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Appointments

The sector's top jobs, p97

Strategy

Keeping a lid on costs

Recruitment

In-house versus agency

IT

SOA - business super glue?

Energy costs

New power saving tricks



Reaching for the stars

Sir Martin Sweeting on innovation and space exploration



LEAD STORY

The Darling budget

Space ace

Sir Martin Sweeting, businessman, manufacturer and research professor, tells Gay Sutton how he intends to place UK industry at the very heart of the global effort to conquer space

Professor Sir Martin Sweeting OBE holds a unique position: he successfully bridges the gap between the academic world and the business of manufacturing. He has a foot firmly in each of these seemingly opposite camps. On the one hand he is founder, CEO and now chairman of Surrey Satellite Technology Limited (SSTL), while on the other hand he is director of the University of Surrey Space Centre where he guides the efforts of 50 PhD students. “It’s that mixture I find most personally rewarding. If I was purely an academic, I think I’d get quite frustrated. And the pure commercial I find also just a little bit short focused.”

Sir Martin has made the synergy between the two work in an economically profitable way. SSTL has carved an enviable position as the world’s leading authority in the design and manufacture of small satellites, exporting its products to governments and businesses around the globe, including the US, China, Japan and Russia. SSTL satellites provide an enormous range of services including GPS for global navigation systems – and where would we be without our sat navs – data for disaster assessment and monitoring, and crop recognition and monitoring. The company has concentrated on technology to reduce the size of its satellites, improve their technological capability and lower the costs dramatically. “Seven or eight years ago our satellites would have been twice the size of this room and would have cost 10 or 20 times as much. Now they are the size of this table.”

Sir Martin is determined that, as the world gears up to send men to the Moon and Mars, the UK will utilise its technological capability and play a key role. “In the 1880s gold rush, people rushed out and dug for gold. Not many made much money. Those who really profited were the folk that ran the railways, provided the hotels and the food, the shovels and water and so on. We can’t possibly afford... a proper manned space mission. But rather like the railroad people, we

can provide the infrastructure to support these exploration programmes.”

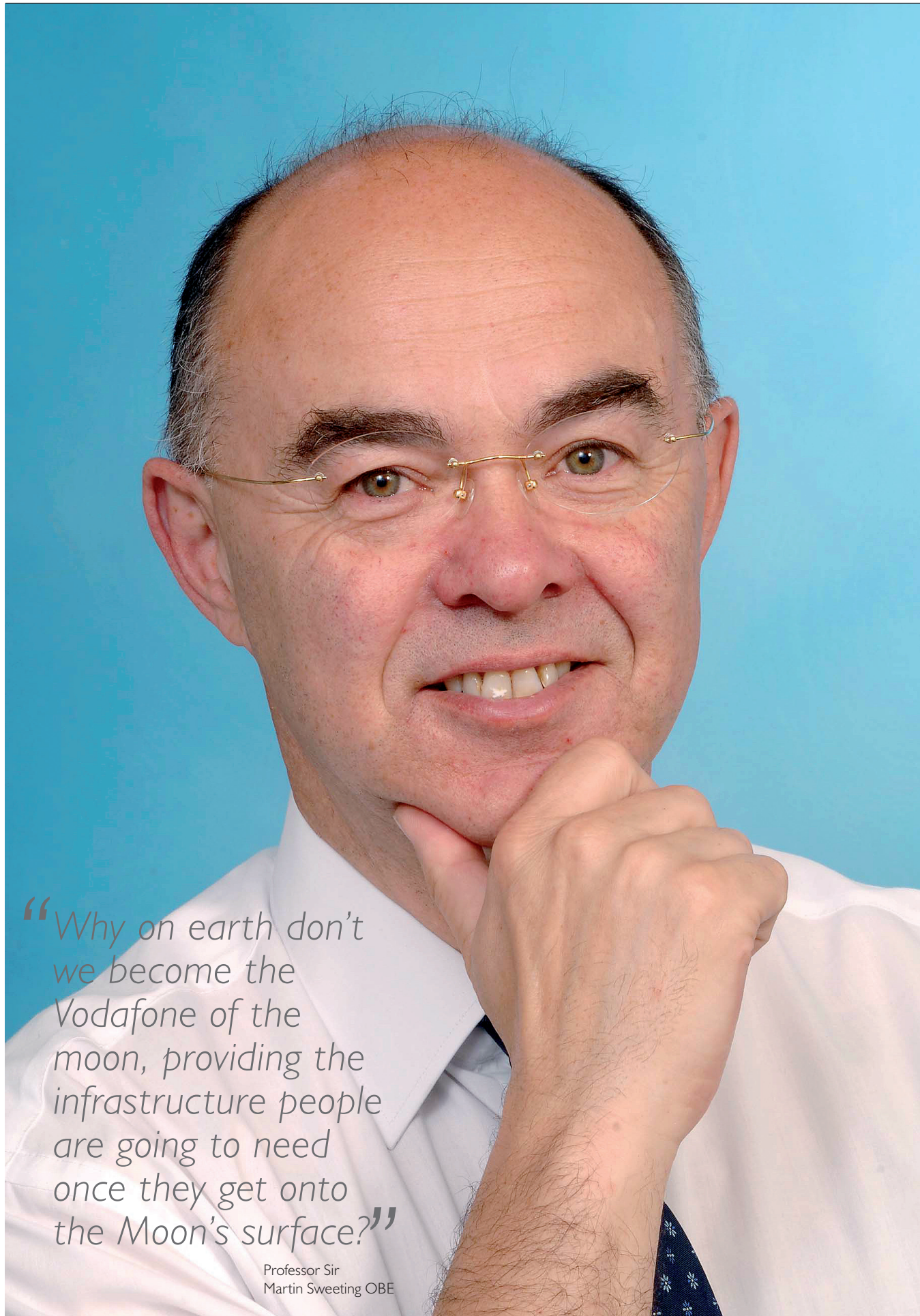
If the UK just “sits on its backside and watches what happens,” he believes it will be incredibly difficult to join the party later. “We should play on our strengths in small satellites, robotics, communication and navigation, and play a small but niche role in the international exploration programme. Then use that to create economic benefit. It will also get [us] a seat at the table when they’re sending teams to the Moon and the UK wants to have a national presence.”

Sir Martin has been working on the concept for over 10 years. “We started in 1996, so patience is a virtue in this game.” As well as leading the initiative and being very passionate about it, he has also produced a solid and persuasive business plan. “In the last year we have put a proposal to the STFC (Science and Technology Facilities

If the UK just “sits on its backside and watches the space programme happen,” it will be very difficult to join the party later

Council) that the UK should undertake two small lunar missions called MoonLITE and Moonraker.” MoonLITE consists of a lunar orbiter crammed with communication and navigation equipment which will shoot highly equipped darts into the moon’s surface to report on its geology. One of its aims will be to demonstrate satellite technology for communicating with the earth, and providing navigation systems on the Moon. And this is where Sir Martin can see a huge business opportunity: “Why on earth don’t we [become] the Vodafone round the Moon, providing the infrastructure – something like internet connectivity and navigation systems – which all these other people are going to need once they get onto the Moon’s surface?”

MoonLITE will then be followed up by a mission called Moonraker – very 007 - a low-cost



“Why on earth don't we become the Vodafone of the moon, providing the infrastructure people are going to need once they get onto the Moon's surface?”

Professor Sir
Martin Sweeting OBE



Professor Sir Martin Sweeting OBE

Born

1951, London

PhD

Designed, built and launched UoSAT-1

1985

Formed SSTL as a spin-off from Surrey University

1995

Awarded an OBE

2000

Elected a fellow of the Royal Society

2002

Knighthood for services to the small satellite industry

2006

Royal Institute of Navigation gold medal in recognition of the successful GIOVE-A mission for the European Galileo system, also featured in the UK's Top Ten Great Britons

2006/2007

Fellow of the Royal Society & Royal Academy of Engineering

money,” Sweeting replied, and explained that SSTL receives delegations from countries such as Japan, who come to examine the business model, hoping to learn from it and replicate its success. “The secret is really very easy: I tell them they should cut their budgets by at least 50 per cent. They look at me with absolute horror. But it’s the truth. If you have too much money you become fat and lazy – you just drift along. On the other hand, there are sometimes hurdles that the industry alone just cannot surmount.”

And this is where Government support has come in. “In the year 2000, Lord Sainsbury (then minister of state for science and innovation) developed a really good programme for small satellites, called Mosaic.” SSTL had received no funding from Government in the 15 years of its existence. “But we were at the threshold where we had a number of things we could do, but just didn’t have the internal resources to do it. Essentially Sainsbury put in 10 to 15 per cent of the funding – eventually I think that was around £15 million over three projects.” Two of these projects were undertaken by SSTL. “What the funding did was get us over that first hurdle. And those three projects have since generated over £180 million in export earnings. I’ve been to other countries where the government has tipped a whole bucket of money on the people, and they’ve just stood still! Because they’ve got all the money they want, and they just sit and play.”

Sir Martin has watched the Russian programme decline under economic hardship and then begin to rise again. “I visited the Russian cosmodromes in the early 90s, and saw the circumstances in which they lived. It was really really grim.” But Putin has been ploughing oil and gas-generated revenue into the programme to revitalise it. “They have an amazing intellectual capacity in the Russian space industry, but

it’s very antiquated and is just being reformed.”

China, meanwhile, may have taken the general public by surprise when its first manned space mission hit the headlines, but it came as no surprise to Sir Martin who had been aware of its commitment to a manned space programme since 1992. Meanwhile, he has been visiting China between two and four times a year for the last 15 to 16 years. “We were the first foreign organisation to sell satellites to the Chinese government in 1998. But it took seven years for us to get that first – it’s a very lengthy process, and it’s all based on building up personal trust and personal relationships with people. They need to trust you, and that you’re not here for the quick buck. It takes five to 10 years to build up relationships in the far east before you can trade. Japan and Russia are the same. It took us eight years to get our first contact in Russia, but then you’ve got an enormously loyal relationship which continues.”

The Chinese have also invested in what he describes as a master stroke. “In about 2000, they more or less retired everybody over 50 in the space industry.” It sounds a draconian move, and one that could not happen here in the UK. But he applauds the benefits. “They transferred executive responsibility to a younger generation and retained all those they retired in an advisory role. People at 50 and 55 have enormous experience and real deep technical understanding. But all this intellectual power is totally tied up and inaccessible. What they did was to release it, leaving the younger people to get on with worrying about the bureaucracy, man management and bean counting, while [the older people] sat behind the young guys, to contribute their know how. It’s a master stroke in my mind.”

Finally, I asked Sir Martin if he was a fan of science fiction. “Not particularly, no. Perhaps that’s because it’s a bit too close to home.” **M**