



# KNOWLEDGE IN ACTION

A NORMAL DAY IN THE FACTORY WITH THE HELP OF AI.

BY WILSON PEREZ CAMBRICA CORP.

THIS IS THE FIRST IN A SERIES OF ARTICLES BY CAMBRICA DETAILING HOW ARTIFICIAL INTELLIGENCE CAN PLAY A PIVOTAL ROLE IN PLANT OPERATIONS.

It is a hot and humid day in central Florida. It's 8:30 a.m. and Scott started his second week of work in the maintenance department. His cell phone alerts him to a repair order that the CMMS system just has generated.

Scott is a young 25-year-old operator with limited job experience. Since joining the company, just 15 days ago, his cell phone already has an interface, called Ki-ino, based on Artificial Intelligence (AI), which connects several business applications (BA) and collaboration platforms. It is simple and intuitive.

At 8:35 a.m., Ki-ino reminds him that he is about to start a scheduled task. Ki-ino starts a conversation with Scott through a chatbot:

**Ki-ino** Hi Scott, the temperature is already 94 F in the plant. I suggest you hydrate yourself well before starting the job.

**Scott** Thanks Ki-ino, what do I need to know before I start?

**Ki-ino** The machine you need to check is an X300 folder-gluer, built in 2012. It is down since last night at 9:00 p.m., when it indicated a fault. I see that it is a recurring electronic problem related to the servo drive for transport belt T6. The system shows a heat overload. The last intervention was made one week ago. The machine was shut off and restarted 20

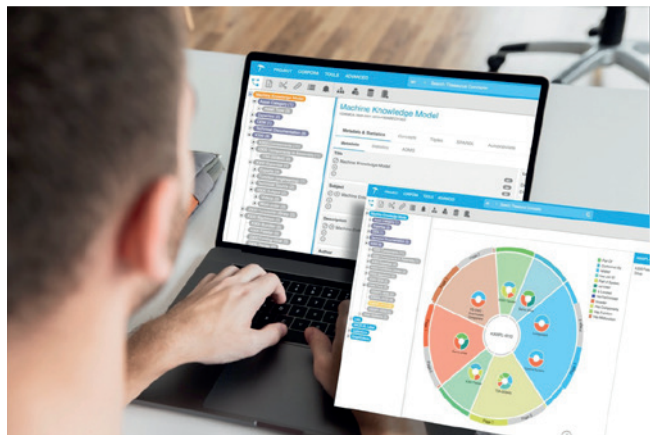
minutes later and ran fine without trouble. The technician was Tim Alee, who no longer works with us.

**Scott** Is it possible that the fault has to do with the previous maintenance?

**Ki-ino** Checking the manuals there is only one correlation – the transport belt was changed one day prior to the first reported fault. It is possibly related to that work.

**Scott** If I have any questions who can I consult?

**Ki-ino** The people who know the X300 best are John Dixon and





Amy Ku, both are engineers who you can contact. I see that they have supervised all maintenance. In addition, our company gets on-line technical support from the OEM, C-Digital in Sweden. The contact there is Melanie Anderson. If you need to call or send a message, touch the name of one of them on your mobile device.

**Scott** Could you show me the schematic of that part of the machine?

**Ki-ino** At this moment I am sending you the schematic of that section and some photographs of the drive and screen shots of the error code, (just click on the link).

**Ki-ino** I even found possible troubleshoot actions based on the error code analysis that can help you. Check the belt tension. It may be too tight and causes an overload on the servo drive.

**Scott** OK, thanks Ki-ino.

This conversation is natural and works perfectly because it was designed, built and implemented based on a knowledge model of that piece of machinery. It has been developed based on a methodology of relationships of entities clearly defined by the OEM, the maintenance department, technical management, expert consultants and operators.

The knowledge model is based on the collective intelligence and is built on semantic artificial intelligence technologies, which can interconnect CMMS systems, ERP, Office 365 collaborative tools, or even various external sources of information such as web pages or expert communities in social networks to enrich the model. Knowledge goes from being implicit in the mind and experience of individual workers to being explicit, institutionalized and distributed.

This is a great advantage adding significant value to the company. It allows the transfer of knowledge much faster in case of a sale or merger of the company or the rotation of

personnel. It optimizes the processes with interactive and collaborative knowledge, improves communication and provides certainty to the entire organization at all levels about the status of productive assets, thus supporting your business strategy to consistently support product and service quality, and identifying new opportunities.

“That interaction is the potential AI puts right now in your company. The knowledge seen from this perspective becomes an identifiable asset of great value. It enables a business to stay focused over time, which is very difficult especially in small and medium sized businesses. And, importantly,



**Andy Reissmann**

says Andy Reissmann, President of Cambrica, a company specializing in knowledge management.

Business dynamics are constantly changing, especially with workers. According to a report from the Bureau of Labor Statistics, the average tenure of an employee in manufacturing is 4.3 years. For younger employees between 25 to 34 years old, the tenure only is 2.8 years. Therefore, a fast and effective transfer of knowledge is imperative.

“Since knowledge is an asset, I advise companies to embrace the digital transformation now. A perfect place to get started is with a Technical Knowledge Management (TKM) solution. Here a lot of information is already available in the form of manuals, instructions, job history and other knowledge bases. While the

knowledge models identify opportunities, for example in sales, that without the interpretation layer of a knowledge model would not be visible,”



**Rosa Reissmann**

Cambrica and an expert in modeling productive knowledge.

This is a task many companies are in default of starting to respond efficiently to rapid and unexpected market changes. Knowledge models create a competitive advantage by organizing and interpreting data in the context in which we need to see them. They ensure quick and effective knowledge transfer and connect data bases from internal and external sources. They create visibility into opportunities otherwise hidden from view and in the process create significant shareholder value. ■

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*Wilson Perez is Director of Communication at Cambrica Corp.*

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*Rosa Reissmann is a reliability engineer, business system implementor, business process analyst and a certified semantic technology systems expert.*

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*Andy Reissmann has a business management background, is a business analyst and is a certified knowledge management specialist. The Reissmanns have decades worth of experience in the paper and paperboard converting industry.*

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