

Teletraffic Research Centre



TELECOMMUNICATIONS NETWORK ADVICE, RESEARCH AND DEVELOPMENT

INDEPENDENT | LEADING EDGE | INDUSTRY FOCUSED

Established in 1986, Teletraffic Research Centre is one of Australian academia's longest-lived telecommunications research concentrations, focused on industrial and applied research and development.

We are an advanced engineering organisation, specialising in the design and analysis of telecommunications systems and networks. We bring state of the art research skills and internationally developed operational experience to bear on problems in Robustness, Reliability, Efficiency, Effectiveness, and Security.

Combining outstanding expertise with a focus on delivering outcomes to our partners, we are uniquely placed to provide independent leading edge analysis and advice on all aspects of network design and management.

Teletraffic Research Centre

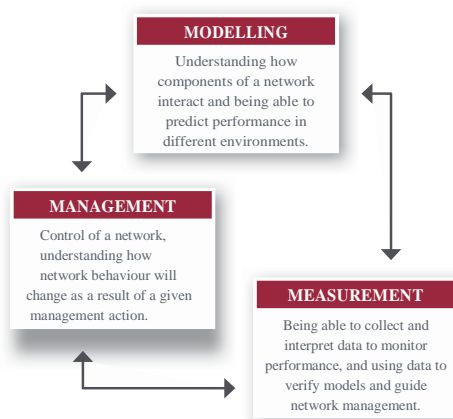
“Combining exceptional experience with outstanding research to deliver high impact solutions.”

OUR APPROACH

Our successes are enabled not just by our fundamental technical skills, but by our understanding of the importance of prediction, verification and action in making networks work.

This understanding of modelling, measurement and management provides a sound quantitative basis for delivering consistent and on-going improvement in network design and operation.

To be effective, technical excellence must be supplemented with operational experience – experience that strikes the balance between technical purity and the needs of the business.



OUR CAPABILITIES

Key research, development and consulting services and technologies we support include:

Services:

- Network design and capacity planning
- Quality of Service prediction
- Network management
- Monitoring and measurement analysis
- Survivability and Reliability analysis
- Software development
- Training and education

Technologies:

- Access: 3G, WiMax, WiFi, xDSL, Fibre
- Networking: IP, ATM, MPLS
- Transmission: WDM, SDH, Gigabit Ethernet
- Applications: VoIP, Video, Call centres, Distributed web services

OUR SUCCESS STORIES

- Developing state of the art systems for the monitoring and management of mobile data networks.
- Ground breaking research that provides mathematically provable methods for identifying oscillatory routing in networks, enabling configurations to be tested and debugged before deployment.
- Developing software to assist in the process of network change verification, software that has played an integral role in optimizing network infrastructure investment.

- Creating novel architectures for Multi-Protocol Label Switched (MPLS) networks that improve network availability while at the same time simplifying operations.
- Inventing new techniques for analysing network traffic measurements, techniques that enable better network engineering and identification of when and where to expand capacity.
- Developing new experimental platforms that not only predict network performance, but enable cost effective human and system in the loop experimentation.
- Assisting in the preparation of tenders for communications network upgrades, analysing proposed solutions, identifying potential bottlenecks and recommending robust, efficient designs.
- Identifying significant shortcomings in the robustness of Voice over Internet Protocol (VoIP) platforms, enabling our client to proactively address the issues before deployment.
- Developing new call centre routing algorithms for aligning our client's day-to-day operations with their business goals, thereby better serving their customers.

FOR MORE INFORMATION

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OUR TEAM

Our ability to provide the highest quality science and technology advice comes directly from the quality and experience of our people. Our expertise has been developed in leading research and development organisations worldwide, providing a combined experience of over 250 years in all aspects of network design, analysis, and management. Key members of our team are:

- **DR BRUCE NORTHCOTE**, Director of the Teletraffic Research Centre. He has over 20 years of experience in telecommunications, including Bellcore / Telcordia (USA), Fujitsu (USA), leading international standardization efforts and R&D focused on improved network capacity management.
- **ASSOC PROF MATTHEW ROUGHAN**, with over 20 years of experience in telecommunications, including AT&T Labs (USA), University of Melbourne and University of Adelaide, undertaking research focused on advanced traffic analysis techniques and improving network operations and routing.
- **PROF MICHAEL RUMSEWICZ**, with over 20 years of experience in the telecommunications industry and academia, including Bellcore (USA) and Ericsson (Australia), leading network analysis, research and development teams focused on improved network robustness and performance.
- **DR ANDREW COYLE**, with over 20 years of experience in network analysis and operations research, leading research in network performance analysis and experimentation.
- **PROF NIGEL BEAN**, with over 20 years of experience in network performance analysis, mathematical modelling and operations research.
- **EMERITUS PROF REG COUTTS**, Coutts Communications, with over 30 years of experience in the telecommunications industry and academia, and expertise covering government policy, wireless technologies, and industry development, most recently as a member of the National Broadband Network Expert Panel.
- **DR ASHOK ERRAMILI**, with over 30 years of experience in systems and network analysis at companies such as ITT and Bellcore, he pioneered new techniques in network engineering. He has developed analysis and optimisation algorithms that are at the core of numerous network engineering and scheduling products.
- **DR LEN FORYS**, an expert on networking with over 40 years of experience including time at Bell Labs and Bellcore. For his landmark contributions to the engineering of public networks in the U.S., he was recognized as a Bellcore Fellow in 1992.
- **DR RONNIE POTTER**, with over 30 years of experience in the telecommunications industry and academia, including Bell Labs and Bellcore / Telcordia, leading new industry initiatives with international scope; and providing R&D, consulting and training in areas of network architectures and international standards.