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## MARLENE KANGA

*Exclusive interview*



DRIVING GENDER AND RACE DIVERSITY IN AUSTRALIAN ENGINEERING







Leading Australian engineer and successful entrepreneur, Marlene Kanga, talks to Tony Featherstone about her pursuit of gender and race diversity in Australian engineering.

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Q&A with

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# MARLENE KANGA

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**M**any directors start their journey to governance during an executive career. Marlene Kanga's journey started in a village in western India in the 1950s. She first learned about governance and serving others through her family's community leadership.

Her small village, in Goa State, had two wells and only received its first water tap connected to public supply in 2011. Dr Kanga AM FAICD, a bright child who loved science and maths, read as much as she could until dusk, before oil lamps came out at night.

She recalls people enjoying a ride in her

family's car, the first in the village, and the disbelief when her father, a prominent engineer, said the village would be electrified and there would be a light in each room. It was then that Kanga saw the connection between engineering and the community.

"Engineers talk about the nuts and bolts of projects, but they don't talk about the impact on the hearts and minds," she says.

"Women tend to think more about the social impact of engineering on the community and are often attracted to the profession because of it. I've seen how engineering can fundamentally change the





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lives of people and give them hope."

As a director of Sydney Water Corporation, Kanga might think a little differently about the natural resource than her peers. But a different approach to engineering, leadership and diversity has characterised Kanga's remarkable executive and governance journey.

Gains were hard won. Following in the footsteps of her father, who led the electrification of India's west coast, she studied engineering in India in the 1970s. At the time, there were 2,000 male and 20 female students on campus. Kanga

complained about the poor facilities for women and was elected to student leadership positions.

Her father's business partner, an Australian, gave a sense of this country's opportunities and Kanga was hooked. When she arrived in the 1970s, the Department of Immigration did not recognise her undergraduate and masters qualifications in engineering (awarded in England) and said she would never get a job in engineering here.

Using the Yellow Pages, Kanga identified 200 companies, wrote to them, and a year

later was employed as an engineer. "When I arrived in Australia people wanted to know if I was somebody's secretary or sister," she says. "They weren't used to an ambitious young female engineer from India."

Kanga eventually joined Esso Australia and later successfully campaigned to management and the board for better childcare facilities. She started a business in 1983, partly to achieve flexible working hours so she could raise two sons.

Kanga, now a leading Australian engineer and successful entrepreneur, co-founded iOmniscient, a software technology developer for video analytics systems, with her husband and remains a director. iOmniscient has 50 staff here and in Canada.

She also founded a consultancy that specialises in safety engineering and drafted the first *Risk Criteria for Land Use Safety Planning* for government, most of which is still used today. "The community doesn't see the risk criteria for safety. But I know the difference it has made over the years in making workplaces and the community safer. I'm very proud of that work."

Kanga's drive for change saw her elected president of Engineers Australia, the peak body for more than 100,000 engineers, in 2013. She was the second woman in 97 years to chair the organisation and was on its National Council from 2007 to 2014.

During her one-year term as Engineers Australia president she helped modernise its governance, strategy and technology. "I told the members I was there only to serve them. I grew up serving others, doing the right thing and not being afraid to speak up when change was needed. I never set out to be a company director but that approach ultimately led me towards governance."

Kanga is acting chair of the prestigious Innovation Australia and chairs the R&D Incentives Committee, the country's largest support program for industry innovation, with a \$2.5 billion program. She is also a director of Asialink, which helps develop Asia-ready skills for Australian business, a crucial area as growth in Asian middle-class consumption soars.

Her experience in driving gender and race diversity in engineering – and in innovation and technology more broadly – has given Kanga valuable perspective on the benefits of personal differences. She wrote an important paper in late 2014 titled, *A Strategy for Inclusiveness, Well-Being and Diversity in Engineering Workplaces*, to address the problem.

Supported by the Federal Government, the Workplace Gender Equality Agency, Engineers Australia and other professional



bodies, the paper makes a compelling case to develop female engineers and encourage young women to study maths and science.

Women represented 11 per cent of Australia's engineering workforce, according to 2011 census data. Of that, about one per cent of female engineers were aged 50 or over, and more than half of those were migrants. Less than four per cent of female directors are engineers or scientists, data from the Australia Institute of Company Directors (AICD) shows. Kanga says that all too often, the country's best and brightest female engineers leave the profession too early because it is still designed for men.

"Most of the large engineering companies offer flexible working arrangements and have policies to support their female employees," she says. "But it's the hygiene factors that aren't immediately obvious that turn women away from engineering. Even today, you can still go to mine sites that have terrible facilities for women, or you are asked to wear a safety shirt that was designed for a man. It's degrading, so after a while, women vote with their feet and take their talent elsewhere."

A lack of female engineers has long-term ramifications, she says. "It will reduce Australia's international competitiveness and see us fall even further behind other countries in science, maths and technology. Poor gender, race and skills diversity in business will also make Australia less innovative and it means companies are not getting the most out of their talent. It's a terrible waste."

Kanga's journey shows how champions of change can come from the unlikeliest places. From the humblest of beginnings, she was the first woman to be awarded Professional Engineer of the Year in 2014 by the Federation of Engineering Institutions in Asia and the Pacific.

She was named in the Top 100 Engineers in Australia from 2013 to 2015, and in the Top 100 Westpac Women of Influence in 2013. Being made a Member of the Order of Australia in 2014, in the Queen's Birthday Honours, was a highlight for this proud Indian-Australian.

Kanga sees community service as a higher calling. A Catholic who attended church most days growing up in Goa, she talks about her love for family and friends. Her oldest son, Zubin Kanga, a contemporary Australian pianist, shares his mother's love of innovation. Her younger son, Jehan Kanga, is completing a PhD in chemistry and doing ground-breaking research on new materials.

With successful businesses and several directorships, Kanga has a busy board

portfolio, but hopes to be appointed to more.

She has come a long way from the child who turned on the runway lights at the Indian airport her father electrified. Now this passionate engineer is illuminating governance through a vision for diversity, engineering and innovation.

Here is an edited extract of her interview with *Company Director*:

**Company Director:** *What got you interested in boards?*

**Marlene Kanga:** I come from a family who were leaders in the village. Leadership came naturally to me. Even at university I gravitated to leadership positions because I was used to seeing my parents do it. It was a natural progression to boards; I grew up with a mentality to serve my community and stakeholders. I've found that always pays big dividends and comes back in ways you don't imagine.

**CD:** *What attracted you to the role as president of the National Council of Engineers Australia?*

**MK:** I had been on the board for seven years and knew the organisation well and what changes had to be made. At the time, I felt it was a conservative, slow-moving organisation with low membership growth. For many years the organisation had been a boys' club and I never got involved because I was busy raising a family, but I was among the silent majority who wanted change and I had that "member lens" to make things better.

**CD:** *What were the biggest achievements in that role?*

**MK:** My goal was to make Engineers Australia more relevant. Working with others, I established a coherent vision and strategy for the organisation and it still serves them well. Another goal was to strengthen its governance systems and structures. I brought together 30 disparate policies that had been passed at various times and had inconsistencies, and brought into the fold various groups that had never been recognised. For example, our

international chapters had been formed on an ad hoc basis and were growing strongly. I consulted widely and travelled around Australia to get buy-in from lots of members.

**CD:** *Is Australia doing enough to develop female engineers?*

**MK:** No. We are falling behind other countries. For example, Malaysia in 2010 recognised it needed more scientists, male and female, so it developed a strategic plan to increase the number of science and maths teachers, and university places, in these areas.

As a result, Malaysia is catching up fast to Australia. They have 10 times the number of engineers graduating each year. Only seven per cent of all engineers in Australia are women, even though about 16 per cent of students studying engineering at university are female. By comparison, 50 per cent of students and more than 20 per cent of engineers in Malaysia are women.

**CD:** *How do we encourage and develop more female engineers?*

**MK:** Our surveys showed 90 per cent of engineering companies have flexible working arrangements and other policies to support women, but the profession still loses too many. The male leaders in the sector said: "what do women want?" as if this is a woman's problem. This problem is about a tough workplace culture and systematic organisational bias. It's deeply entrenched and too many women tire of it and just walk away.

**CD:** *How has your experience in safety shaped your views on gender diversity?*

**MK:** When I started in safety, workers wore singlets and thongs and said: "she'll be right, mate" when reminded about safety. Today, you have to wear the right gear no matter who you are, from the chair to the worker in the field. Safety is now the first item on the agenda for many boards and there is a safety policy that the chair and CEO signs. As a result of this visible leadership, our safety profile in Australia is, in many cases, world-class and the change has been achieved in

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**"EVERYBODY KNOWS ASIA IS A GREAT LONG-TERM OPPORTUNITY FOR AUSTRALIAN COMPANIES, YET WE ARE DOING LITTLE TO DEVELOP DIRECTORS WHO TRULY KNOW THE REGION AND ITS PEOPLE."**

less than 20 years. The gains in safety started with cultural change in organisations. A similar transformation can be achieved with gender and race diversity.

**CD:** How can boards of engineering companies drive greater diversity in their organisations?

**MK:** Change for female engineers, or any women in the workforce, must be driven by the board. It must recognise that this diversity is a values-based leadership solution that says: "this is how we do things in our organisation". They must think: "we want you at the table because we value your differences, not in spite of them. It means you have something new to contribute. If we do that, we will have better products, better governance because we provide equity of opportunity, and we are making the best use of the organisation's people and resources".

**CD:** Should engineering companies have quotas or targets for women on boards?

**MK:** Targets have positives and minuses. If you have targets without cultural change, that becomes detrimental because women engineers will be seen as gaining positions without deserving them.

**CD:** Why does Australia have so few Asian or Indian directors on its boards?

**MK:** At a board level you are individually and collectively responsible, so you need people you can work with and trust. Some boards shy away from people they don't know as well or who are different from them in whatever respect. But that is the power of diversity. That diverse group makes you smarter.

Research in American scientific literature shows that when you are in a group with people you don't know as well, the mental cogs turn harder. The slight discomfort and harder thinking results in better outcomes. According to McKinsey, diversity and inclusion, that is, not just having different people, but hearing what they have to say, is the most effective measure in improving a company's bottom line. Companies in the top quartile for diversity and inclusion

have up to 45 per cent higher earnings and less volatility, because of improved products, greater innovation and better risk management.

**CD:** Have boards generally done enough work on diversity?

**MK:** Huge progress has been made. We've gone from 8 per cent (female directors of S&P/ASX 200 companies) to 20 per cent in a very short time. AICD has played a tremendous leadership role and should be applauded. But we still have a small group of women on the top boards and not nearly enough women on boards in the scientific, engineering and technology space.

It's the same with Asian-born directors or directors with experience in Asia. When you live or work in Asia you develop a particular kind of cultural intelligence to understand the ways of doing business, which are quite different from Australia. Everybody knows Asia is a great long-term opportunity for Australian companies, yet we are doing little to develop directors who truly know the region and its people.

**CD:** What are the three key messages from your paper, "A Strategy for Inclusiveness, Well-Being and Diversity in Engineering Workplaces"?

**MK:** First, this is a leadership issue about changing the culture to be more diverse and inclusive. Second, diversity and inclusion is an opportunity for financial performance and innovation; it's not a cost. Third, implementing a diversity strategy is not a huge cost. Companies already invest a huge amount in their female workforce but are not getting the full dividends, especially in the engineering and technology sectors. So this is a strategic repositioning of what's already in place. An innovation is the use of leading and lagging indicators, drawing from the experience with safety, to measure progress.

**CD:** Does engineering get the recognition it deserves in Australia?

**MK:** No. Most of the major issues we face today – climate change, energy and water

security – all require engineering solutions. No country or company can afford to ignore them and we need more engineers, male and female, to solve these problems.

**CD:** You are on the board of a private technology company. What's the challenge of governing a disruptor?

**MK:** You have to be able to look at the opportunities while balancing risk. Australia needs a lot more innovation to remain an advanced economy. We have lots of great ideas but they don't get commercialised, or get commercialised overseas.

**CD:** What's the most disruptive thing you have done?

**MK:** Being a female, Indian engineer in Australia in the 1970s.

**CD:** Why is Australia so poor at commercialisation?

**MK:** We don't translate enough of our great research into products. Half the PhD students in Germany, for example, work on industry problems. In Australia, too few PhD students work on current industry problems.

Also, Australia has lots of small companies that find it hard to raise capital. It's all to do with incentives. We need the right framework to encourage universities and industry to work together, and more incentives for venture capital. Australia bets more on the Melbourne Cup each year than it invests in venture capital in early-stage companies. So we are risk-takers. However, we need to understand the risk and opportunities from new technologies and innovation.

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**CD:** *How have you found the acting-chair role on Innovation Australia?*

**MK:** I've really enjoyed it. It's an opportunity to drive positive change and to talk to people, engage with stakeholders, and policymakers on a national strategic approach to Australia's policies on science and innovation.

**CD:** *How do boards know if their organisation has a truly innovative culture?*

**MK:** You look at its products and services. Sydney Water, for example, is very innovative in how it manages its assets and serves its customers, and is collaborating with research groups to drive innovation. Every organisation can and should innovate, even one that is a basic utility can have cutting-edge innovation.

**CD:** *How can Australia create a more vibrant sector of tech start-ups?*

**MK:** We need to build an ecosystem that improves collaboration across Australian researchers, investors and industry. We need more people with science, technology and

engineering skills, and skills with venture capital as well as more venture capital funding to support innovation.

**CD:** *How can Australian universities drive more innovation?*

**MK:** Young people are a great source of new ideas. Consider MIT in the US: more than half its graduates now start their own business and the value of those created is in the trillions of dollars. The National University of Singapore targets 50 per cent of students to be entrepreneurs, so increasingly universities around the world are embracing innovation.

Our universities, too, are looking at that model and providing support for young innovators and entrepreneurs through incubators, to develop their ideas. Young people can afford to fail and start up again and along the way develop great leadership and management skills as well as, perhaps, our future Australian companies.

**CD:** *Will we see you on more boards in coming years?*

**MK:** I would like to. I love the work and have a lot of energy to give. I see board work as a privilege to be able to make a contribution to Australia. I know it sounds corny, but I have never lost my passion or love for this country, and the opportunities it gave me.

**CD:** *How do you relax away from work?*

**MK:** I enjoy business and board roles, probably too much. I like music and the piano, but don't have my son's natural talent. I love yoga, gardening, bush walking and spending time with family and friends. I have no grandkids yet but I am still waiting. ■

