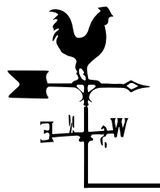
# Winds of change



by Dr Tim Kannegieter

Innovation has long been held up as the key to future prosperity. Few question its value and there have been innumerable initiatives to encourage it, yet there is a sense that Australia still needs to do more, reflected in Engineers Australia's recent report on *Innovation in engineering*.

Perhaps it is no coincidence that the national president of Engineers Australia for 2013, Dr Marlene Kanga, is the chair of Engineers Australia's Innovation Task Force and one the most vocal champions of the need to drive fundamental change within Engineers Australia.

"We will not be maintaining the status quo in 2013. The agenda for Engineers Australia is reformist and transformational."

Kanga is not a shy person. She has strong views and is not afraid to let them be known, to good effect. This is immediately obvious to anyone who has met her.

"I am the sort of person that sets ambitious goals and sets out to achieve them," she said.

This forceful approach to driving change has served her well, particularly in the development of her businesses (see A diverse background p27). Now she is bringing this energetic approach to her term as president of Engineers Australia.

Kanga already has a long history of driving change at Engineers Australia. For example, she facilitated development of the first risk management framework at Engineers Australia, which is now being used to guide internal auditing processes. She has also driven the introduction of risk management for public safety at Engineers Australia events and site visits.

Apart from specific initiatives, Kanga has been deeply involved in driving changes at a fundamental level, starting with governance and its expression in Engineers Australia's range of regulations. She has been involved in governance reviews of college boards, special interest groups, technical societies,

> "We need to provide leadership as a learned society, make membership essential for engineering professionals and become a trusted voice of the profession"

Engineers Australia national president for 2013, Dr Marlene Kanga.

Engineers Australia's International Committee and Engineers Australia subsidiaries.

Not only does Kanga think of her approach as driven, she also prides herself as being values-centred and this colours her personal approach to all her activities.

"It's a privilege to hold any position at Engineers Australia," Kanga said of her appointment. She argues that office holders have an ethical responsibility to deliver a contribution that makes a difference. "They are not just filling a position."

This focus on values manifests itself in many ways. For example, she established a remuneration committee in 2011 to oversee the performance of the CEO of Engineers Australia.

Kanga said she is able to see things from the view of what she calls the "silent majority of members". In particular she felt that, for most of her career, "the structure and function of Engineers Australia made it completely remote from my life and work as a professional engineer. I came to Engineers Australia meetings for my CPD but I didn't get involved in the organisation. I had a view of Engineers Australia as an insider's club, something that was quite difficult to break into.

"I felt it was important that we open Engineers Australia up – to provide opportunity for members, to provide information transparently and to have open conversations."

Engineers Australia is currently implementing a process to handle complaints about its services, but Kanga noted there is nothing formal in place to handle other kinds of complaints.

"I want to put something in place that handles these kinds of complaints effectively and confidentially. Staff of Engineers Australia and its office bearers need to hear the hard issues and not just anecdotally at events.

"Some members are very vociferous in their criticisms of Engineers Australia and we need to value their comments. The fact they are passionate about our organisation is good, it means they care and are not apathetic. We have to ensure they remain this way and we have to regain the trust of those who have given up.

"I will not tolerate any member's view being dismissed or thought of as dangerous. There will be a germ of truth in what they say."

Kanga has a number of specific objectives for her presidency in 2013, set out in her introductory column (see p3). However, if there is an over-riding theme, it is that "we need to increase the relevance of Engineers Australia to the profession".

"We have a declining share of the proportion of the engineering professionals who are members because many engineers do not see Engineers Australia as being a key partner in their development," Kanga said.

The key to increasing the percentage of engineers who are members of Engineers Australia is "re-focus the priorities of the organisation on its core values". Kanga said this will be achieved primarily by improving the services and support for members.

"Firstly, we need to lift the quality of CPD to a point that it is truly valued. To do that we need to better support our volunteers in the way they produce CPD.

"Secondly, we need to ensure the success of recent changes to the chartered program by making sure employers understand its benefits – that having chartered staff is a kind of quality assurance."

Underpinning this is the need to drive home structural changes to our learned society that we have already started, Kanga said.

"We need to have the right structures in place and give colleges clear goals. We then need to give them the resources to achieve those goals. Volunteers are largely operating with little support from staff."

According to Kanga, another issue with the colleges is that many of their board members are not clear about their roles.

"This needs to change and I am pushing for induction programs for each role in the learned society. I did this for the Women in Engineering special interest group," Kanga said.

Another aspect of being relevant to the profession is for Engineers Australia to truly be the voice of the profession.

Kanga said: "We need to engage more with government and community – to influence policy and let the community know what we do. We need more engineers on air commenting on major developments, Engineers Australia is too often silent. We also need to participate in broader societal debates, not just infrastructure, energy and resources but innovation, smart manufacturing and emerging technologies."

In 2013, there is no "theme of the year", such as the Year of Humanitarian Engineering in 2011 and the Year of the Regional Engineering Team in 2012. Rather, Engineers Australia will focus on its core operations without the distractions of a theme, Kanga said.

"The coming year will be a watershed when we will make big strides within Engineers Australia". ■

Marlene Kanga with her family (l-r) Jehan, Rustom and Zubin.

## A diverse background

As part of her presidency, Marlene Kanga wants to celebrate the diversity of backgrounds that engineers come from and the way this makes an innovative contribution to engineering. She is a case study of such diversity herself – being the first president who is a mother and also Asian born.

Kanga was born in Goa, India, and studied engineering at the Indian Institute of Technology in Bombay, one of the leading engineering universities in India. At the time 20,000 people sat for the entrance test to join IIT and only 200 were selected.

"When I went to the building where they posted those selected on a notice board, my name was not on the list. I was absolutely devastated. My family tried to say I could do something else, but I was inconsolable. I only wanted to do engineering. Three days later, I got a letter to say I had made the course. It turned out my name was at the bottom of page one, which had got cut off during the printing."

Kanga was only the second woman to graduate from the chemical engineering course at IIT. She then completed her masters in industrial safety from Imperial College in London before migrating to Australia in the late 1970s.

She applied for more than 200 jobs before finally landing a role. This experience helps her empathise with migrant engineers.

"I often tell migrant engineers I meet that they just have to persist. The first job is the hardest and they just have to take whatever they can get, learn about how things work in Australia. From the second job onwards you will never look back."

Kanga now calls Australia home with two sons "who play Australian music". One son, Zubin, has a computer science degree but is now doing a PhD in music at the Royal Academy in London. The other son, Jehan, is doing a PhD in Chemistry, synthesising nanomaterials at the University of Sydney.

Becoming a mother was indirectly responsible for her current business success. During her first pregnancy, Kanga decided to do some consulting in risk management. It became so successful that she continued after her second pregnancy, establishing a company called Business Technology. The work has primarily been in the chemical industry with experience in refineries, gas treatment plants and similar facilities, as well as power stations.

Kanga developed a number of quantitative risk analysis methods and wrote the first version of the NSW HIPAP papers on risk criteria and hazard analysis which are still referred to today.

Leveraging her business experience, Kanga went on to cofound a new company with her husband, based on his research in automated camera-based surveillance systems. iOmniscient now has more than 30,000 software licences installed in more than 20 countries, including customers such as Qantas, Disneyworld and BP.

Kanga has been a member of Engineers Australia for more than 30 years, is chartered and has won two National Engineering Excellence Awards, one relating to the Year of Women in Engineering when she was Deputy Chair of the National Committee and the other relating to the work of iOmniscient. ■

## On young engineers

Engineers Australia is young at heart with a third of subscribing members below the age of 35. If students are taken into account, the figure is over half. This is a great basis for moving forward, Kanga said, but it is not enough.

"A lot of young engineers sit in on meetings but do not actively participate or become involved in the organisation."

Kanga will be working with the National Committee of Young Engineers Australia on a strategy for young engineers to be more actively involved.

"Young members are vital to future-proofing our organisation. I will be working specifically to actively engage young engineers in the leadership of the organisation. Already we have a young engineer, Carla Cher, recently elected to Council.

"Young people need to understand that engineering can be a creative, innovative and exciting career and the community needs to understand the significant contributions that engineers and engineering makes to modern life. The coming year will also be an opportunity to change the image of the engineering profession and to show Australians, especially young people, that it is a dynamic, creative, innovative and exciting profession." ■

## On an inclusive profession

Kanga has been a long-time advocate of encouraging women in engineering. She was deputy chair of the National Committee for Women in Engineering (NCWIE) in 2007 during the year of women in engineering. This was followed up when she became chair, with the release of an Attract, Retain, Support and Celebrate strategy, which she says has become a mantra for women in engineering in Engineers Australia.

In addition, there have been a number of specific initiatives such as increasing the number of female Fellows and a doubling of the number of women Honorary Fellows and a scholarship program. She is particularly proud of the Career Break Policy for all chartered engineers, which will particularly help women on maternity breaks.

"I went to the World Federation of Engineering Organisation meetings at my own cost because I was committed to supporting the Women In Engineering committee there. I'm also on the Board of International Network for Women Engineers and Scientists and contribute to the development of women in engineering groups around the world at my own expense."

"I am committed to an inclusive profession that provides opportunities for all groups including women, overseas born engineers and indigenous engineers." ■

Kanga co-chaired the 15th International Conference for Women Engineers and Scientists, held in Adelaide July 2011. At the same event she organised the first meeting of the Asia Pacific Nation Network for the International Network for Women Engineers and Scientists, which has led to the establishment of women in engineering groups in Taiwan and Mongolia. Kanga (centre front) is shown here at the event with engineers from Asia and Africa who received travel awards from UNESCO.