

DRIVES & CONTROLS HAS ASKED LEADERS FROM THE AUTOMATION AND MOTION ENGINEERING SECTOR TO GIVE THEIR VIEWS ON TOPICS THAT THEY BELIEVE ARE VITAL TO THE SECTOR. OVER THE NEXT 34 PAGES, YOU CAN READ THE OPINIONS OF WIDE RANGE OF CONTRIBUTORS FROM DIFFERENT PARTS THE INDUSTRY ON A VARIETY OF SUBJECTS, BOTH TECHNICAL AND NON-TECHNICAL. IF YOU AGREE – OR DISAGREE – WITH ANY OF THEM, LET US KNOW.

# Teach your children well

TONY INGHAM SALES AND MARKETING MANAGER, SENSOR TECHNOLOGY

There was a time when a carefully chosen line from a 1960s song would have made a great headline for an editorial opinion piece. Sadly, Crosby, Stills and Nash are no longer young and many of their original followers are now well into retirement.

And it seems that the UK engineers in their fan-base failed to follow the parenting advice in one of their most famous songs. As a result, 2015 started with a damning report on how not enough young people are going into engineering and technology careers.

The bare bones of the facts are that Britain needs about 200,000 kids to start engineering apprenticeships or degree courses each year, but we are currently falling short by over 50,000. As a result, the UK engineering industries are not achieving their full potential – to the tune of about £20bn in 2015. This figure is expected to rise, year on year, while other countries strengthen their position in the international technological markets.

EngineeringUK's annual *State of Engineering* report, published in January, shows that the engineering sector contributed nearly £500bn (27%) of the UK's GDP in 2014. This led many industry captains to issue rallying cries, which can be summed up as: do more to encourage kids into the

STEM (science, technology, engineering and maths) streams of education; and that industry, academia and the government need to work hand-in-glove to tap into this wellspring of emerging talent.

However, it was not all gloom and doom. The 27% figure represents a significant increase in the importance of engineering to the UK economy; before the recession, the number was in the mid-teens. Consequently, we can conclude that the Government's stated objective of refocusing the national economy away from overdependence on the flighty financial sector is working. But we must look to the future and develop the next generation of engineers, scientists, technologists and mathematicians.

When I am not working in the field of sensing and control engineering, I run a Sea Cadet unit. I regularly witness, first-hand, how enthusiastic a teenager can become when something grabs their attention. It is my role to ignite and nurture this excitement, and one very important rule I have learned is that not all teenagers are the same. Each needs to be encouraged in their own, unique way, and if I get it right, the results can be phenomenal.

This effect is actually reflected in another recent report, the IMechE's *Five Tribes*:

*Personalising Engineering Education*. It says one size does not fit all; each teenager needs an individualised introduction to the possibilities of technology careers. It identifies five groups:

- STEM devotees – perhaps the most obviously fertile ground;
- social artists – creative and capable people;
- enthused, unfocused – passionate about STEM, but lack confidence;
- individualists – independent, innovative and potential entrepreneurs; and
- less engaged – a small group. Need encouragement, not writing off.

It would be easy to dismiss this as an oversimplification. But it is better to see it as a "primary classification" – a first step in a process. It accords very much with my experience with the Cadets, and could lead to a whole generation of capable and innovative engineers.

And a final comment on how attitudes to STEM are improving: 2015 has kicked off with two very successful British films – *Theory of Everything* and *Imitation Game*. They, respectively, feature a physicist and a mathematician as their central character. To my mind it is better to make role models out of such people rather than superheroes, boy wizards and hobbits! ■



I REGULARLY WITNESS, FIRST-HAND, HOW ENTHUSIASTIC A TEENAGER CAN BECOME WHEN SOMETHING GRABS THEIR ATTENTION. IT IS MY ROLE TO IGNITE AND NURTURE THIS EXCITEMENT, AND ONE VERY IMPORTANT RULE I HAVE LEARNED IS THAT NOT ALL TEENAGERS ARE THE SAME.