

## DCU Invent spin-out company tackles Internet capacity crunch



Pilot Photonics Ltd, a spin-out company built on the work of research teams in Dublin City University and the Tyndall National Institute in Cork, has succeeded in attracting seed investment of €300 000 from Enterprise Ireland and AIB Seed Capital Fund. This investment will allow company directors, Dr Philip Perry and Dr Frank Smyth to find a route to market for their optical networking technology which has the potential to dramatically

increase the speed of the Internet.

Enterprise Ireland's commercialisation funding allowed the technology inventors, Dr Philip Perry, Dr Frank Smyth, Dr Prince Anandarajah, Prof Liam Barry from DCU and Prof Andrew Ellis from Tyndall, to bring the commercially-relevant aspects of their work to a spin-out ready state. The subsequent seed investment now starts the spin-out on the challenging road to commercially exploiting the technology.

With assistance from DCU INVENT, the innovation, enterprise and knowledge centre, the research team has built an enviable portfolio of patented technologies and has accumulated significant expertise in state-of-the-art optical networking. The Pilot Photonics team has worked closely with Paddy O'Boyle of INVENT to transfer this Intellectual Property into the company. "The DCU research team has an international reputation in leading edge optical networking technologies. This immediately establishes Pilot Photonics as a market leader," says Richard Stokes, CEO of INVENT.

Anyone who has experienced conversation-disrupting delays on a video call over the Internet will be glad to know that this technology will help eliminate the delays and frustrations caused by Internet congestion. "One of the best kept secrets is that the accessible bandwidth of the optical fibre that makes up the core of the Internet is almost full - there's very little spare capacity in there," says Dr Philip Perry, CEO of Pilot Photonics, "Using our technology you can get more data down existing fibre-optic cables rather than having to dig up roads to lay new fibre."

The need for faster and more efficient optical fibre links will continue to grow, particularly as end users of the Internet move to cloud computing and video-intensive applications. "You will have a server, say, in Germany that has to communicate with some other server that is in London, so you need very high capacity, low delay connection," says Dr Perry. "We breathe new life into their systems so that network operators will be able to get more value out of their existing investment."

Pilot Photonics is developing technology that allows more information to be packed into existing optical fibres by cleverly bonding together several data channels in the fibre, cutting down on wasted bandwidth. Their first product to enable these so-called "Super Channels" is an Optical Wavelength Comb Source and they are developing further technologies that will also reduce cost and power consumption.

Pilot Photonics launched their first comb source product, which produces multiple wavelengths from a single laser, at the world's largest Optical Fibre Communications conference and exhibition in Los Angeles in March, "If the channels all come from the

same source you can pack them tighter together,” explains Dr Perry. “By carefully selecting the number of channels and their speed we can significantly reduce cost and the power consumption for network operators. For the end user of the Internet it means a faster, higher quality link through the Internet.”

The new technology is compatible with the existing optical fibres that currently connect countries and continents around the world, according to Dr Perry, and Pilot Photonics is now working with equipment vendors as they develop new approaches to support better Internet connections over the next decade. “The response we got in LA this month is fantastic.” says Dr Perry “We have the right technology at the right time and we have started to engage with key global players.”

According to Martin Lyes, Research & Innovation Manager at Enterprise Ireland, “Pilot Photonics is one of Enterprise Ireland’s high potential start-up companies and we are continuing to support the commercialisation of their technology by giving them access to business mentors who are helping the company shape their business plan and identify potential customers. Pilot Photonics Ltd is one of 30 spin-out companies that emerged from Higher Education Institutes in 2011 with support from Enterprise Ireland.”

*Pictured above - Dr Philip Perry, CEO of Pilot Photonics Ltd*