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Knowledge Management Moves into the Control Room

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Two-year old iWare, the industrial division of knowledge management software provider CanWeb Internet Services Ltd., has unveiled an application primarily for the process industry that it said will integrate with most advanced control systems and provides a way for operators to access procedural information that is often locked away in file cabinets -- or even in a colleague's head.

The iWare Control Room Operator Support System is said to provide the missing link between control system data and infrequently used procedures and business data, giving operators a complete picture of what is going on and how to solve the problem. It is, in fact, a knowledge-management (KM) application in that it can integrate information on operating and maintenance procedures, pull in data from vendor manuals, engineering drawings, videos or digital photographs, and even generate a work order directly from the control system.

"Most companies have documented procedures, but a lot of it still resides in binders," said Jackie Grant, vice president of iWare in Sarnia, Ontario. "It could even be in electronic format with document management [applications] but it is disconnected from the control room."

Unlike some new knowledge management applications, iWare isn't web-based, which may appeal to security-conscious plant managers fearful of exposing automation systems to Internet-enabled vulnerabilities. It runs on a SQL database (either Oracle or MS SQL) that links documentation on policies and procedures with any of the major distributed control systems (DCS) including those from Honeywell, Invensys, ABB and Emerson.

And even though it is positioned as a solution for the process industry, Grant said the database can also integrate with the programmable logic controllers (PLCs) most often found in discrete environments.

After the data is cleaned to ensure workflow accuracy and eliminate duplicative information, some integration work needs to be done in the form of collecting information from multiple sites and linking all of the appropriate materials, said Grant. Connecting with the control systems is the easiest part of the set-up, she noted.

Using iWare, a right mouse click on a component displayed on the control room system screen provides all of the appropriate documentation needed to respond to the situation with which they are dealing, Grant said. Having this kind of knowledge management tool is becoming vitally important to the manufacturing community. Take one vertical, for instance: the petro-chemical industry. According to the Society for Petroleum Engineers (SPE), between 1980 and 1998 the number of people working in the oil and gas industry declined from 700,000 to 300,000.

Given that the median age of SPE members is 47, it's estimated that the industry will experience a 44% attrition rate by 2010. That means almost half of the workforce will be new.

Knowledge transfer will be vital to keep the industry humming, according to [The American Productivity & Quality Center \(APCQ\)](#), a nonprofit provider of financial and value chain benchmarking and research services. In fact, an APCQ whitepaper based on a 2002 benchmarking study found that the best way to retain valuable knowledge in the face of attrition or downsizing is to build and sustain systemic knowledge management approaches. That means conducting team meetings, discussions with senior management and forming communities of practices.

It also means adopting technology that can integrate the flow of information into everyday situations. "The most effective way to capture, retain, and transfer valuable knowledge is to embed that process into work flow," according to the report entitled "Retaining Valuable Knowledge: Proactive Strategies to Deal with a Shifting Workforce".

The iWare Control Room Operator Support System is available now. Pricing depends on the control room set up and how many stations the manufacturer has.