

To be part of technology history

The commercialisation of a new product is most effective if all the planning from end to end is done before a single circuit track is laid, writes **Garry Barker**.

THE doorway to Grey Innovation carries no name. You could walk past it in its suburban Prahran street and think it was a deserted warehouse. There is no power-dressed receptionist with a gleaming professional smile.

Yet out of this slightly cramped rabbit warren of a building have come more than 150 high-value, high-technology products, many of them world leaders in fields as diverse as medical diagnostics, defence, security, air-traffic control, consumer electronics, aviation and driver safety, and automotive components.

Grey Innovation was started in 1998 by Jefferson Grey Harcourt, aged 25, just out of Swinburne University with a brand new honours degree in engineering, and a passion for technology and design.

While at Swinburne he won the friendship and confidence of Professor Murray Johns, a pioneer in sleep technologies. He noticed Harcourt's final-year project at Swinburne, a device that transmitted the vital signs of medical patients to a computer.

"Murray spent many years looking into all aspects of sleep and he felt we could solve the problem of drivers falling asleep at the wheel by looking at eye movement," Harcourt says.

"Grey provided the technology and Murray the science and the analysis of the data," he said. The result was a device called Optalert; spectacles a driver wears that use infra-red technology to monitor eye movements that may indicate sleepiness and sound an alarm. The Optalert project began in 1998, the day after Harcourt graduated, and it spanned seven years, during which many other projects were undertaken.

Not that Grey Innovation was his first business venture. In year 12 at Camberwell Grammar he had set up Jefferson Electronics. "I fixed video recorders and TV sets for our teachers," he says. "It was good pocket money but I spent too much time running the business and not enough at study. I still passed everything, but not well enough."

So, rather than moving on to university, young Harcourt went to Swinburne TAFE and a mechanical engineering course. Now, as the head of his own internationally successful business he is far from regretting his TAFE background. "The education was excellent, the lecturers and equipment first class," he says. "Then I started the engineering degree at Swinburne University and passed with honours."

Still at university, he worked at MLC as an audiovisual technician, then joined a disc jockey company. That sparked his first invention, a BPM (beats per minute) counter that is now sold to DJs who need to synchronise complex musical beats.



CV Jefferson Harcourt

Founder and CEO of Grey Innovation, a Melbourne company devoted to technological research and development and the commercialisation of ideas and products.

Born: Melbourne, 1973.

Schooling: Mostly in New Zealand, then Camberwell Grammar. University at Swinburne (manufacturing engineering, then electrical engineering).

Currently reading: *The Invincible Quest: the Life of Richard Milhous Nixon* (Conrad Black) and *Absurdistan* (Eric Campbell).

What annoys you?: Windows Vista. I recently purchased my first Macintosh for home, and we've now started switching to Mac in the office.

Whom do you admire?: Sir Hubert Wilkins, the most extraordinary yet humble person I have ever researched. His life was an adventure of the highest calibre — flying over the South Pole at the dawn of aviation, flying over the North Pole in a Zeppelin, and later breaking through the ice at the same point in a submarine. He had to raise finance for his quests, suffered utter failure many times, saw active service in both world wars, and somehow died happily of old age. He was a humble man, born in very humble circumstances in South Australia.

Whom do you dislike?: George Bush. No explanation required.

What is your ambition?: To build high-tech companies. At Grey I am exposed to many new and exciting technologies. Developing products is one thing, but building a sustainable company around that technology is the real kicker.

Favourite restaurant: Vertigo, Bangkok.

Favourite bottle of wine: Heathcote Shiraz.

Favourite holiday: Snowboarding in Colorado. Amazing!

Developing the counter cost him \$100,000. "I should have bought a house but instead I developed the BPM counter, got it into production and sold it into the US, Europe, Australia and Japan. I funded the whole thing, so today I can talk to my clients as someone who has actually been there and put their own money into something."

During those years he also worked with Hewlett Packard's calculator division, then based in Melbourne, and helped develop highly sophisticated scientific calculators that sold worldwide.

"Steve Wozniak worked on calculators at HP before leaving

to set up Apple," Harcourt says. "It's great to be involved with technology history of that kind."

"I got caught up with the passion of designing and I guess I was blinded by that," he says. "It's not a good way to run a business. It is far better to outsource development and get that very cool eye on a project."

It is that cool eye, and a decade's knowledge of commercialising technologies, often for highly specialised and sophisticated markets, that Harcourt and his team of engineers and technicians bring to Australian inventors and researchers.

"Soon after I started in business I saw that Australia is not very good at commercialising its technology," he says.

"There were fundamental mistakes: there was a very prototype-based sense of development. But building prototypes one after another without a clear objective gets you nowhere."

"The other problem was a significant underspend and spending in the wrong way. You need to line up all your ducks — do all of the architecture and planning and then show a prototype."

"But people would get a few grand, and they would build a prototype, but they were a long way from the market, so they would get another \$50,000 and build another prototype; and any time-to-market advantage would be lost."

"You must have a holistic view of product design," he says. "You need to know about the supply chain, work with suppliers, work out the right product and what the road map for the product is. You have to work with customers and have the whole exercise lined up; then you execute."

"We started taking that approach to the investment community — to the venture capitalists, private equity firms and the federal government — and we have been very pleased by how well it has been received. Rather than making prototypes, we sell a package of architecture and planning before we start putting any circuit board tracks down; and we have a much better success rate."

But investors are often surprised at the kind of money needed to get a product off the ground. "What they think might be a \$300,000 project often turns out to need three times that."

"The traps are in the details. People accept that it takes 25 different disciplines to build a house, yet 95% of our clients assume that one engineer will be able to bring a product to market. We have software architects, software developers, software

testers, beta-system managers; and in each of those you have specific capabilities, depending on which language or which skill is being used."

Local attitudes and understanding are improving, Harcourt says. His own business has grown by 50% in the past six months and, he says, despite the global credit crisis, plenty of money is available for innovation.

But he remains critical of Australia's approach to its own long-term economic survival. "Forty years after a man walked on the moon, Australia is still selling dirt, and selling it as dirt — not even processing it," he says. "And we send it overseas on ships we did not



Jefferson Grey Harcourt set up Grey Innovation in 1998, at 25, and just out of Swinburne University where he gained an honours degree in engineering.

PICTURE: JOHN WOULDSTRA

build. To call ourselves the clever country and to be still doing that as the mainstay of our economy is a joke."

He notes sadly that when, during a lecture he gave recently, he showed a picture of Australian astronaut Andy Thomas, only two people in a group of 70 recognised him. "He's a fantastic guy; our only astronaut. He learned Russian to fly with the cosmonauts and spend 100 days in the Mir space station. He should be a national hero."

"Clever people are not respected in the community as they should be. People will flock to see a football player or a rock star, but a Peter Doherty or a Murray Johns is almost unknown by the broader public."

"We suffer because of that; good people leave."

The only reason I didn't leave was because I had started my own business.

"Engineering is the photosynthesis of wealth creation," he says. "Engineers take the time and the brains and the magic and they turn it into the technology that then produces value. Invention is not the critical thing; commercialisation is. We need to build businesses and pay taxes."

"I am looking forward to the outcome of the Cutler Innovation Review just to see where the focus is. It is good to see it on the public agenda but it should be in the public eye much more than it is. That's not just an issue for government, but for everyone."

"Australia must keep driving sophisticated innovation, going for very high value-add manufacturing and engineering," he says. "Plenty of economies have done that well; Israel is a great example."

"Australia can't make coat hangers cost effectively any more. We need to focus on what we can do. We have a good capability. We must capitalise on it. It is very important that we stay ahead of the Asian pack and, because those countries are also sitting on fantastic capabilities, we have to move quickly."