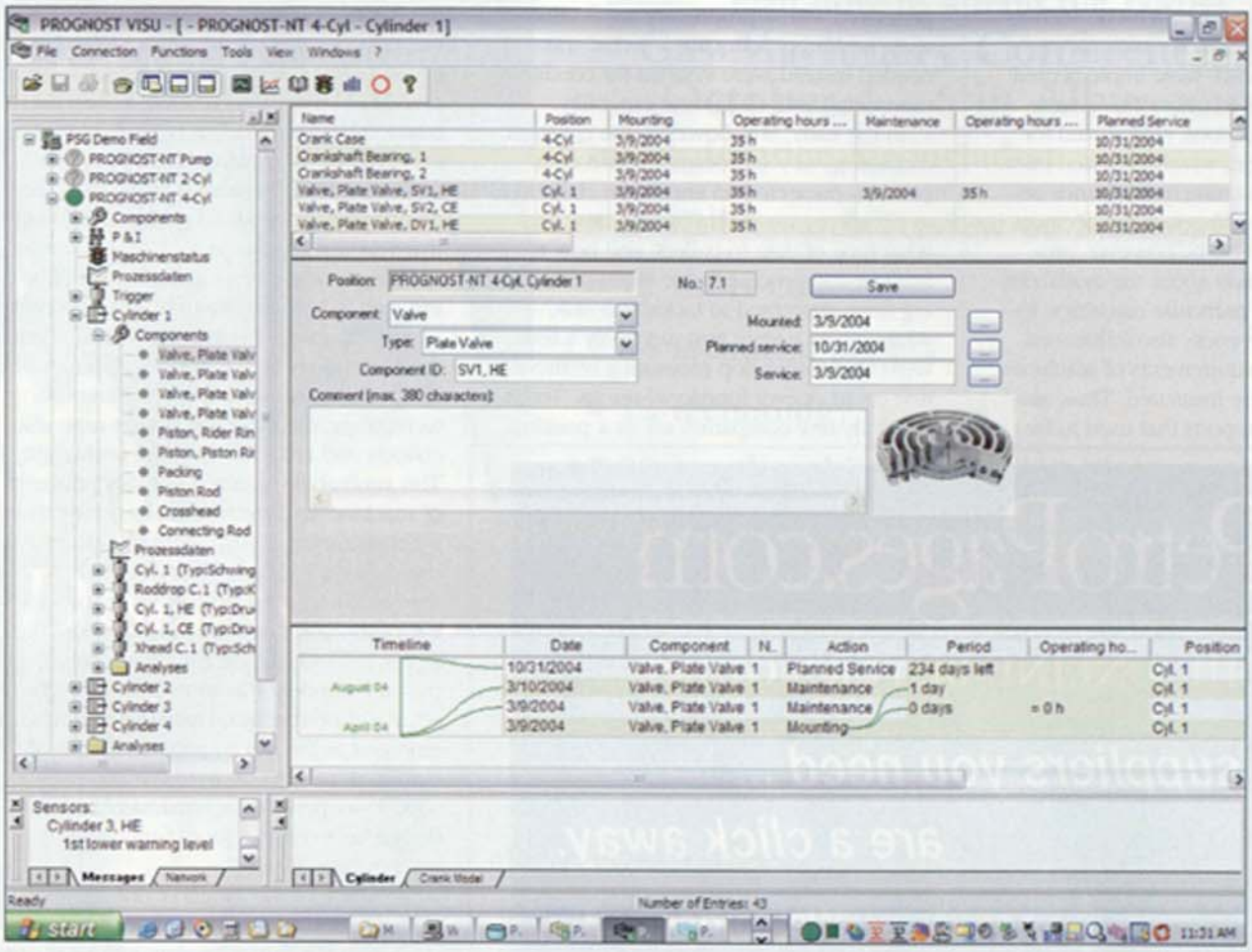

Screenshot from PROGNOST-NT Version 6 showing the overall component tracking view, which includes all relevant details of mounting date, operating hours, scheduled services, product details.

FROM CONDITION MONITORING TO ASSET PERFORMANCE MANAGEMENT

Version 6 of the Prognost Online Monitoring System is Due for Release This Summer

By Jost-Andreas Anderhub

Regardless of their size and the industries in which they operate, companies have to rely on the performance of their capital equipment. This performance is measured in various ways, such as shareholder value, growth in sales revenue and returns and customer satisfaction. Multinational corporations in the chemical industry and in the oil/gas industry make significant investments in machinery and equipment. An equally important aspect is ensuring that production processes can run smoothly — from oil extraction and refining operations to marketing specialized products to consumers.

A single broken link in this delicate process can lead to millions of dollars in losses within a very short time. The productivity of machines and plants is therefore of growing importance to the financial success or failure of a business.

Given these circumstances, many companies are inclined to introduce high-performance tools to manage their equipment resources (assets), and thereby gain the greatest amount of information possible to assist them in making the right decisions for their group. The integration of these tools into existing ERP systems (enterprise resource management) is a further step toward increasing the transparency of business processes.

The purpose is clear: maximizing ROI throughout the entire organization, from maintenance to management.

The term "strategic asset" is frequently used in this context. What does strategic mean? Following are two examples: In order to meet production targets, the manufacturing sector has to rely on equipment availability. The equipment is therefore strategic. Companies with a large sales force in the field are dependent upon the availability of their CRM software (customer relationship management), in order to coordinate appointments and customer inquiries. Thus, IT availability is of equal strategic importance for these types of businesses. It can be reasonably assumed that no company will purchase goods and then simply let them stand around idle without generating added value for the business. In other words, because all equipment resources are basically strategic, the term is thus not very useful in this context. This means that the distinction between equipment resources that are "critical for success" or "noncritical" instead provides information on the importance of each individual machine.

How can asset management be implemented on a maintenance level, and what methods did those responsible previously use for these equipment resources?

Machines such as reciprocating compressors are frequently part of complex manufacturing processes; machine operators and maintenance personnel are therefore directly involved in a company's profitability. This involvement is based on their responsibility for equipment resources that are usually "mission-critical" factors. Early

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approaches to asset management, such as the CMMS (computerized maintenance management system), were implemented in the area of maintenance. These were stand-alone applications, customized for one specific section, which provided information about upcoming maintenance actions, such as oil changes or replacement of wearing parts. CMMS, however, provided no information about the availability or the "health" of particular machines. Increased competitiveness also influenced the productivity requirements of machines and how they were measured. Thus, simple maintenance reports that used to be generated with a proprietary application were no longer adequate — what was needed instead were systems for condition monitoring with diagnostic capability.

In the early '80s, however, the complex technology of reciprocating piston compressors presented an enormous challenge to engineers around the world: how and what type of data to collect, and how to analyze and process them? Many consulting firms attempted to tackle this task, while others simply gave up. Only a few were able to develop measuring methods that could deliver functional results. Today, relatively few companies are in a position to offer field-tested systems. In spite of the extended development history of reciprocating piston compressors, it has only been possible to truly analyze them within the past ten years or so. This type of internal examination by means of condition monitoring has since expanded far beyond the comparator or threshold switch technology that was used in the past.

Using its experience in online monitoring, and in response to user and customer needs, Prognost Systems GmbH has taken this technology to the next level. In addition to its well-tested machine diagnostic technology, the Prognost system now also collects and analyzes machine profitability. This profitability analysis consists primarily of machine availability data, in conjunction with customized parameters and other standard data values. Thus, for the first time in the 100-year history of reciprocating piston compressors, it is now possible to review and analyze the reciprocating piston compressor in its entirety as an asset. Asset performance management has emerged as the key to success for the operation of reciprocating piston compressors. Asset performance management is a bridge between machine diagnosis and machine economy.

Version 6 of the Prognost online monitoring system is due for release this summer; the asset control system will be a part of this package. Decision makers will then be able to use features such as component registration, running time meter, real-time availability and machine utilization to schedule shutdowns and maintenance intervals, place orders for parts deliveries, organize staff logistics and make informed decisions regarding other cost-intensive measures. For example, the asset control system differentiates between the installation date and the actual running time of components that are subject to wear and tear, since this can vary substantially when machines are shut down from time to time. This seemingly trivial differentiation permits Prognost equipped compressors to operate for longer periods, e.g., beyond the next scheduled maintenance interval. The life cycles of individual components can be projected by means of trend analyses, and it has now finally become possible to schedule shutdowns in advance.

Prognost-NT enables asset management to be implemented on the maintenance level. This system also provides management with the data necessary to make well-founded decisions, since higher level, purely operational asset management systems generally do not collect their own data, and rely instead on available information. Utilizing asset management systems without highly accurate data sources is like trying to cut with a blunt knife — better data provide a true cutting edge. ■

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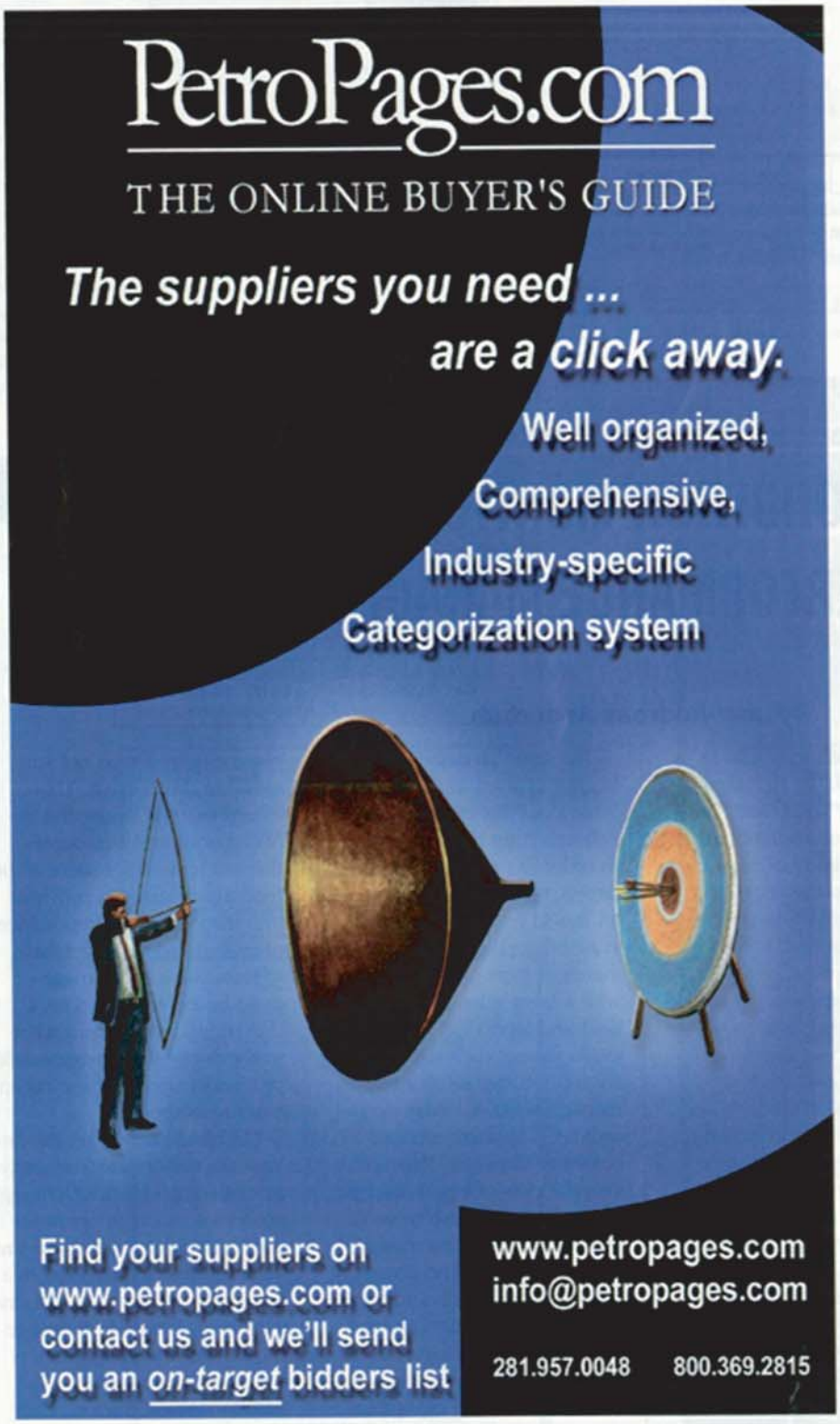

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