



OneChip Creates New Opportunities to Improve the Deployment of 'Triple Play' Internet-based Services to the Home

OneChip Photonics, an Ottawa-based startup company, has developed a novel optical component that aims to accelerate the deployment of cost-effective, next-generation Internet-based services—including high-definition television (HDTV), e-business applications and video-on-demand.

"It would not be feasible, cost-effective or efficient use of resources to build a fabrication facility here at the university. CMC Microsystems provides tremendous value to researchers by providing access to world-class prototyping capability through the Canadian Photonics Fabrication Centre and other foundries across Canada and around the world. It allowed our team to de-risk the technology during the early stages of project and increase the commercial potential of our research."

Dr. Trevor Hall
Canada Research Chair in
Photonic Network Technology
University of Ottawa



Dr. Trevor Hall, Canada Research Chair in Photonic Network Technology at the University of Ottawa, co-founded OneChip Photonics in 2005. The Ottawa-based startup company has developed a novel optical component that aims to accelerate the deployment of cost-effective, next-generation Internet-based services—including high-definition television (HDTV), e-business applications and video-on-demand.

With over 1.2 billion Internet users around the world¹, customer demand for faster data transmission continues to rise. The speed of information transmission is critical to the deployment of Fibre-to-the-Home applications. OneChip Photonics, an Ottawa-based startup, is planning to hit the market with a new optical component that will transmit data over the Internet up to one thousand times faster than digital subscriber line (DSL) technology in 2008. It promises to help Internet users acquire and exchange information more efficiently and cost-effectively. A researcher at the University of Ottawa, enabled by CMC, contributed critical scientific leadership during the initial stages of the company's development.

Dr. Trevor Hall, Canada Research Chair in Photonic Network Technology at the University of Ottawa, co-founded OneChip Photonics with Dr. Valery Tolstikhin, now CTO of the startup, in November 2005. Since coming to Canada in 2002, Dr. Hall has benefited from the world-class research environment enabled by CMC.

For example, access to this capability helped to accelerate the design and manufacture of a novel optical component with complex functionality. In the early stages of the project, CMC provided Dr. Hall and his students with access to photonic design and fabrication expertise while assessing the manufacturability of the concept. The team then worked with CMC on the development of a fabrication strategy and the manufacture a first proof-of-concept device through the Canadian Photonics Fabrication Centre (CPFC) of the National Research Council Canada—a critical step in the R&D process that helped to demonstrate that the technology is sound. This initial prototype enabled the team to validate key functionality for the proposed device, representing an important first milestone in the overall fabrication of the component.

"This innovation will help bring 'triple play' services to the consumer. It will make video, data and high quality telephone, as well as Internet Protocol Television (IPTV) and high-definition television (HDTV), available in the home simultaneously," says Dr. Hall.

Dr. Hall leveraged the knowledge, relationships and experience acquired during this and other CMC-supported research projects when contributing scientific leadership as a co-founder of OneChip Photonics. The company continues to garner attention from the investment community after receiving \$1.5 million of first round venture capital in March 2007. Meanwhile, Dr. Hall and his research team at the University of Ottawa are continuing to collaborate with the startup.

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¹ <http://www.internetworldstats.com/stats.htm>