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MARKET: Seafood processing.

CUSTOMER: Universal Seafoods, Redmond, Wash., processes 70,000 metric tons of bottom fish annually. The company has a shore-based processing plant in Dutch Harbor, Alaska, a Bering Sea fishing fleet, and a finished processing facility in Redmond.

PROBLEM: Quality of freshly-caught fish is affected when refrigerated equipment for chilling the fish breaks down or operates inefficiently. When bottom fish are caught at sea, UniSea immediately puts them in refrigerated seawater tanks on the fishing boats and chills the fish to 0° Centigrade. When the boats reach shore, the fish are put into refrigerated seawater tanks to maintain the chilled temperature until processing. "The goal is to get the fish chilled as quickly as possible to 0°C and keep them there," says Pete Maloney, vice-president of production at UniSea.

APPLICATION: To help ensure quality, UniSea uses Ryan multi-channel time/temperature monitors (TTMs) in the hold of each fishing boat and in the on-shore seawater tanks. DataMentors™ monitor the refrigeration equipment's performance throughout processing channels; TripMentors™ monitor refrigeration performance in distribution channels.

BENEFIT: By using TTMs, vessel operators are able to quickly detect and correct any malfunctions in cooling equipment at sea; on-shore managers do likewise. That means UniSea is able to consistently provide top quality fish -- with longer shelf-life and better taste and texture -- and receive a higher price for its catch. Also, it is easier for UniSea to process fish that has been chilled to proper temperatures.

CONCLUSION: Armed with the appropriate temperature information, the company made changes in refrigeration management that have improved quality control. "There's a knowledge and awareness of what's happening to the fish," Maloney said. "There's an awareness of why one batch of fish isn't as good as another batch of fish. Before, we were in the dark as to why one batch of fish wasn't as good. Temperature monitoring has helped us improve our overall quality."