

In this edition...

Last week CogState launched its joint venture, Axon Sports, in the USA. This is the second main application of the company's cognitive testing platform. The timing appears to be perfect because of an escalation in public debate about the dangers of concussion in sport and a shift in attitudes from political, educational and sporting organisations in progress. Cogstate has teamed up with the A-Team of sports internet marketing which should give the business a very good chance to seize on this emerging market opportunity. We also provide Part II of our profit report summary for the listed Australian life sciences sector.

The Editors

Companies Covered: ACR, BRC, CGS, CST, ELX, LBT, PBP, SOM, SRX

	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.0%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.3%
Year 7 (May '07 - May '08)	-36%
Year 8 (May '08 - May '09)	-7.3%
Year 9 (May '09 - May '10)	49.2%
Year 10 (May '10 - Current)	-8.4%
Cumulative Gain	165%
Av Annual Gain (9 yrs)	18.5%

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Bioshares

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Delivering independent investment research to investors on Australian biotech, pharma and healthcare companies.

Extract from *Bioshares* –

CogState Launches Axon Sports – Right Product, Right Time, Right Partner

Over the last 18 months, concussion in sport has become a serious concern in the US and is also set to become a more prominent issue in Australia. Since last year the issue has been raised in major media outlets, including *Time* magazine, *The New York Times*, *USA Today*, *60 Minutes* in the US and most recently *60 Minutes* in Australia last week. And it's not just the first concussion that has become a discussion point, but what has been termed "Second Impact Syndrome."

In only the last nine months, CogState (CGS: 25 cents) has been very quick to translate its cognitive testing platform into a 50/50 joint venture, called **Axon Sports**, which this week was launched in the US to provide cognitive testing in sports. The market in the US for cognitive testing in sport is estimated by CogState to be worth in excess of US\$150 million a year and at this stage there is only one other serious competitor. The target market is 60 million school, college and adult athletes.

CogState has built its business on the back of providing cognitive testing services for pharmaceutical companies conducting clinical trials that want to measure changes in cognitive function, particularly in the areas of Alzheimer's disease and schizophrenia. Last financial year CogState generated sales of \$9.4 million and an operating profit of \$0.5 million.

Axon Sports Management Team a Key

One of the key factors that gives this joint venture a strong chance of success is the experience of the JV partner. The co-founder of Axon Sports and principal of **Quixote Investment** is Rudy Chapa. Chapa was previously a middle distance running champion, breaking the US 3000 metre record in 1979. He also recorded the second fastest US debut marathon time in 1983 (2 hours, 11 minutes and 13 seconds, behind that of friend Alberto Salazar three years earlier).

Chapa worked at **Nike** from 1992-2001. He became Global Director of Sports Marketing. During that period Nike grew sales from US\$3.9 billion to almost US\$10 billion. In his last few years at Nike, Chapa was asked to head up its Internet division where they started Nike.com and got Nike into e-commerce said Chapa, reporting directly to Phil Knight. At the CogState investor briefing this week Chapa said that through that work with Nike "I got to know a little bit about the Internet!"

In 2004 Chapa founded **SPARQ Products Inc**, which sells advanced functional fitness training equipment as well as access to an advanced training network across the US. That company was sold to Nike in 2009.

In 2004 Chapa also bought a controlling share in **Students Sports**, a high school sports events and digital media company for US\$400,000 and sold that business to ESPN in 2008. Chapa is now onto his next venture in Axon Sports.

– Cont'd on page 3

US Media Coverage and Political Response to the Issue of Concussion in Sport

Over the last 20 months, there has been lively media discussion on the issue of concussion in sports in the USA. This is the reason Axon Sports was formed and the reason CogState CEO, Brad O'Connor, believes the timing is ideal to release this product.

The *New York Times* ran an article titled "Concussions and Head Injuries in Football" leading with the comment that "head injuries, including concussions, particularly in the game of American football, have become a subject of serious concern, much study and even Congressional hearings in the United States." (See <http://www.nytimes.com/info/concussions-in-football/?scp=1-spot&sq=concussion%20football&st=cse>)

That article pointed to research that showed that a person was as much as four times more likely to sustain a second concussion after the first concussion. Symptoms reappear hours and days after the injury, showing that players had not fully recovered from the injury. In December last year the NFL said it would bar any players from returning to play the same day after a concussion. A major change has occurred at the NFL over the last three years. According to the article, in 2007, the NFL's official line with respect to concussion in football was that "current research with professional athletes has not shown that having more than one or two concussions leads to permanent problems if each injury is treated properly."

That statement has now been replaced with a poster placed in locker rooms across the league that states: "Concussion is a brain injury that alters your brain function," and "There may be significant consequences of 'playing through' a concussion. Repetitive brain injury, when not treated promptly and properly may cause damage to your brain." This poster was released just last month.

Time magazine has published a number of articles over the last two years on the dangers of concussions from sport. The article of particular relevance to Axon Sports (published 21 January 2009) was titled "Study: Kids Competing Too Soon After Concussion". The article made reference to a study that showed 41% on concussed athletes in schools in the US resumed playing too soon. "The consequences of going back too early can be dire." The article made reference to a 16 year old boy, Jaquan Waller, who was killed in 2008 due to Second Impact Syndrome. The boy suffered concussion and returned to play football two days later. It was the combination of impacts that caused the death, with neither impact alone judged to have been sufficient to cause death.

Following the death of Waller in North Carolina, an athletic task force in that state recommended that all public schools employ a full time athletics trainer by August 2011, according to the *Time* article.

That article sought to explain the phenomenon of Second Impact Syndrome. According to David Hovda, the director of Brain Injury Research at UCLA's David Geffen School of Medicine, "Con-

cussion produces an energy crisis in the brain. A second concussion will cause such an energy demand that it will overwhelm the survival capability of the brain."

The article also said that following concussion, the brain becomes sluggish. An athlete has slower reaction times and is more susceptible to further injury on the field. The problem is that just 42% of high schools have trainers who are certified to deal with concussion.

The Lystedt Law

In January this year, *Time* ran another story on concussion called "The Problem with Football: How to Make it Safer." That article referred to a new law that had been passed in 2009 called Lystedt Law, following the serious injury to a 13 year old boy, Zackery Lystedt. In 2006, Lystedt was concussed during a football game but continued to play, experienced a brain haemorrhage and remains paralysed on one side of his body.

That law requires that players who have been concussed can not return to play the same day if suspected of suffering concussion and that the player needs to be cleared by a doctor in days or weeks following the match. CogState's CEO believes the Axon Sports product will be used as a tool by doctors as well to assess the neurological impact from concussions.

In May 2010 the NFL Commissioner wrote to the Governors of 44 states in the US to request that a similar legislation to Lystedt Law be passed in those states.

NCAA Policy

In April 2010, the National Collegiate Athletic Association Executive Committee adopted a concussion management policy for all NCAA college athletes. That policy requires colleges to take baseline cognitive measurement assessments of all students playing football and 12 other sports or athletic activities including gymnastics, soccer, rugby and softball. The NCAA has around 400,000 student members. At this stage it is unclear how the NCAA will enforce or police this policy.

New Jersey Congressman, Bill Pascrell, is seeking to have legislation passed in the US, called the ConTACT Act. Following a similar death in New Jersey of a 16 year old boy, Ryne Dougherty, who died following concussion after returning to play football, Pascrell believes "Recurrent brain injuries and Second Impact Syndrome are highly preventable if schools are equipped with the knowledge and tools to adequately recognize and respond to a concussion." Through the proposed legislative change, Pascrell is seeking to provide the States with funding to implement computerized pre-season baseline and post-injury neuropsychological testing for student athletes, which is precisely what Axon Sports is offering.

Similar coverage of Second Impact Syndrome was published in *USA Today* in April 2009, and in May this year that newspaper discussed the gaps in measuring concussion and the "alarming frequency" amongst high school athletes with which concussions are occurring.

The CEO of Axon Sports, Polly James, spent 12 years at Eastbay, which was acquired by Footlocker. It has become the largest catalogue-direct seller of footwear and apparel in the world and the largest retailer to schools in the US. James was the 5th employee at Eastbay. At her 10 years at Eastbay and Footlocker, James said she introduced Eastbay and Footlocker in the Internet era, rising to the position of VP of sales and marketing.

Eastbay is just the type of sports product distributor that Axon Sports will look to sell its product through and one of the key short term goals is to secure such a distribution arrangement. James then joined Chapa in starting up SPARQ Products in 2004, being its first employee.

Chapa's wife, Patricia Eiting, is legal counsel for Axon Sports, and she has previously negotiated contracts with groups such as Nike and Foot Locker, as well as the sale of SPARQ Products to Nike and Students Sports to ESPN/Disney.

CogState is not without its own retail experience, with its chairman and founder of the company, Martyn Myer, part of the family that formed the **Myer** retail business in Australia.

Software Program Development

CogState has been able to respond very quickly to a new market opportunity which is an impressive effort. Significant program development has occurred in the last nine months over the previous CogState Sport concussion management product as well as structuring of the joint venture arrangements.

The new program, that has become the core technology of Axon Sports, allows testing at any PC or Mac computer with the test run off the RAM on the local computer rather than having to download any large software program. Importantly this also means there is no difference in response times across different computer systems or Internet networks. The software modifications have all been completed in-house by CogState's Melbourne software developers.

Other improvements to the program are that users have the ability to link in other people to the results, included coaches, parents and doctors. The product can now be accessed online by anyone after paying a user fee of US\$7.50. The test takes around 15 minutes to complete and a report is issued to the user immediately. The results are supported by the battery of cognitive testing data that CogState has collected over the years by its scientific team, which includes Professor Paul Maruff, Assoc. Professor David Darby and Dr John Harrison.

Advantages over Competing Products

There are three existing competitors to Axon Sports, although only ImPACT is the main competitor at this stage according to Axon Sports CEO Polly James. James believes their product has several distinctive advantages over ImPACT.

The competing ImPACT tests, both baseline and post-concussion, are conducted over the Internet, the same as the Axon Sports test. However, the assessment of the result needs to be assessed by a neuro-psychologist after the concussion. This limits the test's

application to larger cities. The Axon Sports test result is available immediately once the test is completed.

Another important point of difference is that the ImPACT test is marketed to schools and sports groups. It is expected that Axon Sports will place a lot of effort in marketing the test directly to parents, which the company believes is a key target market for the test.

The third point of difference is cost. The ImPACT test costs only US\$2.00 per test, compared to US\$7.50 for the Axon Sports test. Although cheaper, the ImPACT model has not included sufficient margin to allow distribution by sports products distributors. Axon Sports will seek to sell its product through distributor product catalogues as well, where if sufficient enticement is provided through distributor margins, should see distributors keen to promote the product in the US. Axon Sports will also sell the product directly to sporting organisations and athletes and their families.

CEO of Axon Sports, Polly James, estimates that ImPACT has secured around 20% of the market, although it is unclear how much of that market has been secured through providing its product on a complimentary basis. If Axon Sports itself could gain a 20% market share in the US, that would translate to revenue in excess of US\$30 million.

Investment in Axon Sports

CogState and Quixote Investment have contributed US\$0.5 million each into the Axon Sports joint venture for an equal share as equity investments. CogState will not be involved with the day-to-day management of the business although will have two of five board seats on Axon Sports. It will process the cognitive tests and presumably make any required scientific and program updates. There may be a requirement to make further investments by both groups into the joint venture, depending on product take up.

Axon Sports currently has entitlement to use the CogState test in the US market and has an option for a worldwide license to the product which it can exercise based on achieving performance milestones.

Risks

There are two main risks for CogState from this joint venture. The first is that the company may become distracted from the clinical trials application, which it has spent the last six years building into a profitable business.

The second risk is that the relationship with Quixote may sour. However Chapa has a good track record as an entrepreneur in the sports products business, having started up and sold the SPARQ Products group and also the Students Sports business, each for around US\$25 million. Chapa and his team will be controlling the management and distribution of the product whilst CogState will control and supply the product. That arrangement should help maintain an even and equal relationship.

CogState also has good signage on the product - 'Axon Sports, Powered by CogState'. Another issue for CogState is that it may

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Bioshares Model Portfolio (27 August 2010)

Company	Price (current)	Price added to portfolio	Date added
Sunshine Heart	\$0.025	\$0.036	June 2010
Biota Holdings	\$0.93	\$1.09	May 2010
Tissue Therapies	\$0.19	\$0.21	January 2010
QRxPharma	\$0.90	\$0.25	December 2008
Hexima	\$0.28	\$0.60	October 2008
Atcor Medical	\$0.11	\$0.10	October 2008
CathRx	\$0.18	\$0.70	October 2008
Impedimed	\$0.71	\$0.70	August 2008
Mesoblast	\$1.89	\$1.25	August 2008
Circadian Technologies	\$0.65	\$1.03	February 2008
Patrys	\$0.10	\$0.50	December 2007
Bionomics	\$0.30	\$0.42	December 2007
Cogstate	\$0.25	\$0.13	November 2007
Sirtex Medical	\$4.86	\$3.90	October 2007
Clinuvel Pharmaceuticals	\$0.21	\$0.66	September 2007
Starpharma Holdings	\$0.51	\$0.37	August 2007
Pharmaxis	\$2.01	\$3.15	August 2007
Universal Biosensors	\$1.55	\$1.23	June 2007
Acrux	\$1.94	\$0.83	November 2004
Alchemia	\$0.49	\$0.67	May 2004

Portfolio Changes – 27 August 2010

IN:
No changes.

OUT:
Probiotec has been removed from the portfolio. See previous page.

– Cogstate cont'd from page 3

need to provide further investment into the joint venture, depending on product take-up. CogState held cash reserves of \$3.1 million at June 30 and can afford to increase its investment in Axon Sports if required.

Monitoring Progress

The Axon Sports product has just been released with first sales already having been made. Progress of sales may not be immediately made public however CogState will report the net performance of the business through its half yearly and annual accounts.

Summary

A major shift is occurring in the US over the risk of long term cognitive damage from repeated concussion in football and it has become a high profile issue that is being very publicly discussed through the media. The risk of returning to play too soon following a concussion, termed Second Impact Syndrome, has been well flagged, as has the need to better monitor concussions throughout US high school sports.

The Axon Sports product appears to have arrived at a perfect time for the US market. The product allows measurement of short term cognitive changes within 15 minutes for only US\$7.50, backed by robust scientific data compiled by the CogState scientific team with a similar product used by the pharmaceutical industry in clinical trials. The pricing seems very well chosen, being very affordable and priced at a premium to its main competitor, which should be justified given the scientific data underpinning the tests.

The Axon Sports product can monitor not only short term cognitive changes, but also potentially be used to monitor longer term changes. Implementation of baseline and post concussion cogni-

tive testing may also be seen as a way of satisfying duty of care responsibilities by high schools and sporting teams when returning a player to the field post concussion.

CogState will not be involved in the management of Axon Sports but will provide scientific and IT support as well as being represented at the board level. It will continue to focus on its clinical trials work. There is also a third application of the platform the company will investigate commercializing, and that is in using the product for broader dementia screening across the population.

The CEO of CogState, Brad O'Connor, who we consider as being conservative in outlook, believes the timing to launch this product is perfect, informing investors this week that he believes the market is ready to explode over the next 12-24 months. If he's right, the business certainly has the right management team and product to capitalise on this emerging opportunity. .

CogState is capitalised at \$17 million.

Bioshares recommendation: Strong Buy

(For readers interested in evaluating the test, click on the free sample on the front page of the Axon Sports website www.axonsports.com)

Bioshares

How Bioshares Rates Stocks

For the purpose of valuation, *Bioshares* divides biotech stocks into two categories. The first group are stocks with existing positive cash flows or close to producing positive cash flows. The second group are stocks without near term positive cash flows, history of losses, or at early stages of commercialisation. In this second group, which are essentially speculative propositions, *Bioshares* grades them according to relative risk within that group, to better reflect the very large spread of risk within those stocks.

Group A

Stocks with existing positive cash flows or close to producing positive cash flows.

- Buy** CMP is 20% < Fair Value
- Accumulate** CMP is 10% < Fair Value
- Hold** Value = CMP
- Lighten** CMP is 10% > Fair Value
- Sell** CMP is 20% > Fair Value
(CMP-Current Market Price)

Group B

Stocks without near term positive cash flows, history of losses, or at early stages commercialisation.

Speculative Buy – Class A

These stocks will have more than one technology, product or investment in development, with perhaps those same technologies offering multiple opportunities. These features, coupled to the presence of alliances, partnerships and scientific advisory boards, indicate the stock is relative less risky than other biotech stocks.

Speculative Buy – Class B

These stocks may have more than one product or opportunity, and may even be close to market. However, they are likely to be lacking in several key areas. For example, their cash position is weak, or management or board may need strengthening.

Speculative Buy – Class C

These stocks generally have one product in development and lack many external validation features.

Speculative Hold – Class A or B or C

Sell

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