

# RESEARCH MONEY

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## **CMC Microsystems making the case for continued support as shut-down deadline looms**

*By Mark Henderson*

CMC Microsystems is pulling out all the stops to persuade governments and other stakeholders that its expertise and services in microelectronics, photonics and other cutting edge technologies are critical to Canada's future competitiveness in advanced manufacturing and other key tech-based sectors. The Kingston-based innovation intermediary has been working against a ticking clock since 2016 when renewal of its historical funding arrangement with the Natural Sciences and Engineering Research Council (NSERC) was **denied**.

Since then, former president and CEO Dr Ian McWalter and now Gordon Harling, have been lobbying heavily for new financial assistance. With a June 30/19 deadline looming, the organization is pursuing multiple avenues and approaches including changing its support model for microelectronics and associated research at academic institutions from coast to coast.

“What we are doing is making every attempt. We’re using a shotgun not a rifle, trying every possible avenue that we can (because) we’re critical to anything involving sensing or computation or communications, always at a microsystem level,” says Harling. “What I’m trying to do is take us from solely research to research, education and industrial collaboration around innovation.”

Founded 34 years ago, CMC operates the highly successful National Design Network (NDN) which provides financial and technological support to about 1200 professors, 3600 graduate students and 4550 undergraduate students at more than 60 universities across Canada. Its extensive ecosystem includes 130 industry partners and suppliers around the world, many of which are state-of-the-art fabrication facilities.

Over its history, however, funding has been piecemeal. In addition to core support from NSERC, CMC has benefitted from several investments by the Canada Foundation for Innovation (CFI), which leverages provincial, industry and academic funding.

It was NSERC's withdrawal that precipitated CMC's current crisis, and while it convinced the government to maintain full support for three years starting in 2016, there is just one year left before CMC could be forced to cease operations.

“In October we will have to give notices to all of our employees. They may stay on and work to the end of their term, but we’ll certainly be losing people (and) it’s going to get worse,” says Harling, a successful entrepreneur who has led several microelectronics companies. “In December we won’t be able to do any more fabrication because we won’t be around to take the chips when they come back and distribute them to people, so we’ll have to find someone to cover off for us on that. And on June 30<sup>th</sup>, we turn the key in the door basically.”

Both Harling and his predecessor McWalter acknowledge that CMC may have to change in order to fit into the available funding programs. The organization has already made several changes to how it does business and who it does it with. It recently shut down its commercialization arm and is branching out into education (as opposed to academic-based research), particularly for smaller universities in Canada and potentially elsewhere who don't have the in-house expertise and capacity to train students in a real world environment.

“Over time we've had more educators who want to use (our) high-end industrial tools to teach classes. That's not strictly research, it's education, which is the job of the provinces and not the job of the feds,” says Harling. “We have also (worked more) on the industrial side and done as much as \$1 million a year in contract research for industry.”

## Changing the model

Changing CMC could also mean altering the technology readiness level (TRL) spectrum it current works within (TRL 4-6). For example, consideration under the Strategic Innovation Fund (SIF) at the Innovation, Science and Economic Development department would necessitate a move closer to the market (TRL 5-8).

Stream 4 of the SIF is of particular interest as it supports initiatives that “advance industrial research, development and technology demonstration through collaboration between the private sector, researchers and non-profit organizations”.

CMC is also seeking contracts through the Innovation for Defence Excellence and Security (IDEaS) program at Defence Research and Development Canada. Harling says that he's hopeful he can patch together up to \$6 million in revenue from various sources to maintain operations.

“We have 30 engineers on staff, 12 PhDs. We have incredible depth of knowledge in seven (technology) areas so let's use it. We're going to do some R&D ourselves internally so if we get the first contract there's a follow-on to prove ourselves,” he says. “We can go out to the network of researchers we deal with (and) we will then be able to build a network R&D organization with far more resources than anyone else has ... We will do some industrial R&D contract work and I hope to get that up to a million (dollars) or two a year. We will also engage the provinces. We can do a lot for education but I have to have some sort of proposal to make to them.”

As part of its last-ditch efforts to avoid closure, CMC is putting together a line item proposal for the next federal Budget while it continues its lobbying efforts at the federal and provincial levels. In addition to Harling, CMC has registered two other staffers as lobbyists: Peter Stokes, CMC's director of CFI Projects and Nancy Marlow, CMC's director of finance and human resources and its secretary-treasurer. Their work is augmented with a public relations firm CMC has contracted and the updating of an impact study by KPMG. The overall intent is to demonstrate how CMC is contributing and can contribute to Canada's GDP as well as training the next generation of researchers and engineers.

“We want to demonstrate how we do things ... We need more push marketing. People need to see you eight times before they think you're real,” says Harling, adding that he plans to open offices in Eastern and Western Canada with at least five employees each. “We're widening our net trying to increase our revenues and increase our cost recovery. All that will reduce the burden financially. I really want CMC to be more national.”

**RS**