and customer need.

Selection of the product properties to sample and the sample frequency are complex tasks that require a thorough understanding of the product requirements, the production process, risks associated with producing off-quality product and control of the process. Additional value is cost-savings with reduced sampling and improved product quality. Unacceptable quality may result in extra expenses due to processing returned merchandise, downtime to reset production lines, downstream product failures, delayed shipments, etc.

The Advisor is combined with statistical models to determine optimum sampling, and allows engineers to try various “what if” scenarios. Since the application is Web-based and available globally throughout the corporation, engineers can quickly view how similar production processes are being monitored at other sites for similar products. The system provides a framework for establishing more structured and consistent quality control policies. The Advisor’s recommendations are built into HTML reports, which can be easily saved, printed and sent to others for review. The Web-based tool provides users with simple screen navigation with the ability to back up and change input values – noted as one of the best time-savings features of the system. Online help has also dramatically reduced the number of help desk calls from users.



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