ITAC ONLINE DIGEST

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In ITAlics Microsystems Champions Speak

Canada's microsystems sector attracts a special kind of entrepreneur—the kind that thrives on adversity and a constantly shifting environment.

One of Canada's most successful serial entrepreneurs Antoine Paquin told his audience at the annual symposium co-sponsored by CMC Microsystems and ITAC that building new microsystems ventures in Canada is like going to war.

Speaking at the same forum, Teledyne DALSA CEO Brian Doody—another veteran of the Canadian microelectronics sector—was a bit more sanguine, but no less clear-eyed in his assessment. Funding remains a challenge, he said, particularly with the federal government putting the squeeze on tax incentives for R&D investment.

The third perspective in this issue of ITAC Online comes from Matt Skynner, General Manager of AMD's Canadian operations & Corporate Vice President of AMD's Graphics Business Unit. With the gaming industry booming (with nearly $100 billion in annual sales of gaming hardware and software across all platforms) he sees continued R&D and innovation as keys to pushing past the challenges.

Three views, but one message: A strong microsystems component can have significant impact on Canada's ability to thrive in a digital economy.

FOCUS ON MICROSYSTEMS

War Strategies

Antoine Paquin
President and CEO
Solantro Semiconductor Inc.

As a self-proclaimed "serial entrepreneur," Antoine Paquin has a unique perspective on the challenges facing Canadian microsystems start-ups.

Now the president and CEO of Solantro Semiconductor Inc., Paquin was blunt when he addressed attendees at "Technologies for Digital Living: Trends Towards 2025," the annual symposium co-sponsored by CMC Microsystems and ITAC. "We are at war," he said, referring to the economic and policy hurdles that stand between nascent companies and success.

"Semiconductor companies are not getting financed," he said, pointing to what he cites as a one-in-ten chance of getting outside investment for a fabless semiconductor company (i.e., a company that outsources its chip fabrication). "It requires $20 to $50 million in financing to see a fabless operation break even, and 90 percent of potential investors will walk you out of their office."

Paquin understands both sides of the equation. After a highly successful run with companies like Skystone Systems, Philsar Semiconductor, and Axiom Microdevices, he returned to his hometown of Montreal to become a partner with Rho Canada Ventures. After founding Solantro in his part-time base of California, he is now again practising what he preaches about refusing to let go of the dream of building great companies that innovate.

He took his symposium audience through a short history of Canada's microelectronics industry, and offered some hard-won prescriptions for success.

"We used to develop everything here," he said, referring to a time when semiconductor companies operated their own foundries. "Then, most companies went fabless, and then we began to rely on intellectual property."

Summarizing the experience, he said: "As Canadians in this business, we get our asses kicked and then we retreat."

Although it is impossible to rewrite the past, and there is no chance that microprocessor foundries will return to our soil, he said it is imperative for Canadian companies to regain leadership. To do that, "we have to out-innovate and out-risk the competition."

Overcoming the financing challenges means having a "deep well of faith," he said, "and people will think (your idea) is crazy."

He pointed to government policy as one major barrier. "There is opportunity at the policy level to reinforce risk taking," he said, adding that the current regulatory policy makes it too complicated for foreign investors to want to get involved. He pointed to the need for more liberal economic policies that "get out of the way and let business succeed or fail on their own."

Canadian education policy is also a hinderance, resulting in too few graduate students wanting to work in the microelectronics sector.

Finally, he questioned the very DNA of Canadian entrepreneurs and their failure—his included, he noted—to shepherd their creations through to the IPO stage. "We need to take more risks. We need more corporate headquarters here. As it stands, the incentive is for entrepreneurs to sell rather than to take their companies public."

Despite the obstacles, he remains positive. "We have a fighting chance," he said. "I'm still optimistic we can win."

There's No Place Like Home

Brian Doody
CEO, Teledyne DALSA

As head of one of the world's top MEMS foundries and a supplier of components for products ranging from smartphones to televisions to automobiles, Teledyne DALSA CEO Brian Doody has learned about building a successful company based in Canada.

At the annual microsystems symposium co-sponsored by CMC Microsystems and ITAC, he outlined the challenges and opportunities presented by the Canadian business environment.

"You have to celebrate and take advantage of where you operate," he said, highlighting some of the positive aspects of working inside a country with a relatively small population.

"We are not too big, and you can turn that to your advantage." For example, he said, companies in Canada have better access to key decision-makers at all levels of government. That access is vital, he added, because although "we have a flexible operating environment and, generally, strong government support… we do need to exert influence on government (on issues like tax breaks for R&D investment)."

He pointed to the power of networking and advocating through an organization like ITAC, and the support of business-focused communities like Waterloo, Ontario, and Bromont, Quebec, two places where his company operates.

In the latter community, Teledyne DALSA is one of several companies that have formed a microelectronics cluster in collaboration with Université de Sherbrooke, Industry Canada, and the Quebec government. Citing that partnership between industry, academia, and government, as well as the Communitech innovation hub in the Waterloo region, Doody emphasized the importance of collaboration to meet the goals of all the players.

Collaboration is also important, he said, to take full advantage of a reality of Canadian corporate life: foreign ownership. In 2011, DALSA was purchased by Thousand Oaks, California-based Teledyne Technologies Inc.—a relationship the Canadian subsidiary has leveraged to expand its market in places like Asia, which now accounts for 43 percent of the company's sales.

Foreign ownership will continue to be a reality until Canadian companies have better access to capital, he said. "Undervalued companies are targets for takeover…. Foreign investors recognize real value."

Turning to the challenges that government policy pose to burgeoning organizations, he noted the disconnection between his company's heavy emphasis on R&D (which represents an ongoing investment of 20 percent of sales revenue) and the federal government's policy of sharing intellectual property as part of the procurement regulations for the Department of National Defence.

"Clearly," he said, "we are not going to develop technology for others to take the production advantage…. The reality is, R&D has really been pushed away in Canada.

"R&D dollars are really important. Government tax breaks make a huge difference because there is a direct correlation between size and R&D spending."

He said the government's decision to cut funding to its Scientific Research and Experimental Development (SR&ED) tax incentive program represented a major step backward.

"We knew the program, and it helped us because the incentives were not focused on individual initiatives. With government support limited to project-based funding, you can't plan…. I don't think government has come to the realization that this will affect our industry yet."

Despite hurdles like that, Doody's conclusion was upbeat: "You have to recognize and embrace the advantages of being in Canada. Opportunities come in many forms."

A Passion for Products

Matt Skynner
General Manager, AMD Canadian operations
& Corporate Vice President, Graphics Business Unit

As General Manager of AMD's Canadian operations & Corporate Vice President of the Graphics Business Unit, Matt Skynner shares his views on the country's microsystems sector and the booming gaming arena. Founded in 1969, AMD has some 10,000 employees in 31 countries, and annual revenue of more than $5.4 billion. The Canadian office, located in Markham, Ontario, employs approximately 1,500 staff who play a strong role in contributing to AMD's product roadmap. AMD's accelerated processing units help power consumer and commercial notebooks and desktop computers and its graphics, video, and multimedia products and technologies can be found in desktops and notebook PCs, embedded systems, professional workstations, servers, and game consoles.

ITAC Online: What steps in your past were most important in getting you to your role with AMD today?

Matt Skynner: First of all, I consider myself very fortunate to be running the graphics business at AMD as well as being the general manager of our Canadian office. All of my experiences and education helped lead me to this role, but really there are three things that stand out. Firstly, I have a strong passion for our great products. I get to work in a company that makes cool graphics cards and technology that are the heart of Xbox One, PlayStation 4, Wii U, and slick computers like the upcoming Apple Mac Pro. Secondly, I have surrounded myself with great people. Strong general managers to drive the various lines of businesses, smart business people and the world's best graphics engineers. Finally, I love to lead a team to beat the competition. My goal has always been to be number one in the market for graphics cards. Throughout my career at AMD, that has been the mission. I have an unshakeable belief that we will succeed and that rubs off on the team. I have a clear vision of how we will do that and I communicate that to the team as clearly as possible.

What's your view of the microsystems sector in Canada today? As you look at the ICT landscape in Canada, what does the future look like to you? What are our strengths and challenges?

The microsystems environment in Canada is strong and has potential to grow by investing in innovative research initiatives. AMD is the eighth largest corporate R&D investor in Canada and is actively involved in the ICT community. We currently collaborate with numerous Canadian universities and are engaged with ICT associations, including ITAC. Government support certainly adds to the strength of the sector but challenges do exist with global competitiveness. Canada is increasingly being recognized as an influential player in ICT and companies like AMD need to continue to support these initiatives in order to increase our presence and growth in the ICT global arena.

You said in an interview earlier this year that gaming is really driving hardware development today... which struck me as a parallel to the way that car racing used to lead the way for developments in the consumer automotive industry. Do you feel gaming is still misunderstood in terms of its importance to technology innovation, and if so, what should people understand about it?

There are two things that drive graphics technology today: gaming and professional graphics applications. These also happen to be the fastest growing market for graphics processing technology. Just like in the auto industry, the technologies that are developed to meet the demands of enthusiasts are later implemented in the mainstream segments of the market. We leverage the technologies developed for high-end gamers into our mainstream graphics chips as well as integrate them with our leading CPU technology to make our accelerated processing units (APUs). Gamers are extremely knowledgeable and extremely demanding of graphics technology. At AMD, we have always recognized this and as a result depend on them to help drive our innovation.

Is gaming a mature market at this point? What are the opportunities for growth and/or further evolution?

While the gaming market is quite mature, with nearly $100 billion in annual sales of gaming hardware and software across all platforms, I believe there are always opportunities for growth. For example, the cloud gaming market for server graphics cards could grow to nearly half a billion dollars in the not too distant future. With the rollout of the next generation of game consoles completing this year, I believe there will be a surge of interest in gaming that will spill over to the PC gaming industry.

In a couple of the interviews you have given, you refer to AMD's vision... Could you summarize what that is, and what its impact might be on the broader ICT sector?

AMD's vision is to pioneer technology that frees people to push the limits of what is possible. For AMD's graphics business unit, our strategy to accomplish this vision is to create a unified gaming experience for our customers by leveraging our success in game consoles to improve the gaming experience on personal computers. In addition, we want to bring that experience to the millions of mobile users through our cloud gaming technology (where games are rendered on an AMD Radeon Sky graphics solution in a cloud gaming server and streamed to a mobile device). None of this is possible unless we work closely with content creators. We work closely with these game developers to ensure their games run great on our hardware, to bring cool new features to market and to bring great bundled gaming offers to our end customers through our Never Settle game bundles.

ITAC Events

Ontario Annual Reception – Toronto
Toronto
Tuesday, January 21 – 2014

ITAC News

2013 Ingenious Awards: Meet The Winners
Not-For-Profit University of Ontario Institute of Technology: Artemis Project

ITAC Encourages Trans-Pacific Agreement
ITAC President and CEO Karna Gupta has written to International Trade

2013 Ingenious Awards Winners Named
News Release 2013 Ingenious Awards Recognize Five Technology Innovators

Build In Canada Innovation Program Call For Proposals
Public Works and Government Services recently announced the fourth Call for

Canadian Chamber of Commerce Members Address Skills Shortage
ITAC joined fellow members of the Canadian Chamber of Commerce to

ITAC Applauds New Global Markets Action Plan
ITAC welcomes the announcement by Minister of International Trade Ed Fast

ITAC Releases 'Canada's Networks and the Digital Economy' Study
News Release Increased Use of Digital Technology Critical to Vibrant Economy

Other Events

2014 Wavefront Wireless Summits
Vancouver
Tuesday, February 4 – 2014

The Cloud Factory
Banff, Alberta
Monday, April 7 - 2014

To submit articles/news items/comments or to subscribe/unsubscribe please send an email to Lynda Leonard, Senior Vice President at leonard@itac.ca