# Appendices

## 1.1 Research methodology

This book has its origins in a closely related project to develop teaching materials about innovation in Australia. The teaching project, which was funded by the Victorian government's Department of Innovation, Industry and Regional Development, was a collaborative effort between the Melbourne Business School and the AIC to produce twelve teaching cases about innovation in Australia. This was followed by a research project, additionally funded by IPRIA, which aimed to draw lessons from the research that went into the eight Victorian cases, along with International Catamaran, Proteome Systems and Kinacia.

### Case selection

In order to select the cases, research assistant Adam Waites conducted an extensive set of interviews with a spectrum of people associated with innovation in Australia. He also reviewed a broad range of material that featured Australian innovation, such as government information booklets. In addition, he reviewed all cases about innovation in Australia that he could find.

On the basis of this research, Waites proposed a shortlist of cases to a small committee comprising representatives of the Victorian government, the AIC and the Melbourne Business School. From that shortlist, eight of the eleven cases were selected. Two further cases were researched by Jonathan West while he was at Harvard Business School, and a third by Sam Burshtein at Macquarie University's Institute for Innovation.

**Data analysis**

To extract insights from the cases, the research team conducted two series of workshops—one in the middle of the research process and one at the end of the case development. The workshops held in the middle of the research process were used principally to open up research avenues within the cases. That is, by discussing the cases as a group, the individual researchers helped each other, and gained insights and raised questions for their own cases. The workshops at the end of the case analysis aimed to bring the various strands together and extract any further issues.

At the workshops held during the data gathering process, the relevant researcher presented his or her findings up to that point to a group comprising the other researchers and some members of the faculty. The group then discussed the case at length, drawing out themes, proposing theoretical issues the case could address and identifying new lines of inquiry.

At each of the workshops at the end of the case analysis, the author of each case presented the case to the group (all the members of which had read the case), framing their comments in terms of the question: what does this case tell us about innovation in Australia? One member would comment and elaborate on the presentation. The discussion would then be thrown open to the group, sometimes staying restricted to the case, but more often ranging across the cases and sometimes into the researchers' experience beyond the cases. Because the team had extensive experience in innovation in Australia (see the Contributors section), that experience could flesh out the discussion not only in terms of elaboration of comments but also in terms of critique and refinement. Such a methodology is appropriate if the aim of the exercise is to obtain insight, rather than to conduct a systematic analysis (Daft & Weick, 1984; Weick, 1995).

The two workshops at the end of the case analysis were recorded and transcribed. The transcripts were then read and reread to extract themes. These themes were coded using the N-Vivo Qualitative Data

Analysis program using a free-coding categorisation scheme. That is, the author simply attached thematic descriptors to each piece of text according to the meanings embodied in the text and his understanding of likely theoretical issues. Some pieces of text were given as many as three or four codes to cover the various themes which applied. For example, text which talked about the relationship between corporate strategy and organisational culture within a particular case was coded for the particular case ‘corporate strategy’ and ‘organisational culture’. Where appropriate, passages were given codes that already existed for prior text, and code descriptors were changed so they could encompass prior coded material and new material. For example, the code ‘governance’ was changed to ‘boards of directors’ in response to material which discussed the role of boards of directors in strategy formation and the hiring of executives. Those codes were then aggregated into the metalevel categories that are used to organise the analytic chapter: strategy, leadership and culture, organisational design and so forth.

A completed draft of the analysis was then circulated back to the researchers, who provided final comments not only on the draft but also on each of the categories and ideas in the light of their broader experience. This draft was also sent to three professors of innovation management at Australian universities, who met with the author and made suggestions about changes and additions, as well as adding additional perspectives. The modified draft was then sent to all the people above, and also to two people with broad, but different, innovation-related experience in Australia. They were asked to comment on the text, and particularly on the extent to which the findings resonated with their experience. On the basis of the comments of these three groups (authors, professors and practitioners), the draft was modified a final time.

## 2.1 Contact lenses

Contact lenses are very thin transparent discs generally smaller than a five-cent piece, worn directly on the eye and shaped to correct refractive illnesses. They do not attach to the eye, but rather float on a layer of tear liquid which separates them from the cornea.

An effective contact lens must have the following properties:

- It must have sufficient oxygen transmissibility. Unlike other parts of the body, the cornea derives its oxygen from the atmosphere, not from the blood supply. If the cornea is deprived of oxygen (becomes anoxic), it swells and often becomes sore. For instance, your cornea swells about 3 to 4 per cent overnight while you sleep. Severe and prolonged oxygen deprivation (hypoxia) can result in the growth of blood vessels from the sclera (the white of the eye) into the cornea, chronic red eye, and infection, and potentially ulceration of the cornea. A contact lens acts as a barrier to the flow of oxygen to the eye, which is why wearing a standard lens overnight can lead to very sore red eyes. Oxygen can get to the cornea of contact lens wearers in two ways: through the contact lens, or by being dissolved in the tear film and then having the tear film pass under the lens. Oxygen transmissibility measures the ability of oxygen to pass through the lens and is measured in barrers per millimetre (oxygen permeability per unit of thickness)—written as Dk/t, where t is the thickness of a standard lens.

- It must move freely on the tear film. The cornea has the highest concentration of nerve endings in the human body. If a contact lens sticks to a person's eye, it is extremely painful. Unfortunately, the properties of hydrogels (the materials from which conventional contact lenses are made) are such that the greater their oxygen permeability, the greater the likelihood that they will stick to the eye.
- It must be biocompatible, so that it could be worn on the human body without inducing toxic, allergic or other reactions.
- It must be manufacturable at a reasonable price and have an adequate shelf life.

There are three types of contact lens currently on the market.

**Soft contact lenses**

These were developed in the early 1970s following the invention of silicone hydrogel polymers. Silicone hydrogels contained up to 90 per cent water, had excellent mechanical properties, and had a reasonably hydrophilic surface, which enabled the lens to float on the eye. They typically had oxygen transmissibility of 15 to 30 Dk/t. Soft lenses are available in the following types:

- daily-wear disposable soft lenses (oxygen permeable)—made by placing the polymer in a mould, curing it with ultraviolet light, and then hydrating it, these are constructed of soft, flexible hydrogels that allow oxygen to pass through to the eyes, and are designed to be worn for a single day, discarded at night, and then replaced with a brand new pair

- daily-wear soft lenses, similar to daily disposables, but designed to be worn for one week, two weeks, or a month, and able to be removed and cleaned daily
- conventional soft lenses, which are produced by machining a blank lens to suit an individual's prescription, before hydration, and designed to be worn for six months to a year, with removal and cleaning daily

**Rigid Gas Permeable (RGP)**
These lenses are made of slightly flexible plastics that allow oxygen to pass through to the eyes. They are designed to be removed and cleaned at night, or for extended wear (up to seven nights).

**Extended wear lenses**
These lenses have very high transmissibility (>90 Dk/t) to ensure that the eye receives adequate oxygen while the wearer is asleep, when oxygen flow is inhibited by the closing of the eyelids, reduced tear flow, and reduced eye movement. Because oxygen flow increases exponentially with permeability, a lens with a transmissibility of 90 Dk/t has about ten times the oxygen flux of a lens with a transmissibility of 20 Dk/t.

## 3.1 Chemical analysis scientific instruments

Scientific instrumentation was an area heavily laden with acronyms and abbreviations. There were occasionally multiple terms for essentially the same thing.

GBC manufactured versions of many of the important chemical analysis scientific instruments. Some of the instruments not in GBC's range were: nuclear magnetic resonance (NMR) spectroscopes, gas chromatographs (GC) and infrared (IR) and fluorescence-based spectroscopes.

Life sciences instruments (for example, DNA microarrays) had some overlap in customers and technology with chemical analysis instruments, and many of the multi-national instrument manufacturers produced instruments in both classes. GBC's focus was on chemical analysis instruments, although its high-performance liquid chromatographs were largely used in life sciences applications.

**AAS**

Atomic absorption spectrometry was developed in 1952 by Sir Alan Walsh of the CSIRO (Hannaford, 2000; Walsh, 1955). Previously, atomic spectra had been obtained by emission, a method which excited a much smaller proportion of the atoms and therefore needed larger samples and was less accurate and reliable. Atomic absorption techniques are a direct application of Kirchoff's law, which states that matter absorbs light at the same wavelength as that at which it emits light. AAS units determine the concentration of an element in a gaseous sample by passing light at the element's characteristic wavelength through the sample and measuring the reduction in light.

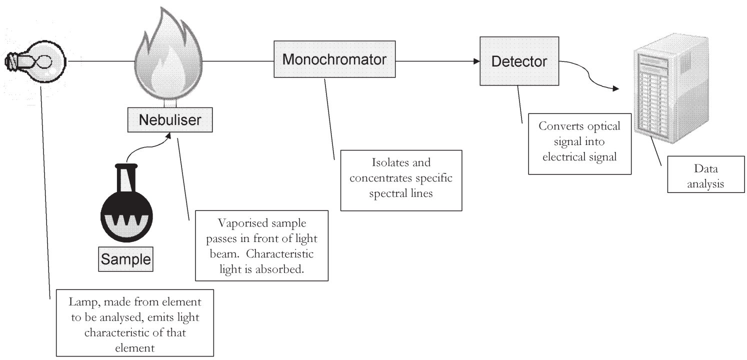


*Figure A.1: Schematic diagram of atomic absorption spectrometer*

The original (provisional) patent application was lodged on 17 November 1953 and the final patent application was lodged on 21 October 1954. After a false start with a British firm, the CSIRO licensed Melbourne-based Techtron to manufacture commercial AAS units from the late 1950s. The 1960s mining boom in Australia sparked substantial sales because of the technology's ready applicability to analysing large numbers of small samples quickly and easily.

Around the same time, Perkin-Elmer licensed the technology but moved slowly in developing it. In 1962 Walsh was asked to present to senior Perkin-Elmer management in Norwalk, Connecticut, to explain the technology's benefits. Chester Nimitz Jr, son of the famous

World War II US admiral and then Vice-President of Perkin-Elmer's instruments division, asked, 'If this goddam technique is as good as you say it is, why isn't it being used right here in the United States of America?' Walsh replied, 'You'll have to face up to it, Chester, the United States is just an underdeveloped country'.

Perkin-Elmer promptly developed and released its Model 303 AAS. By 1965, the Model 303 was Perkin-Elmer's biggest seller and was the best-selling AAS.

Perkin-Elmer's highly successful agreement with the CSIRO motivated the 1967 acquisition of Techtron by Varian, Perkin-Elmer's principal American competitor.

**UV-Vis**

UV-Vis used the same basic technology as the AAS but was in a totally different market from atomic absorption. The light passed through the sample was in the UV range rather than the visible range applied in a standard AAS. It was a useful technique, for example, to determine electronic energy levels in molecules.

**Inductively coupled plasma spectrometer (ICP)**

Inductively coupled plasma spectrometry operated by detecting ions in a plasma. A plasma is an electrically neutral low-density gas comprised of roughly equal numbers of positively and negatively charged ions. The plasma was created by mixing the sample and a comparatively large amount of a non-reactive element such as argon.

ICP spectrometry offered a number of advantages over atomic absorption spectrometry, including simultaneous determination of elemental composition of multiple elements, higher sensitivity, greater freedom from chemical and background interferences, minimal ionisation effects, and greater dynamic range.

**High-performance liquid chromatograph**

Liquid chromatography was an analytical technique where a liquid sample (the mobile phase) was passed through a column of some porous material (the stationary phase). Mikhail Semenovich Tswett invented liquid chromatography in 1903, using a chalk column to separate the pigments of green leaves. The stationary phase (or stationary bed) was selected so that molecules in the liquid sample travelled different distances through the column depending on some interesting characteristic. Typically, the molecular characteristic of interest was either size or electric charge.

HPLC passed the sample under pressure, and was used extensively in life sciences applications such as blood tests and other organic tests. HPLC was easily the biggest submarket of the chemical analysis scientific instruments market. High-performance liquid chromatographs were built for a specific purpose from a number of standard components.

**Rheometer**

A rheometer measures elasticity and viscosity. Standard rheometers twisted the sample (liquid or solid) at a single frequency—that is, the twists were applied at regular intervals. Rheometry, at its most basic, is the mechanical equivalent of sticking your thumb on, say, a piece of bread and twisting to find out how hard you have to work (how much force you have to apply tells you about the elasticity and viscosity of the sample).

GBC's rheometer rapidly varied the twisting frequency and then applied Fourier analysis to reconstruct the sample's visco-elastic properties. This method was advantageous both in allowing the use of smaller samples and in determining visco-elastic properties across a wider frequency range compared to standard methods.

**XRD**

X-Ray diffraction is used to analyse the internal crystal structure of materials. The technique was most famously used by Rosalind Franklin and Maurice Wilkins to generate images of the structure of DNA. These images were crucial to the proposal by James Watson and Francis Crick of their revolutionary double helix model.

## 3.2 GBC export and innovation awards

| | |
|---|---|
| 2003 | Clunies-Ross National Science and Technology Award (awarded to Ron Grey) |
| 2001 | Institution of Engineers Australia—Engineering Excellence Awards (for OptiMass 8000—ICP-TOF-MS) |
| 2000 | Greater Dandenong Premier Regional Innovation Award |
| 1998 | SpiA 98—Science Product Innovation Award<br>R&D 100 Award (USA) |
| 1995 | ICI Australia Advanced Sciences Group Technical Innovation Award |
| 1992 | Governor of Victoria Export Award |
| 1991 | Top 10 Product of 1991 Spectroscopy Winner, Laboratory Equipment Profiles |
| 1990 | Commonwealth Bank for Manufacturers Awards—Australian Export Award |
| 1988 | Australian Bicentennial Export Award<br>Governor of Victoria Export Award |
| 1984 | Australian Export Award<br>Governor of Victoria Export Award |

## 3.3 GBC Scientific Equipment—selected financial information

| | Australian $ (000s) | | | |
|---|---|---|---|---|
| | **2000** | **1995** | **1990** | **1985** |
| Sales | 17 370 | 25 480 | 10 375 | 1556 |
| Other Revenue | 1018 | 1127 | 271 | 407 |
| Operating Profit | 772 | –1890 | 1993 | 249 |
| Abnormal Items | 3100 | 914 | 0 | 0 |
| Net Income | 2492 | –900 | 1366 | 145 |
| R&D Expense | 1500 | 3050 | 1018 | NA |
| Depreciation & Amortisation | 385 | 629 | 252 | 7 |
| Receivables | 4433 | 2551 | 2506 | 448 |
| Inventories | 3031 | 3912 | 2773 | 168 |
| Other Current Assets | 818 | 367 | 181 | 472 |
| Total Current Assets | 8282 | 6830 | 5460 | 1088 |
| Property, Plant & Equipment | 4042 | 5260 | 1800 | 180 |
| Other Non-Current Assets | -347 | 1756 | 213 | 29 |
| Total Non-Current Assets | 3695 | 7016 | 2013 | 209 |
| Total Assets | 11 977 | 13 846 | 7473 | 1297 |
| Accounts Payable | 3623 | 3431 | 879 | 210 |
| Borrowings | 1836 | 3194 | 1223 | 89 |
| Provisions | 578 | 761 | 1053 | 201 |
| Total Current Liabilities | 6037 | 7386 | 3155 | 500 |
| Borrowings | 2219 | 3096 | 560 | 121 |
| Provisions | 779 | 666 | 0 | 14 |
| Total Non-Current Liabilities | 2998 | 3762 | 560 | 135 |
| Total Liabilities | 9035 | 11 148 | 3715 | 635 |
| Net Equity | 2942 | 2698 | 3758 | 662 |

## 4.1 Compumedics—selected financial information

| | 2007 | 2006 | 2005 | 2004 | 2003 | 2002 | 2001 |
|---|---|---|---|---|---|---|---|
| Operating Revenue ($000) | 36 700 | 37 700 | 38 200 | 34 000 | 32 100 | 19 747 | 16 639 |
| EBITDA | 1400 | (0) | (2600) | 2900 | 1900 | (405) | 4233 |
| EBIT | 1000 | (1000) | (3900) | 2400 | (18 800) | (2393) | 3041 |
| Operating Profit after Tax | 100 | (1600) | (3900) | 2400 | (18 600) | (1898) | 1971 |
| R&D Costs as Percentage of Operating Revenue | 12.5 | 19.4 | 20.7 | 19.1 | 21 | 13.1 | 12.2 |
| Total Assets at 30 June | 19 200 | 22 100 | 24 500 | 24 500 | 23 800 | 43 624 | 39 197 |
| Shareholder Funds at 30 June | 6900 | 6700 | 9300 | 13 900 | 11 700 | 30 226 | 32 163 |
| Net Tangible Assets Per Share at 30 Jun | 4.3 | 4.8 | 5.7 | 9.9 | 8.3 | 9.5 | 14.4 |
| Weighted Average Number of Shares (m) | 143 | 140 | 140 | 140 | 140 | 140 | 115 |
| Earnings Per Share | 0.1 | (1.1) | (2.8) | 1.7 | (13.3) | (1.4) | 1.7 |
| Earnings Per Share (Before Interest, Tax, Depreciation, and Amortisation) | 1.0 | (0.0) | (1.8) | 2.1 | 2.1 | (0.8) | 2.1 |

## 4.2 Background on OSAS

OSAS is a particularly serious, potentially life threatening condition that affects an estimated 20 per cent of the adult population, at least mildly (Shamsuzzaman, Gersh & Somers, 2003), with a higher percentage and severity in certain higher risk groups (such as middle aged, male, overweight smokers) (Wikipedia contributors, 2008a). OSAS is now estimated to account for approximately 50 per cent of all incidences of any sleep disorder. Sleep apnoea as a breathing problem was first identified in 1965, but it wasn't until 1981 that a treatment was developed (Sullivan et al., 1981). As of 2008, it was estimated that only 10 per cent of OSAS sufferers had been diagnosed and treated (ResMed Pty Ltd, 2008). As a consequence, the OSA device market grew at a compound rate of 15 to 18 per cent from 2000 to 2007, in part because of the growing awareness of sleep disorders but also because of the increasing prevalence of risk factors (age, obesity, diabetes, alcohol consumption and smoking) (Reade et al., 2004).

OSAS describes the temporary closure of a patient's upper airway during sleep. The consequence of this is that a patient will be unable to breathe (apnoea), which in turn results in severe snoring and, more significantly, partial asphyxiation. An OSAS episode during sleep will typically last about ten seconds and is characterised by a gradual decline in blood-oxygen concentration. This continues until the oxygen level in the blood stream becomes critically low and the patient is momentarily woken to low levels of consciousness. The patient, awake, becomes aware of the need to breath and facilitates that by extra respiratory exertion or by a change in body position.

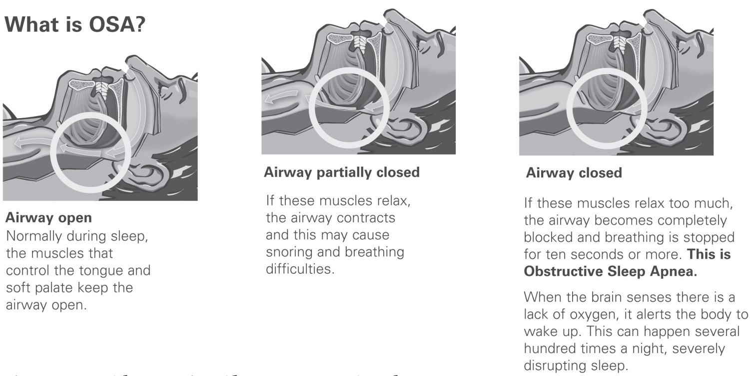


*Figure A.2: Obstructive Sleep Apnoea Syndrome*
Source: ResMed Pty Ltd (reproduced with permission)

Sleep quickly follows, often without the patient ever being aware of the interruption. However, once the patient is asleep, the OSAS cycle starts all over again, with the whole process sometimes repeating itself 200 to 300 times in a standard sleep period of eight to ten hours (Medline Plus Authors, 2006).

Whilst patients are not normally aware of apnoeas because the periods of wakefulness are too short, patients are more likely to be aware of the symptoms that are associated with the sleep disorder, which include fatigue and daytime sleepiness.

Early studies galvanised interest in OSAS by highlighting the serious medical implications when sufferers received no treatment. This was often the case, with patients sometimes going undiagnosed for decades. Over that time, hundreds of apnoeas a night would place mounting pressure on the heart and the central nervous system. Such long-term strain is now thought to be a significant factor in congestive heart failure or stroke later in life. Reflecting upon this information, and the pivotal role that sleep disorders were increasingly understood to play in a whole range of important health issues, Eliot A Phillipson commented in the *New England Journal of Medicine* that 'It is time for the nation to wake up to the staggering impact of sleep disturbances on the health and welfare of our society, an impact that rivals that of smoking' (Phillipson, 1993). The National Commission on Sleep Disorders Research estimated that the direct cost to the US economy of sleep disorders and sleep deprivation for 1990 alone was US$15.9 billion (National Commission on Sleep Disorders Research, 1992).

**Diagnosis**

The diagnosis of sleep disorders usually begin when patients present themselves to a GP. The GP will identify that a patient suffers from a combination of symptoms, possibly including severe snoring, tooth grinding, daytime tiredness, general fatigue and/or poor sleep patterns, and will refer the patient on to a specialist sleep or respiratory physician who will decide whether the patient should be submitted for a sleep study. A sleep study requires the patient to spend a night in a sleep lab in a hospital or a sleep clinic, or alternatively to have the study conducted at home. The sleep clinic segment has shown strong growth. In 1997 there were 1600 sleep clinics in the US, and the number is estimated to have grown at 10 to 15 per cent per year since then.

Home studies are carried out by an estimated 5000 physicians (mainly pulmonologists and ENT surgeons) who do not have sleep lab facilities. Whilst a home study is cheaper, it doesn't provide the opportunity for a split-night diagnostic-treatment session (defined below), and there is the risk that if sensors become detached or data are otherwise corrupted, there will be no technician on hand to rectify the situation and the session will be wasted. The cost in the US for a sleep study is in the region of US$1000, which is generally recoverable from Medicare or the patient's health insurer.

Once a sleep disorder had been diagnosed, treatment options include oral appliances, surgery, behavioural adjustment and, most commonly, a CPAP (continuous positive air pressure) device for obstructive sleep apnoea. The CPAP machine creates a positive air pressure environment in the patient's respiratory tract, and must be calibrated for each patient. Calibration is often done by a technician once OSAS has been diagnosed, during the second half of a split-night study at a hospital or sleep clinic.

The treatment period for sleep disorders is open ended and takes place in the patient's home. The patient purchases the therapeutic device, made by a manufacturer such as ResMed or Apria, from a supplier. In the US market, supply is dominated by large, multiline home healthcare providers such as American Home Patient (ResMed), Rotec (ResMed), Apria (Respironics) or Lincare. The provider installs, calibrates and maintains the device for a monthly fee.

### 4.3 Competitive landscape

Many general medical equipment companies such as Caring Technologies, Marquette Medical Systems, Nellcor Puritan Bennett, Nicolet Biomedical and Optovent have recognised the strong growth opportunities in sleep medicine and have leveraged expertise developed from both respiratory medicine and neurology to enter the field (Theta reports, 2003). Some of these companies provide a full range of products for both the high-technology diagnostic segment and the low-technology therapeutic segments. However, Compumedics remains the only company in the global market with its roots in clinical sleep diagnostics.

Compumedics recognises the following companies as competitors in the field of sleep medicine.

- ResMed, an Australian company formed in 1989, is a leading developer, manufacturer and marketer of innovative products for diagnosing, treating and managing sleep-disordered breathing, with sales in 2006–07 of US$716 million (ResMed Pty Ltd, 2007). In 2007 ResMed marketed its products in over sixty-eight countries to sleep clinics, home healthcare dealers and third-party payers. It continued to focus on product development and innovation, and had a particular focus on the European homecare ventilation market (ResMed Pty Ltd, 2007).
- Medcare Flaga hf. The company began as Flaga hf., an Icelandic sleep diagnostic equipment company, in 1988. In September 2002 Flaga acquired a competitor, Medcare Diagnostics, most known for its Rembrandt diagnostic software, which was a division of the US company AirSep Corporation. This deal created the largest single company in the world in the field of sleep diagnostics. In March 2005 Medcare Flaga became a holding company and changed its name to Flaga Group hf, which owns and oversees the operation of Medcare and SleepTech as separate business units and pursues new business opportunities as they arise (Flaga Group hf, 2008). The Flaga Group's consolidated revenue for 2006 was US$32 million (Flaga Group hf, 2006).
- US-based Respironics Inc was founded in 1976 and operates in the home-based therapeutic segment, where it is the market leader. Respironics had total revenues of $599.4 million in 2006–07 from providing systems that manage sleep disordered breathing, chronic obstructive pulmonary disease, asthma, infant care, heart failure and restrictive lung disorders in the homecare and hospital market (Respironics Corporation, 2007).
- Nellcor Puritan Bennett (Mallinckrodt Inc) is part of Tyco Medical and provides products in three areas: imaging, pharmaceuticals and respiratory medicine. Mallinckrodt entered the therapeutic field with CPAP devices first in Europe, and then in the US in 1999, with products for both the diagnostic and therapeutic segments.

## 6.1 Ausmelt—selected financial information

### Pre-listing revenue results

| | | |
|---|---|---|
| 1990–91 | Revenue: $3.32 million | EBIT: $0.56 million |
| 1991–92 | Revenue: $2.35 million | EBIT: ($0.21 million) |
| 1992–93 | Revenue: $3.79 million | EBIT: $0.87 million |

### Post-listing financial results (from Ausmelt, 1993–94 to 2003–04)

| Item | 1993–94 | 1994–95 | 1995–96 | 1996–97 | 1997–98 | 1998–99 | 1999–2000 | 2000–01 | 2001–02 | 2002–03 | 2003–04 | 2004–05 | 2005–06 | 2006–07 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Revenue* | 4772 | 10 126 | 7904 | 5836 | 6775 | 3742 | 15 047 | 13 484 | 21 263 | 13 109 | 13 134 | 9 532 | 13 699 | 19 862 |
| EBIT* | 746 | 216 | (3136) | (3275) | (1230) | (801) | 5808 | 3041 | 1865 | 350 | 1 733 | (4 758) | 3 115 | 3776 |
| NPAT* | 671 | 265 | (3165) | (3275) | (1230) | (801) | 5703 | 2071 | 1438 | (162) | 1 470 | (4 259) | 2 843 | 3052 |
| Total Assets* | 5866 | 7013 | 6757 | 4429 | 3878 | 3721 | 24 941 | 31 889 | 15 259 | 13 023 | 14 660 | 9 721 | 14 998 | 17 776 |
| Liabilities* | 1368 | 2220 | 2537 | 2713 | 1827 | 2472 | 3222 | 10 700 | 5061 | 2596 | 2 339 | 2 838 | 5 041 | 5558 |
| Equity* | 4498 | 4792 | 4220 | 1716 | 2050 | 1249 | 21 719 | 21 189 | 10 197 | 10 428 | 11 919 | 6 881 | 9 957 | 12 207 |
| Patent Value* | 255 | 279 | 390 | 460 | 471 | 467 | 449 | 429 | 492 | 546 | 648 | 701 | 829 | 910 |
| CEO Salary* | 170 | 170 | 170 | 180 | 170 | 150 | 190 | 180 | 250 | 231 | 231 | 212 | 217 | 227 |
| Staff Numbers (Approx.) | 40 | 60 | 40 | 30 | 20 | 20 | 26 | 31 | 37 | 38 | 39 | 35 | 41 | 50 |
| Total Plants*** | *6 | 8 | 10 | 12 | 15 | 18 | 19 | 22 | 24 | 25 | 26 | 27 | 28 | 28 |
| Commissioned During Year | 2 | 2 | 2 | 2 | 3 | 3 | 1 | 3 | 2 | 1 | 1 | 1 | 1 | 0 |
| Contracts Signed | 4 | 3 | 3 | 1 | 1 | 1 | 4 | 1 | 1 | 2 | 0 | 0 | 5 | 3 |
| Dr Floyd Holding (Per Cent) | 34.7 | 34.1 | 30.4 | 33.1 | 27.4 | 27.4 | 26.0 | 23.8 | 23.4 | 22.6 | 22.6 | 23.2 | 23.2 | 23.0 |

* ($'000)

*** Includes pilot plants and plants subsequently decommissioned

## 7.1 Company share registers

The Australian government and other governments in the countries in which Computershare operated require that companies listed on public stock exchanges keep registers of the security holders, and allow the public access to the information contained in these registers.

In Australia there are three registers for each company. The first is the share register. It includes information about the holders of shares in a company, including their name and address; the number of shares they acquire, are allotted or dispose of; and the dates on which they do so. Records of a given person's shareholding are maintained for seven years after the person ceases to be a shareholder.

The second is the register of option holders, including options received as part of executive and employee compensation programs. It includes all the same information as the share register, but also contains a a copy of every document that grants an option over unissued shares in the company.

The third is a register of debenture holders. Debentures are a type of debt instrument which can potentially be traded. The information kept about debenture holders is similar to that kept about shareholders.

The manager of an Australian share register must make the register available for any person to inspect it in hard copy. Under certain circumstances, people may also inspect it electronically.

## 7.2 Computershare—selected financial information

Source: company annual reports

| Financial Year | Millions of Shareholders Serviced | Number of Staff | Operating Profit Before Tax ($ millions) | Sales Revenue ($ millions) | EBITDA ($ millions) | Total Assets ($ millions) |
|---|---|---|---|---|---|---|
| 1993 | 4.38 | N/A | 2 | 8 | 3.5 | N/A |
| 1994 | 6.07 | 40 | 6.42 | 12.68 | 7.31 | 12.56 |
| 1995 | 6.15 | 54 | 7.47 | 13.32 | 8.51 | 20.02 |
| 1996 | 7.21 | 69 | 6.52 | 14.56 | 8.06 | 23.68 |
| 1997 | 11.43 | 154 | 7.88 | 21.67 | 10.66 | 43.56 |
| 1998 | 29.36 | 2053 | 13.54 | 147.04 | 31.19 | 212.22 |
| 1999 | 37.41 | 2591 | 31.5 | 293.89 | 56.19 | 248.32 |
| 2000 | | 4300 | 62.5 | 394.9 | 91.7 | 659.4 |
| 2001 | | 5148 | | 724.6 | 151.6 | 904.0 |
| 2002 | | 5321 | | 757.1 | 147.6 | 959.7 |
| 2003 | | 5029 | | 694.5 | 78.8 | 894.4 |
| 2004 | | 7995 | | 871.2 | 130.3 | 1187.1 |
| 2005 | | 9689 | | 1063.5 | 158.5 | 1985.6 |
| 2006* | | 10 255 | | 1198.3 | 240.1 | 1602.8 |
| 2007* | | 10 465 | | 1404.2 | 370.5 | 1735.1 |

*Reporting moved to US$ figures

## 8.1 VESDA product range

- VESDA LaserPLUS: the core product in the VESDA product range. Protects areas up to 2000 square metres, and has four alarm levels: Alert, Action, Fire 1 and Fire 2.
- VESDA LaserSCANNER: locates the origin of smoke by identifying the first sector (pipe) with the highest level of smoke, and then continues to sample from all sectors to monitor the fire growth. Protects areas up to 2000 square metres per sector, and has four alarm levels: Alert, Action, Fire 1 and Fire 2.
- VESDA LaserCOMPACT: simple, cost-effective solution for the protection of single and smaller environments such as ceiling voids, prison cells and data storage cabinets. Protects areas up to 500 square metres, and has three alarm levels: Alert, Pre-alarm and Fire.
- VESDA Exd: explosion-proof smoke detector. This product is specifically designed for use in special-hazard applications such as oil and gas, shipping and hazardous materials manufacturing.
- VESDA LaserFOCUS: the VESDA LaserFOCUS air-sampling smoke detector provides very early warning smoke detection performance in environments of 250 square meters or less.
- VESDA displays: the VESDA displays monitor and report the status of a detector. The display module could be mounted in a detector unit, or separately in a remote unit.
- VESDA programmer: menu-driven device that enables the user to conveniently configure, commission and maintain their VESDA system. Only one programmer is required to support the entire network. Like the display, it can be mounted within a detector or at a remote location.
- VESDA pipe: the network of sampling pipes that actively transport air from protected areas to the detector.
- VESDAnet: a network solution that connects detectors, displays and programmers. It was analogous to an Ethernet network linking computers; only VESDAnet links VESDA products.
- VESDA software:

    1. VSM (VESDA system management): allows the user to monitor, configure and control a VESDA system from a central location via a VESDAnet network

2. VSC (VESDA system configurator): a configuration tool specifically designed to simplify the setup of any VESDA system during commissioning and installation
3. ASPIRE: computer software tool for designing and evaluating aspirated pipe system layouts