

University of St Andrews
School of Computer Science

Distinguished Lecture Series 2001/02

Some Futures in Broadband Communications

By

Professor Derek McAuley
Marconi Laboratories, Cambridge

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Lecture Theatre C, Mathematical Institute,
North Haugh St Andrews

School of Computer Science, University of St Andrews, North Haugh, St Andrews, Fife KY16 9SS.
(Tel No. 01334 463253. Details on our web page: <http://www.dcs.st-and.ac.uk/Teaching/dislec.html#dislec.2>)

Biography

Professor Derek McAuley joined Marconi in January 2001 to establish the new Marconi Labs in Cambridge.

He obtained his B.A. in Mathematics from the University of Cambridge in 1982 and his Ph.D. addressing issues in interconnecting heterogeneous ATM networks in 1989. After a further five years at the University of Cambridge Computer Laboratory as a lecturer he moved in 1995 to a chair at the University of Glasgow Department of Computing Science. He returned to Cambridge in July 1997, to help found the Cambridge Microsoft Research facility.

His research interests include networking, distributed systems and operating systems. Recent work has concentrated on the support of time dependent mixed media types in both networks and operating systems.

Programme

10.00 – 11.00 Networking with the Reverend Bayes.

The realization that in any large scale deployed system something is broken all the time requires the use of defensive coding techniques. When taken together with an understanding of Bayesian statistics, we need to address more than simply coding, rather we should revisit the design of our distributed control algorithms. This talk introduces the theory and describes some examples of how we might use it to address current networking problems.

11.00 – 11.30 *Coffee*

11.30 – 12.30 An introduction to Optical Switching.

Conversion between optical and electrical signals within high speed communications systems is an expensive business, and consumes a lot of power. The goal of optical switching is to leave the communications signals in optical form as far as is possible. This presents challenges and opportunities to network and switch designers to overcome and exploit the interesting features of optical components.

14.15 – 15.15 Quality of Service - what's going to make it pay?

The type of QoS we see in the form of Service Level Agreements is a big deal for ISPs. However, this is a long way from the traditional multimedia view of QoS where it is expected to be specified for each instance of an application. Likewise, many Operating Systems and Middleware platforms take one of two views on QoS: either that machines are getting faster so who cares, or why not simply use a real time scheduling class. Are we ever going to drive QoS into the mainstream?

