

# Micromem (C.MRM) CEO breaks the mould with innovative Industrial IoT strategy

TECHNOLOGY - ELECTRONIC GAMING & MULTIMEDIA



**JOSEPH FUDA**  
PRESIDENT  
AND CEO

Advances in analytics, cloud computing and sensor technologies have continued to propel the Internet of Things (IoT) forward. This revolution of digitally interconnected devices communicating back and forth over the Internet bringing actionable data to users in real time is predicted to be worth \$1.7 trillion by 2019 in global market value. We are well familiar with wearables. The Fitbit, iWatch and Samsung Gear. Cool little gadgets you can wear to a dinner party. The sexy side of IoT. There is another side which is just as vital to the revolution – Industrial IoT. The devices that make up this category aren't pretty, but they sure are proud as many of them operate in the most extreme conditions with great accuracy and long life. The opportunity these devices provide for predictive maintenance means incredible savings for businesses operating in a multiple of verticals. According to a GE Digital report, the aviation industry pays \$45.0 million per day in maintenance costs for delays and cancellations. Being able to mitigate that cost with preventive maintenance, even if it only reduced those costs by \$1.0 million per day, would save the industry \$365 million a year. Because Industrial IoT is nascent, there is tremendous capital growth opportunity for forward-thinking IoT developers like **Micromem Technologies (CSE: MRM, OTCQX:MMTIF, Forum)**.

Micromem is a prime example of sector innovation, crafting through customer-collaboration, specific IoT solutions that address already identified chal-

lenges. The company already has solid long-lasting relationships with Fortune 50 partner-clients, and it continues to put proven technologies into the field, positioning Micromem to become the dark horse dominant player in the sector. Stockhouse writers sat down with Micromem President and CEO, Joseph Fuda, to get an inside look at Micromem and the opportunities it presents to the investment community.

**For those that don't know Micromem Technologies, can you describe the company and say what it does?**

Micromem Technologies is a sensor solutions company that has partnered with Fortune 50 companies to deliver smart infrastructure to the oil and gas, automotive and utility industries. Our core technology is robust, scavenges power from the surrounding magnetic fields and has been proven to operate in harsh environments.

**Why should people be interested in investing in this company right now?**

Micromem Technologies has already invested over 5 years and in excess of \$20,000,000 USD in conjunction with its partners to prove the technology and delivered results satisfactory to our Fortune 50 companies. Our partners have also invested millions into our technology solutions so there is no longer research risk on several of our projects

and in fact we are now beginning the deployment phase on 3 of our projects. Investors should take a look at our partners and the types of projects that we are working on with them as we have

longest and most profitable future will be in the oil gas and industry. The oil industry has hundreds of thousands of wells globally with millions of miles of pipeline globally. The ability to enhance

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developed strong relationships giving Micromem unique access to some of the world's largest industries and those that drive those industries.

**What are the key markets that you serve?**

Currently Micromem Technologies is working on 3 key industries, Oil and gas, automotive and utility. All of these are key business that rely heavily on infrastructure that has reached a point of obsolescence and needs to be brought into the 21st century. Smart oil wells, smart pipelines, smart transformers are all in need of better information gathering and actionable data to allow the more efficient management of these key assets.

**Which of those sectors do you expect to deliver the largest amount of revenue in the future and why?**

All of our market verticals are multi-million dollar, multi-year projects. The commitments from our partners to adopt these systems will be long term deployment strategies as the infrastructure involved is massive. In my own mind currently the industry that will have the

these systems so that they can provide real time analysis of their condition is fundamental value to the management of these assets.

**In a previous interview, you mentioned that Micromem Technologies has been approved to proceed on an Interwell Tracer device. Can you describe how the device works and say where you are in the field deployment process?**

A good example of one of our projects is the Interwell tracer Device built in partnership with one of our oil company partners. This device is designed to be attached to a well head, sample the oil stream daily, do an analysis of the level of particle break through and send the information in real time to a central location to be assessed and if necessary acted upon. There are over 200,000 wells in the system alone that could benefit from the information being available immediately. Efficient oil production is the life blood of this industry and accurate information allowing for definitive action, particularly when oil prices are volatile, is crucial. This system is actually a cost savings for the producer.

**You have said that you have an interesting revenue model. Can you describe how it works?**

Our revenue model is based upon a partnership with the company that has the issue to solve. We start by working with the partner in developing the correct strategy to solve the problem as opposed to trying to sell them an off the shelf solution. Throughout this process Micromem Technologies invests with the partner so there is co-ownership of the intellectual property and the patents. This point is relevant because as co-owners it is unlikely that the partner will then go somewhere else to find the solution and it allows Micromem to charge a royalty or some other markup as the systems are being installed. In addition, applications that are developed outside the use for the partner remains with Micromem allowing us to develop spin off products and maintain ownership of those applications.

**In a recent update on your Oil Condition Sensor Suite, you said the oil pan plug product development has transitioned from a partner's prototype development facility into their manufacturing facilities. Can you describe how the product works and outline what changes are necessary to allow for non-automotive usage?**

One of other products is the oil pan plug. This product was designed to be installed wirelessly into the oil pan of an automobile, analyze the condition of the oil and report that condition to the driver in real time. Current systems rely on software algorithms to basically advise a driver when it is time to change the oil in their car and essentially all it does it after a certain amount of mileage or a

certain time period the driver is advised to change their oil. Our system is different that it measures the contamination in real terms inside the automobiles lubricant and reports when it is time for that specific automobile to change their oil. This allows for better maintenance, fewer warranty claims and more accurate maintenance scheduling specific to the automobile. This technology is a good example of how Micromem Technologies can benefit from spin off uses of a technology, the patents that were awarded to Micromem are referred to as “Multi-modal FLUID Condition sensor”. So although the current partner has rights for use in the oil condition application ALL other fluids belong to Micromem, even things like transmission, brake fluids are examples that we control in the automotive sector. Uses for water contamination or any other fluid belongs to Micromem where there are minor changes to modify the device for those uses.

**You recently said this next year is going to be exciting for Micromem as the company expects to be delivering another two products into commercialization. Can you elaborate on this statement?**

In addition to moving our oil pan sensor suite into production both our Interwell tracer project and our Laser Induced Based Spectroscopy technology are also moving into the field deployment phase. Both those projects have had their respective prototypes approved and are now being scheduled for field deployment. This includes selecting manufacturers’, installers, and target sites all of which have been approved by the partner has now been done.

**What are some of your other goals for the balance of 2016 and into early 2017?**

Our primary focus over the next 12 months is completing the initial phase of deployments for our first 3 projects. In addition, we will be using the cash flow from those first 3 projects to enhance our pipeline of current projects and complete those for deployment through the end of 2017 and into 2018.

**Does Micromem Technologies have sufficient financing to carry out its goals?**

Our current financing strategy is to raise some money through debentures so that we can avoid dilution and fully expect that our projects moving into deployment will carry the company’s needs going forward.

**You had previously indicated that you expected the company to be swallowed up (either partially or completely) within the next 12 months, possibly by a large company in the computer technology field. Is that still what you are predicting? If so, why?**

Micromem Technologies has been approached by a technology company whose interest in us is our client base and the opportunity they will provide in the cloud based analytics of all this new data being generated by the new solutions. The Internet of Things is a growth opportunity for many companies when you consider we have broken ground on new market verticals with industry leaders. We have already begun negotiating a joint venture development utilizing one of their clients which is a great way to assess how these companies can work together and provide a full

solution to the client/partner. This is a critical first step.

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