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An Australian researcher is on the road to riches after discovering a way to make broadband connections up to 100 times faster.

University of Melbourne research fellow Dr John Papandriopoulos is in the throes of moving to Silicon Valley after developing an algorithm to reduce the electromagnetic interference that slows down ADSL connections.

Most ADSL services around the world are effectively limited to speeds between 1 and 20Mbps, but if Dr Papandriopoulos's technology is successfully commercialised that speed ceiling would be closer to 100Mbps.

Stanford University engineering professor John Cioffi, known by some as the "father of DSL", was one of the external experts reviewing the research, which made up Dr Papandriopoulos's PhD thesis.

Professor Cioffi, who developed the computer chips inside the first DSL modems, was so impressed he offered the 29-year-old a job at his Silicon Valley start-up company, ASSIA, which is developing ways to optimise the performance of DSL networks.



Dr John Papandriopoulos has developed an algorithm to make ADSL connections up to 100 times faster

Dr Papandriopoulos, whose efforts also earned him the University of Melbourne's Chancellor's Prize for Excellence, said he would leave for the US in about two weeks. He has already applied for two patents relating to his discovery.

Melbourne Ventures, the University of Melbourne's commercialisation company, is now shopping the technology around to vendors of DSL equipment and modems. The vendors would then sell the supporting equipment to internet providers worldwide for placement in their exchanges.

Richard Day, commercialisation associate at Melbourne Ventures, was optimistic about the technology's licensing prospects but said it was too early to tell how lucrative it would be.

"That's a question which is impossible to answer, simply because we don't yet have a feeling for the extent to which it could be adopted ... [but] it has the potential to be adopted worldwide in any country that has a copper network," he said.

Dr Papandriopoulos is in the process of assigning the intellectual property for his invention to the university, but he stands to receive significant royalties from any licensing agreements.

"Many years ago people used to pick up the phone and make a phone call and you'd be able to hear a faint or distant telephone conversation taking place, and that's called cross-talk," Dr Papandriopoulos said when attempting to explain how his algorithm worked.

"That is not an issue for voice calls these days but it becomes a problem when you're trying to wring more bandwidth out of these existing copper telephone wires [which power ADSL broadband connections]."

"This cross-talk in current day DSL networks effectively produces noise onto other lines, and this noise reduces the speed of your connection."

Dr Papandriopoulos said his algorithm served to minimise that interference and thus maximise the line speed.

He said others had researched the same area but his project was attracting significant interest because it was more practical and easier to implement.

If it is successfully licensed to equipment vendors, Dr Papandriopoulos expects the technology to be implemented by internet providers around the world within two or three years. ■