# THE NEXT GLOBAL CHALLENGE'

*If you haven't heard of **DR RAJKUMAR BUYYA** by now perhaps you've been away – on Mars. Dr Buyya, a graduate of Mysore University, is one of the leading brains behind grid computing. Last year, he was named the inaugural StorageTek Fellow of Grid Computing under a sponsorship deal between the University of Melbourne where he's a senior lecturer, and the US-based data storage company StorageTek. As part of the pact, Dr Buyya has undertaken joint research with StorageTek representatives into emerging storage technologies. Dr Buyya's PHD thesis, Economic-based Distributed Resource Management and Scheduling for Grid Computing, was presented to the Monash University, Melbourne in 2002. His research topics are out of this world and most of the time, he's globe trotting to lecture on grid computing and other IT-related issues. Dr Buyya spoke to **SIDDHARTH SURESH** about his research, IT and India.*

■ **How did you get into such serious computer research?**

My research career began in India in 1995 when I started working for the Centre for Development of Advanced Computing (C-DAC), Bangalore. I was part of a team that developed system software for India's PARAM supercomputers, which integrates ideas from high-performance computing and network computing fields.

■ **You are known to be the world authority on the democratised supercomputer. What's your idea of super computers to the masses?**

My idea of supercomputers for the masses is that their applications become ubiquitous and they are accessible to masses as easy as the Web. In fact, this is

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already happening. When you search for something on the Web using Google, your search request is processed by a network-based supercomputer, a cluster of 15,000 Linux PCs working together in background to serve millions of search requests issued by Web surfers from all over the world. How many Google users know that they their Web search requests is served by a supercomputer? Not even one percent of them. We need many more such applications for taking the benefits of supercomputing to masses.

■ **What is Grid computing?**

Grid computing takes the idea of Supercomputing to the global level wherein it advocates the idea of harnessing distributed resources, especially idle ones, to create an Internet-based parallel and distributed computing system. Such paradigm has been well investigated and put to regular use by projects such as SETI@Home and Alchemi.NET. This is just one of the several application models that we can experiment with Grid computing. Grid computing holds much promise when we are able to look at it as a technology that enables the sharing of resources--not just computers, but also scientific instruments, and digital contents—and capabilities (e.g., people's expertise) owned by different enterprises and organizations. Such infrastructure and capability enables us to carry out Science and vation. Compared to the situation a couple of years ago, nowadays serious research in IT is happening in Indian IT industries. The future is bright and I am optimistic that the world's R&D efforts in IT in 2020 and beyond will be led by India!

■ **WHat's your take on outsourcing?**

At this moment, IT development outsourcing to India is due to two factors: (a) cost cutting by corporates and (b) Indian IT skills are really competitive compared to the rest of the world. But the first is slowly becoming insignificant and in few years time, the main factor that plays in India's favour will be Software Engineering skills and expertise with its institutes and corporates.

■ **Which is the best area where Australia and India can work together on IT.**

Australia is quite strong in some scientific domains. Australia and India could work together in tapping each others expertise and produce next generation science and IT applications.

■ **If you were to be made the IT minister of India, what would you have done first?**

Formulate and implement an educational and research programs that will aid Indian IT industries in making India the world's IT superpower not only by developing commodity software technologies, but also innovating new ideas needed for taking IT to the supreme level.