A ‘static’ business

John Chubb built his own small business developing electrostatic measuring instruments. Now retired, he relates his company’s story and the lessons he learned from running it.

Back in the early 1980s, when I was in charge of a small company at the University College of North Wales (now Bangor University), I encountered a dilemma. The university wanted the company to exploit “bright ideas” from research, but I found few ideas that I judged exploitable. I also recognized that entering a new market that you do not know (and that does not know you) is slow and expensive, and may not be successful. I was therefore faced with a decision: do I continue to try to run the company, or leave and start my own? I chose to leave, and John Chubb Instrumentation (JCI) was born.

The focus of my new company was electrostatics, an area that had fascinated me ever since the 1950s, when I did my PhD on the behaviour of particles during electrostatic precipitation. After completing my PhD in 1958, I did a graduate apprenticeship at English Electric in Stafford and then ran a small group developing high-power vacuum circuit interrupters. In 1962 I joined what is now the Culham Centre for Fusion Energy to work on condensation pumping of hydrogen on surfaces cooled by liquid helium. When Culham needed to diversify I ran a small group whose activities included development of a monitor for airborne fibres, large area computer typesetting and investigating electrostatic ignition hazards on large crude oil tankers.

Start-up phase
Thanks to this background in electrostatics and my experience at Bangor, I felt confident I could develop a more user-friendly and better-performing handheld electrostatic measuring instrument than any then available, and that this could form the basis for a range of instrumentation. Having some money in the bank, full ownership of our house and no dependent family, apart from my wife, I felt I could survive the initial start-up costs with perhaps just overdraft support from the bank. I did not wish to seek investor funding as I wanted to run the business my way, not with the constraints and the need to maximize profits for others.

When I started JCI, I expected to balance sales of instruments with some consultancy work in electrostatics. In particular, a good-sized consultancy project from the European Space Agency seemed in the offing. However, a colleague from my Culham days advised me not to employ anyone until I got the contract – wise advice, as the contract did not materialize! As the business developed over the years, though, I was able to employ a number of people, including a mechanical design engineer, three experienced electronics engineers and a practically minded physicist with great software skills, as well as someone to provide secretarial and bookkeeping assistance. All of these people were part-time consultants and most were near or over retirement age – an arrangement that gave me access to a wide range of capabilities.

The business was not aimed, or expected, to become large or have a multi-million-pound turnover. Instead, our aim was to do things that we felt were interesting and likely to be of benefit to users, and to earn sufficient profit to be fully self-financing. In the event, it took a few years before we became profitable. A particularly low point came after we had successfully pursued funding through the SMART awards scheme set up by what was then the Technology Strategy Board (now Innovate UK). This funding allowed us to develop a new way to measure the capability of materials for shielding against transient electric fields, but although our approach worked, it turned out the market was not interested in it. Fortunately, I had an understanding bank manager who allowed me to move the company’s debt from an overdraft to a mortgage on our house. From that point, our finances started to improve and eventually all debts were paid off and we were fully self-financing.

In business
Having developed an easy-to-use, high-performance handheld electrostatic fieldmeter, we enhanced this over the years and developed a number of applications for it. One of these was an electrostatic voltmeter (for zero-current measurement of voltage) and another was a so-called “Faraday Pail.”

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Spotlight on: Matt Mountain

The next president of the Association of Universities for Research in Astronomy (AURA), Matt Mountain, is an astronomer whose appointment comes on the heels of a nine-year stint in charge of one of the association’s flagship observatories, the Space Telescope Science Institute (STScI).

As the new head of AURA – a consortium of 40 US universities and six international affiliate members that manages telescopes and observatories around the world – Mountain takes over the leadership of the organization during a crucial period in its 57-year history. At the top of his agenda will be the long-awaited Gemini Telescope, science operations for which began in 1999 and 2005, during which period both Gemini telescopes saw first light and began scientific operations.

Movers and shakers

Materials scientist Long-Qing Chen of Pennsylvania State University, US, has won the Materials Research Society’s 2014 Materials Theory Award.

Mildred Dresselhaus has been awarded the Presidential Medal of Freedom, the US’s highest civilian honour, for her research on electronics and nanomaterials. Six US-based theoretical physicists have been honoured by the Simons Foundation. The new Simons Investigators in Physics, who will each receive an annual grant of $100,000 for five years, are: Patrick Hayden of Stanford University, Marc Kamionkowski of Johns Hopkins University, Leo Radzihovsky of the University of Colorado, Boulder, Rachel Somerville of Rutgers University, Anatoly Spivkovsky of Princeton University and Iain Stewart of the Massachusetts Institute of Technology.

Climate scientist Michael Mann has won a 2014 Pongo Environmental Award for his research on global temperature data and for being “one of the most important, resilient, outspoken and courageous climate warriors of our time”.

Charles Marcus, who leads the Center for Quantum Devices at the Niels Bohr Institute in Copenhagen, Denmark, has won the Award for Research Excellence in Nanotechnology from the University of Pennsylvania’s Nano/Bio Interface Center.

Adam Riess, Saul Perlmutter, Brian Schmidt and 47 other astronomers involved in the discovery of dark energy have been awarded the Fundamental Physics Prize. The $3m prize, established by the billionaire philanthropist Yuri Milner, will be split into two $1.5m chunks, with half going to Perlmutter’s team and half to the team led by Riess and Schmidt.