

In this edition...

Welcome to the last edition of Bioshares for 2007. While the first half was more welcoming to biotechs, the second half has been miserable. However, if one theme emerged from presentations at company AGMs, it was that solid progress had been made in developing and building businesses in the last 12 months. There is clear evidence of real value creation having occurred in the Australian biotech sector. There are numerous stocks offering considerable value at the moment. It is only a matter of time for biotech stock prices to return to realistic levels.

We close with an excellent perspective on managing human capital in biotech firms by Andrew MacDonald, CEO Cytopia, the first in a 12-part series on biotech management.

The editors

	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 (from 4 May '07)	-16.4%
Cumulative Gain	173%
Av Annual Gain (6 yrs)	26.8%

Bioshares is published by Blake Industry & Market Analysis Pty Ltd. The company also provides market and company analysis of the Australian pharmaceutical and biotech industries for local and international funds management institutions, venture capital funds and other related industry groups. For further details contact David Blake (see details below).

Blake Industry & Market Analysis Pty Ltd
ACN 085 334 292
PO Box 193
Richmond Vic 3121
AFS Licence
No. 258032

Enquiries for *Bioshares*
Ph: (03) 9326 5382
Fax: (03) 9671 3633
Email: info@bioshares.com.au

David Blake
Ph: (03) 9326 5382
Email: blake@bioshares.com.au

Mark Pachacz
Ph: (03) 9671 3222
Email: pachacz@bioshares.com.au

Individual Subscriptions (48 issues/year)
\$320 (Inc.GST)
Edition Number 246 (19 December 2007)
ISSN 1443-850X

Copyright 2007 Blake Industry and Market Analysis Pty Ltd. ALL RIGHTS RESERVED. Secondary electronic transmission, photocopying, reproduction or quotation is strictly prohibited without written consent of the publisher.

Bioshares

19 December 2007
Edition 246

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

The Year Ahead In Biotech 2008

The year 2007 was a period in which Australian biotech delivered on Phase II trial results. **Avexa, Peplin, Chemgenex Pharmaceuticals, Progen Pharmaceuticals and Clinuvel Pharmaceuticals**, and **Pharmaxis** in a Phase III study, all delivered decisively positive clinical results that were reflected in healthy share price gains, if only for part of the year for some.

The good news allowed a record amount of capital to be raised in the sector this year (end of year details will follow in the next edition) that has positioned many of these companies to move into the final stage of clinical testing. However the downside is that 2008 may be a quiet year from some of these sector leaders as they move through their Phase III programs ahead of what should be a defining year for biotech in 2009, when at least five companies are due to file their drugs for regulatory approval either in Europe or the USA.

Global credit crisis

The global credit crisis has taken its toll on some biotechs, and more profoundly on those with hedge funds on their share registers, including Clinuvel and Progen. The small cap biotechs have continued to receive a cool response over the year with the mining sector taking most of the investor attention at the small cap speculative end of the market. However there are signs that 2008 may see the overlooked small cap biotech stocks post some strong gains, with companies such as **Prana Biotechnology** and **Living Cell Technology** generating healthy returns for its investors in recent weeks.

With a large part of the country enjoying its summer break in January, historically the month sees a number of smaller biotechs post some reasonable gains. Stocks to keep an eye on over January include **Prana Biotechnology, Phylogica, Tissue Therapies, Xceed Biotechnology, Neuren Pharmaceuticals** and **Bionomics**.

Milestones

On pages 3 to 5, we have listed major milestones for a select group of companies. An extract listing clinical trial results and completions is tabled on page 6. More than **50 clinical trials** are expected to commence in 2008. However, for the companies we have analysed, there appear to be 19 trials to be completed in 2008, with ten clinical trial results (final or interim) to be announced.

Bioshares

**Bioshares will be on a three week break over the holiday period.
The next edition of Bioshares (247) will be published on Friday 18 January.
We would like to wish all of our subscribers a very enjoyable Christmas period and a very successful year ahead in 2008.
And thank-you for subscribing to Bioshares!**

Super Six Performance 2007

In *Bioshares* 198 (December 2006), we selected six stocks for our annual Super Six Stock selection. Half of the stocks have performed exceptionally well and the other half have seen their share prices fall over the year. Overall, the group of six stocks selected generated an average gain of 13% over the year. Below is a summary of developments in those companies.

AcruX

AcruX performed exceptionally well over the year. Its first product, Evamist, a hormone replacement therapy for the treatment of symptoms associated with menopause, gained FDA approval and is due for imminent market launch in the US. Trying to work out how much the market value of an emerging technology is exactly worth can be difficult but AcruX shareholders were enlightened earlier in the year when KV Pharmaceutical purchased the US rights to this product from AcruX's licensee, Vivus, for US\$125 million. The royalty entitlement to AcruX remained unchanged however it confirmed the lucrative value potential of the unique AcruX drug delivery platform. AcruX increased by 79% over the year.

Sirtex Medical

Sirtex Medical has been a good performer over the year with its share price gaining 50%. The company now has a business poised to deliver strong bottom line growth from the sale of its liver cancer therapy. A cloud remains over the company with legal action initiated by the founder against the company and by the University of Western Australia.

Institute of Drug Technology Australia

IDT delivered upon a strong growth in net profit in FY2007, up 53% to \$5.5 million. Its business needed to transition away from its focus on the increasing competitive area of active pharmaceutical ingredient manufacturing over the last three years to that of finished pharmaceutical products and that has now been achieved. The company anticipates continued strong growth. The company's share price increased by 28% over the year.

Arana Therapeutics

Arana Therapeutics' share price fell by 24% over the year. A merger with Evogenix during the year has not been well received by the market, which is in contrast to the positive views held by *Bioshares* on the transaction. With a cash balance of \$169 million at the end of September, an estimated future royalty entitlement of \$80-\$90 million, and its lead drug candidate, ART621, having moved into

Phase II trials, the company is very well positioned and remains significantly undervalued.

Ventracor

LVAD heart pump manufacturer Ventracor has seen its share price fall over the year (down 33%) although the business has never been in a fundamentally stronger position. The company expects to sell over 170 devices this year as it builds the European market and continues with the US trials, where full reimbursement for each device implanted is received by the company.

Sunshine Heart

Sunshine Heart's share price fell by 21% in the year. The company, which is developing the C-Pulse device that wraps around the aorta to assist blood flow from the heart, was expecting to begin its clinical trials in the US although it needs to resubmit its trial design to the FDA and have that approved before it can commence trials.

Super Six Stock Picks 2008

Bionomics and Cytopia

Bionomics and Cytopia are both developing novel cancer therapeutics, called vascular disrupting agents (VDAs). Cytopia has now moved into Phase II trials in patients with multiple myeloma (results due in the second half of 2008) and two further Phase II studies expected to commence later in the new year.

Bionomics' VDA has moved into a Phase I study with enrollment expected to begin in January, in patients with a variety of solid tumours. Both companies have the potential to deliver some very meaningful results in the new year in cancer therapy with their impressive lead programs. Of interest during the year was the major deal completed between **Novartis** and **Antisoma**, valued at US\$890 million in total potential deal value, including a US\$75 million up front payment. Antisoma has a VDA that had completed Phase II trials at the time of the deal.

AcruX

AcruX has once again been selected as a Super Six Stock pick. Drivers will be the launch of its product Evamist early in the new year by **KV Pharmaceutical**, receipt of royalties from Evamist sales on a quarterly basis, and the start of Phase III trials in its two testosterone products that are delivered across the skin.

Peplin

Peplin will start its Phase III trials with its drug candidate PEP005, which is a topical treatment for pre-cancerous and non-melanoma skin cancer lesions. A listing on the Nasdaq in the new year will be a pivotal event worth monitoring for additional buying support from the US. The company will also raise up to US\$75 million upon listing.

NeuroDiscovery

NeuroDiscovery should hit key milestones in 2008. These include results from two Phase II studies with its topical pain treatment (NDL-101) and the start of a Phase II trial in neuropathic pain with its lead compound (NSL-043) being jointly developed with Sosei

Performance of Super Six Stock Picks for 2007

Company	Share Price (22/12/06)	Share Price (19/12/07)	Change over year
AcruX	\$0.78	\$1.40	79%
Arana Ther.	\$1.54	\$1.17	-24%
Inst. Drug Tech. Aust	\$1.92	\$2.46	28%
Sirtex Medical	\$2.80	\$4.20	50%
Ventracor	\$0.94	\$0.63	-33%
Sunshine Heart	\$0.19	\$0.15	-21%

Ave. 13%

Cont'd on page 5

2008 Milestone Table – Selected Companies

ASX Code	Company Name	Period	Flag	Event
AAH	Arana Ther.	2008 Q1	CT-C	Start Phase IIa ART621 - psoriasis (dose finding)
AAH	Arana Ther.	2008 Q3	CT-C	Start Phase II ART621 - rh. arthritis
ACL	Alchemia	2008	SUB	Partner Dr Reddys files ANDA for fondaparinux
ACL	Alchemia	2008 H2	SALES	Fondaparinux market launch H2
ACL	Alchemia	2008 Q1	Other	Meetings with FDA /EMA re HyCAMP
ACL	Alchemia	2008 Q1	Manuf.	Complete first commercial scale-up and manufact. of fondaparinux
ACL	Alchemia	2008 Q1	IND-F	File IND for HyCAMP
ACL	Alchemia	2008 Q2/3	CT-C	Start HyCAMP combination study
ACR	Acrux	2008 end	CT-F	Complete Ph. I trial Fentanyl MDTs
ACR	Acrux	2008 Q1	CT-F	Complete multidose trials - contraceptive sprays
ACR	Acrux	2008 Q2	CT-C	Partner Organon Starts Ph. I trial of undisclosed cmpd.
ACR	Acrux	2008 Q2	CT-C	Start Ph. III trial - Testosterone MD Lotion
ANP	Antisense Therapeutics	2008 mid	CT-R	Results from Phase IIa MS trial in 80 patients
AVX	Avexa	2008 H2	IND-F	File IND - antibacterial
AVX	Avexa	2008 H2	IND-F	File IND - HIV integrase inhibitor
AVX	Avexa	2008 Q1?	CT-C	Start ATC Ph. III (was expected Dec. 2007)
BIT	Biotron	2008 mid	CT-R	Results Phase Ib/IIa dose finding and efficacy study in HCV patients
BIT	Biotron	2008 mid	CT-R	Results Phase Ib repeat dose study in HIV patients
BIT	Biotron	2008 Q1	CT-C	Start a Phase Ib/IIa dose finding and efficacy study in HCV patients
BIT	Biotron	2008 Q1	CT-C	Start a Phase Ib repeat dose study in HIV patients
BLS	Biolayer	2008 Q	Other	Complete 3 IVD projects for clients
BNO	Bionomics	2008 Q1	CT-C	Start BNC105 Ph. I trial
BNO	Bionomics	2008 Q2	Manuf.	BNC210 - complete scale-up and manufacture
BNO	Bionomics	2008 Q3	Other	BNC210 - pre-IND meeting FDA
BNO	Bionomics	2008 Q4	CT-F	Complete BNC105 Ph. I trial enrollment
BTA	Biota	2008 H2	Other	Partnered HCV - milestone event
BTA	Biota	2008 H2	Other	Partnered RSV - milestone event
BTA	Biota	2008 Q2	CT-F	Mediation with GSK to be completed by 16.05/08
BTA	Biota	2008 Q2	CT-C	Start HSV Phase IIa
BTA	Biota	2008 Q3	Other	Trial date (w. GSK) 1.7.2008
BTA	Biota	2008 Q3	CT-F	Complete LANI healthy adults and elderly (UK study)
BTA	Biota	2008 Q4	CT-F	Complete LANI Ph. II trial (JY stdy)
CGS	Cogstate	2008	SALES	Sign contracts for 3-4 phase III clinical trials
CGS	Cogstate	2008	SALES	Sign contracts for the first time with 6-10 new customers
CIR	Circadian	2008 H1	Manuf.	Completion of VEGF-D Ab humanization and optimization
CIR	Circadian	2008 H1	CT-C	Trinam (being developed by Ark Therapeutics) commencing Ph. III trial
CUV	Clinuvel	2008 Q1	CT-C	Start SU Ph. II trial (Europe)
CUV	Clinuvel	2008 Q2	CT-C	Start cohort 2 SCC Ph. II (EU)
CUV	Clinuvel	2008 Q2	CT-C	Start cohort 3 EPP Ph. III (EU)
CUV	Clinuvel	2008 Q2	CT-C	Start cohort 3 PLE Ph. III (EU)
CUV	Clinuvel	2008 Q2	CT-C	Start Pilot PDT Ph. II (EU)
CUV	Clinuvel	2008 Q4	CT-R	Interim results EPP PH. III trials EU/AUS
CUV	Clinuvel	2008 Q4	CT-C	Start EPP PH. II (US)
CUV	Clinuvel	2008 Q4	CT-C	Start PDT PH. II (US)
CXD	CathRx	2008 early	SALES	Start selling diagnostic products
CXD	CathRx	2008 H1	SUB	Regulatory submissions EU/Australia, 4mm and 8mm catheters
CXD	CathRx	2008 H1	CT-C	Start multi-centre trials of therapeutic catheters for RS heart
CXD	CathRx	2008 H1	CT-C	Start multi-centre trials of diagnostic catheters for LS heart
CXS	ChemGenex Pharm.	2008 H1	Other	Omacetaxine - Pre-NDA meeting with FDA
CXS	ChemGenex Pharm.	2008 H1	NDA-F	Omacetaxine - begin rolling NDA submission
CXS	ChemGenex Pharm.	2008 H1	CT-C	Start Ph. IIb - Quinamed
CXS	ChemGenex Pharm.	2008 Q2	Other	Omacetaxine - present updated results ASCO

Key

CT-C	Clinical Trials - commencement of trial (first patient intervention)	Manuf.	Manufacturing or drug engineering related milestone
CT-F	Completion of clinical trial	NDA-F	Filing of new drug application with US FDA
CT-R	Clinical Trials - reporting of data - interim or final	Other	Other milestones
Deal	Securing of collaborator or licensee or similar	REG	Regulatory approval
FIN	Financial milestone -eg performance milestone payment	SALES	First sales and income from product launch
IND-F	Filing of IND with US FDA	SUB	Reg. submission

2008 Milestone Table – Selected Companies

ASX Code	Company Name	Period	Flag	Event
CYT	Cytopia	2008	CT-C	Start clinical program - FMS
CYT	Cytopia	2008 Q1	CT-R	Complete CYT997 Oral Ph. I
CYT	Cytopia	2008 Q1	CT-C	Start CYT997 thirds Ph. II clinical trial
CYT	Cytopia	2008 Q3	CT-R	Interim results CYT997 Ph. II multiple myeloma (14 pts)
CYT	Cytopia	2008 Q3	CT-C	Start CYT997 Ph. II randomised clinical trial
CYT	Cytopia	2008 Q4	IND-F	File IND JAK2 program for MPD
CYT	Cytopia	2008 Q4	CT-F	Complete CYT997 multiple myeloma
DIA	Dia-B Tech	2008 H2	CT-C	Start ISF-402 Phase II trial
GIA	Giaconda	2008 Q1	CT-C	Start Myoconda European Phase III trial (complete +52 weeks)
HGN	Halcygen	2008 Q2	CT-C	Start Subazole Ph.III trial (complete mid 2009)
HTW	Heartware	2008 Q1	SUB	CE Mark submission
HTW	Heartware	2008 Q1	Other	Supply answers to FDA comments on IDE submission by end Jan.
HTW	Heartware	2008 Q2	REG	CE Mark approval (+TGA approval)
HTX	HealthLinx	2008 H2	CT-C	Start multi-site trial for community basec screening test
HTX	HealthLinx	2008 Q1	SALES	Launch OvPlex Mk I into ANZ market [through ARL labs]
HTX	HealthLinx	2008 Q1	Other	Complete independent data analysis (OvPlex Mk I)
HTX	HealthLinx	2008 Q2	Other	Complete collaboration with Uni Liverpool (Ovplex Mk II)
HTX	HealthLinx	2008 Q4	Other	Complete validation Uni Liverpool sample sets (Ovplex Mk II)
HXL	Hexima	2008 H1	Other	Results of second field trial of defensin technology in cotton (Australia)
HXL	Hexima	2008 H1	Deal	Sign collaboration agreement/s for defensin technology
IMU	Imugene	2008 ???	Other	Chicken aneamic and infectious bursal vacc. - Start animal trials
IMU	Imugene	2008 early	Other	Coccidiosis vacc. (with ABIC Teva) - proof of concept trial
IMU	Imugene	2008 Q1	Other	PRRS pig vaccine (optimised) - Start animal trials
MSB	Mesoblast	2008	IND-F	File IND for knee osteoarthritis
MSB	Mesoblast	2008	CT-F	Complete Phase IIa heart attack trial
MSB	Mesoblast	2008	CT-F	Complete spinal fusion trial
MSB	Mesoblast	2008	CT-C	Start AMD and diabetic retinopathy trial
MSB	Mesoblast	2008	CT-C	Start Phase IIa for knee osteoarthritis
MSB	Mesoblast	2008 Q1	IND-F	File IND for long bone fracture repair
MSB	Mesoblast	2008 Q1	CT-C	Start Phase IIa heart failure trial
MSB	Mesoblast	2008 Q1	CT-C	Start Phase Ia for long bone fracture repair
NDL	NeuroDiscovery	2008 mid	CT-C	Phase II NSL-043 neuropathic pain trial to begin
NDL	NeuroDiscovery	2008 Q1	CT-F	Complete two Phase II trials with NSL-101 in dental applications
NDL	NeuroDiscovery	2008 Q2	CT-R	Results from two NSL-101 trials in dental applications
OIL	Optiscan Imaging	2008 mid	CT-F	Zeiss pilot trial result for rigid endomicroscope
OIL	Optiscan Imaging	2008 Q1	Other	Resolve marketing and forecast issues with Pentax
PAB	Patrys	2008 H2	IND-F	File INDs for two lead compounds
PAB	Patrys	2008 H2	IND-F	IND filings for PAT-LM1 and PAT-SM6
PAB	Patrys	2008 H2	CT-C	Start Phase I trials for two lead human antibody compounds
PAB	Patrys	2008 mid	Manuf.	Results from large scale production run of two lead drug candidates
PAB	Patrys	2008 Q1	Other	Pre-IND meetings with FDA for PAT-LM1 and PAT-SM6
PAB	Patrys	2008 Q1	Manuf.	Start large scale production of PAT-LSM6 for clinical program
PBT	Prana Biotechnology	2008 Q1	CT-R	Data from Phase IIa Alzheimer's trial
PGL	Progen Industries	2008 H1	CT-R	Results from Phase II prostate cancer study
PGL	Progen Industries	2008 H2	IND-F	File IND for PG500 series 1st compound
PGL	Progen Industries	2008 H2	CT-F	Completion of Phase II melanoma study
PLI	Peplin	2008	CT-R	Results from sBCC trial in the US
PLI	Peplin	2008	CT-C	Start second Phase III AK trial
PLI	Peplin	2008 Q1	FIN	List on Nasdaq market
PLI	Peplin	2008 Q1	CT-C	Begin first Phase III trial in AK

Key

CT-C	Clinical Trials - commencement of trial (first patient intervention)	Manuf.	Manufacturing or drug engineering related milestone
CT-F	Completion of clinical trial	NDA-F	Filing of new drug application with US FDA
CT-R	Clinical Trials - reporting of data - interim or final	Other	Other milestones
Deal	Securing of collaborator or licensee or similar	REG	Regulatory approval
FIN	Financial milestone -eg performance milestone payment	SALES	First sales and income from product launch
IND-F	Filing of IND with US FDA	SUB	Reg. submission

2008 Milestone Table – Selected Companies

ASX Code	Company Name	Period	Flag	Event
PXS	Pharmaxis	2008	SALES	Ramp up in Aridol sales expected in Europe and Korea
PXS	Pharmaxis	2008	REG	Aridol approval in Korea
PXS	Pharmaxis	2008 late	REG	Aridol approval in USA
PXS	Pharmaxis	2008 Q1	NDA-F	Aridol NDA to be filed in USA
PXS	Pharmaxis	2008 Q1	NDA-F	File marketing application in Australia for bronchiectasis
PXS	Pharmaxis	2008 Q1	CT-C	PXS25 Phase I trial to start for autoimmune diseases
PXS	Pharmaxis	2008 Q1	CT-C	Phase III trial in CF to start in USA
PXS	Pharmaxis	2008 Q1	CT-C	Phase III trial in bronchiectasis to start in USA
PXS	Pharmaxis	2008 Q2	CT-F	Phase III trial in CF in Europe to close recruitment
PYC	Phylogica	2008	Deal	Fee for service and technology access deals
PYC	Phylogica	2008 mid	Other	Complete preclinical studies with Opsoma collaboration
PYC	Phylogica	2008 mid	CT-C	Burns Phase IIa trial to commence
PYC	Phylogica	2008 Q1	Deal	Results from testing with major pharma and possible commercial deal
QRX	QRxPharma	2008	CT-C	Start Phase II trials with T9001
QRX	QRxPharma	2008	CT-C	Start 2nd Phase III trial with lead compound Q8003IR
QRX	QRxPharma	2008 H2	CT-F	Complete first Phase III for immediate release Q8003IR
QRX	QRxPharma	2008 H2	CT-C	Start Phase II trial for extended release Q8011CR
QRX	QRxPharma	2008 Q1	CT-C	Start Phase I trial for extended release Q8011CR
SPL	Starpharma	2008	Deal	Commercial partnerships for dendrimers in delivery of siRNA as therapeutics
SPL	Starpharma	2008	CT-F	Complete safety study for Vivagel in HIV trial
SPL	Starpharma	2008	CT-F	Complete Vivagel condom coating trials, safety and ex-vivo efficacy
SPL	Starpharma	2008	CT-C	Start major HIV prevention trial in Africa and other regions
SPL	Starpharma	2008	CT-C	Start major genital herpes prevention trial in US and Africa
SPL	Starpharma	2008	CT-C	Small safety clinical trials with Vivagel as condom coating and ex-vivo efficacy trials
SPL	Starpharma	2008 Q1	CT-F	Complete safety study for Vivagel in genital herpes trial
TIS	Tissue Therapies	2008	Deal	License VitroGro to wound care marketing partner/s
TIS	Tissue Therapies	2008 mid	REG	Submit VitroGro wound healing product for approval in Canada
TIS	Tissue Therapies	2008 Q1	CT-F	Results from 60 patient wound healing trial.
TIS	Tissue Therapies	2008 Q1	CT-C	Start 60 patient wound healing trial in venous, pressure and diabetic ulcers in Canada.
UBI	Universal Biosensors	2008	REG	Gain regulatory clearance for glucose test
UBI	Universal Biosensors	2008	Manuf.	Commission manufacturing facility for glucose test
VCR	Ventracor	2008	Other	Product reimbursement in European countries
VCR	Ventracor	2008 H1	Other	Thoratec HeartMate II approval in US (likely to expand LVAD market)
VCR	Ventracor	2008 late	CT-F	Approach full recruitment for BTT trial in USA
XBL	Xceed Biotechnology	2008 H2	CT-C	Start clinical trial with BTM for full thickness wounds
XBL	Xceed Biotechnology	2008 mid	CT-C	Start clinical trial with EASE for superficial wounds
XBL	Xceed Biotechnology	2008 Q1	FIN	Complete demerger and IPO of Polynovo Biomaterials
XBL	Xceed Biotechnology	2008 Q1	Deal	Third medical device deal with international partner

Key

CT-C	Clinical Trials - commencement of trial (first patient intervention)
CT-F	Completion of clinical trial
CT-R	Clinical Trials - reporting of data - interim or final
Deal	Securing of collaborator or licensee or similar
FIN	Financial milestone -eg performance milestone payment
IND-F	Filing of IND with US FDA

Manuf.	Manufacturing or drug engineering related milestone
NDA-F	Filing of new drug application with US FDA
Other	Other milestones
REG	Regulatory approval
SALES	First sales and income from product launch
SUB	Reg. submission

Super Six Stocks - from page 3

in Japan. We expect continued solid growth from its profitable pharmaceutical services business.

Patrys

Patrys listed on the ASX earlier this year. The company is developing a range of human antibodies. The antibody space continues to garner strong investor interest. Patrys has a suite of human antibody candidates and expects to file two INDs in the second half of 2008 with trials anticipated to commence before the end of 2008.

Super Six Stock Picks for 2008

Company	Share Price (19/12/07)
Acrux	\$1.400
Peplin	\$0.740
NeuroDiscovery	\$0.145
Patrys	\$0.500
Bionomics	\$0.445
Cytopia	\$0.485

Cont'd over

**2008 Milestone Table – Selected Companies
Clinical Trial Completion and Results Announcement Milestones Extract**

ASX Code	Company Name	Period	Flag	Event
2008 - quarters unspecified				
MSB	Mesoblast	2008	CT-F	Complete Phase IIa heart attack trial
MSB	Mesoblast	2008	CT-F	Complete spinal fusion trial
SPL	Starpharma	2008	CT-F	Complete safety study for Vivagel in HIV trial
SPL	Starpharma	2008	CT-F	Complete Vivagel condom coating trials, safety and ex-vivo efficacy
PLI	Peplin	2008	CT-R	Results from sBCC trial in the US
2008 - H1				
PGL	Progen Industries	2008 H1	CT-R	Results from Phase II prostate cancer study
2008 - H2				
PGL	Progen Industries	2008 H2	CT-F	Completion of Phase II melanoma study
QRX	QRxPharma	2008 H2	CT-F	Complete first Phase III for immediate release Q8003IR
2008 - Q1				
ACR	Acrux	2008 Q1	CT-F	Complete multidose trials - contraceptive sprays
NDL	NeuroDiscovery	2008 Q1	CT-F	Complete two Phase II trials with NSL-101 in dental applications
SPL	Starpharma	2008 Q1	CT-F	Complete safety study for Vivagel in genital herpes trial
TIS	Tissue Therapies	2008 Q1	CT-F	Results from 60 patient wound healing trial.
CYT	Cytopia	2008 Q1	CT-R	Complete CYT997 Oral Ph. I
PBT	Prana Biotechnology	2008 Q1	CT-R	Data from Phase IIa Alzheimer's trial
2008 - Q2				
BTA	Biota	2008 Q2	CT-F	Mediation with GSK to be completed by 16.05/08
PXS	Pharmaxis	2008 Q2	CT-F	Phase III trial in CF in Europe to close recruitment
NDL	NeuroDiscovery	2008 Q2	CT-R	Results from two NSL-101 trials in dental applications
2008 - Q3				
BTA	Biota	2008 Q3	CT-F	Complete LANI healthy adults and elderly (UK study)
CYT	Cytopia	2008 Q3	CT-R	Interim results CYT997 Ph. II multiple myeloma (14 pts)
2008 - Q4				
BNO	Bionomics	2008 Q4	CT-F	Complete BNC105 Ph. I trial enrollment
BTA	Biota	2008 Q4	CT-F	Complete LANI Ph. II trial (JY study)
CYT	Cytopia	2008 Q4	CT-F	Complete CYT997 multiple myeloma
CUV	Clinuvel	2008 Q4	CT-R	Interim results EPP PH. III trials EU/AUS
2008 - mid				
OIL	Optiscan Imaging	2008 mid	CT-F	Zeiss pilot trial result for rigid endomicroscope
ANP	Antisense Therapeutics	2008 mid	CT-R	Results from Phase IIa MS trial in 80 patients
BIT	Biotron	2008 mid	CT-R	Results Phase Ib/IIa dose finding and efficacy study in HCV patients
BIT	Biotron	2008 mid	CT-R	Results Phase Ib repeat dose study in HIV patients
2008 - end/late				
ACR	Acrux	2008 end	CT-F	Complete Ph. I trial Fentanyl MDTs
VCR	Ventracor	2008 late	CT-F	Approach full recruitment for BTT trial in USA

Super Six Stocks - from page 5

Danger Stocks

Of the five danger stocks highlighted this time last year (see table below), three stocks fell over the year, these being **Apollo Life Sciences**, **Heartware** and **Cellestis**. One stock, **Solagran** generated a strong gain over the year. Overall, the five stocks generated an average gain of 27% due to the strong share price performance of Solagran.

Looking forward, there are few danger stocks in the sector that we would select. **Pharmaxis** will need to ensure it maintains steady progress to justify its current market capitalisation of \$750 million. **Cellestis** continues to look overpriced with slow progress in building sales for its TB diagnostic. The sector is offering many excellent investment opportunities into 2008. This is reflected in our Model Portfolio which currently has a record high 22 stocks included.

Bioshares

Performance of danger stocks in 2007

Company	Share Price 21/12/06	Share Price 19/12/07	Change Over Year
Apollo Life Sciences	\$0.46	\$0.20	-58%
Solagran	\$0.36	\$1.15	219%
Fermiscan	\$1.02	\$1.16	14%
Cellestis	\$3.83	\$2.96	-23%
Heartware	\$0.70	\$0.57	-19%

Av. 27%

Correction:

In Bioshares 245 (p3), the share price of Patrys was incorrectly stated as 78 cents. The correct figure was 50 cents. The date of listing for PAB was July 13, not July 16.

Biotech Management Series

Managing Human Capital in Biotech

Andrew MacDonald – CEO, Cytopia

Management of good science and strong IP is integral to the success of any biotech company and we hear much about the different ways in which this is done. We hear much less about an equally important area of management - human capital. The success in this area plays a crucial role in the long term success of the company.

Biotechs usually commence life as startups and the journey for a board and management team is inevitably a long one. The biggest challenge is often the transition from the early days of the founder through to the establishment of a viable commercial enterprise.

In a startup environment where speed is of the essence, too few people are available to get tasks done, and every decision comes from one person, management of human resources is often a low priority. Changes in the business are needed to shift this priority.

A key driver for change is often the new investor(s) in the business. Shareholders will be looking for a return on their investment but should also be looking for well planned and managed development to deliver it, particularly if the company is publicly listed. This will only happen when the highly reactive, individualistic management style of a startup transitions to a more proactive, consensus oriented style of management.

Is biotech any different to other sectors? In many aspects, the answer is no - the issues are common - but there are some notable differences;

- Few other sectors take such a long time to deliver for their shareholders. Getting the foundations right is even more critical than in sectors with shorter time horizons.
- Many businesses take general commercial skills and expertise and build up specific technical expertise - biotech tends to do it the other way round.
- Most biotechs are spawned from institutions and academia and their natural drivers don't sit well with commercial drivers. For instance, a shift in focus is needed from "doing interesting science" to "achieving commercial scientific outcomes".

There is no one approach that works for every company and the life cycle for a business is such that different management approaches to human capital will be needed at various stages of development. However there is much to be learned from more mature companies in the biotech sector.

Change and culture

Businesses continually go through change as they scale up and change is best achieved with a supportive culture. Good biotech companies put together great groups of people with the right mix of skills to deliver the best science and build a culture around them. However, to build the right culture takes time and patience - behaviours do not alter overnight.

How do biotech companies do what they do?

Many of the activities conducted by life science firms are not self-evident, so we have selected a dozen different topics covering the major aspects of biotech company management as the subjects of contributions from biotech CEOs and experienced executives. We hope the series, which will run over the next few months will both inform and educate. The topics to be covered include the following:

1. Partnering & Licensing:
2. Project and Product Development Selection
3. IP Management [External Perspective]
4. Legal Issues and IP Management [Internal Perspective]
- 5. Human Capital Management**
6. Strategy and leadership
7. Project Management Skills and their application
8. Financial Management and Systems
9. Clinical Trials and Regulatory Affairs Management
10. Risk Mitigation
11. Capital: requirements, sourcing and management
12. Market Analysis and Competitive Intelligence

Scientists often have not benefited from any management training and are therefore not well equipped with the right leadership skills. Companies with a clear eye to the future make that investment in their people, through on-job training and other formal training. .

It is important to involve everyone in change and for the views of people to be listened to. Everyone has something to contribute. Biotechs employ very smart people who can provide input in all areas of the business, not just the science.

Communication and delegation

Good biotech companies make sure that there is effective and efficient communication through the business. Keeping people in the dark does not work. Everyone from the bench scientists through to senior managers should know what the business is trying to do, how it is going about it and how their role fits. Communication builds trust and respect and is another piece in the culture "jig-saw".

Good biotech companies also allocate responsibilities to, and require accountability, from all of their people. This process not only helps people grow in their roles but achieves a better quality of decision making. There will sometimes be mistakes along the way but with the right leadership, people will quickly learn from their mistakes.

In combination with sound communication, delegation is an important way to manage risk within a company. It helps develop people and provides the business with backup support for key functions.

Cont'd over

Managing Human Capital – cont'd

Decision making

The quality of decision making stands out in good companies. Biotech is no different and as multi-million dollar businesses, life science companies demand clear and objective decisions that are tied to a business strategy.

The approaches that are heard in start-ups, such as "lets just see where the science takes us" or "we have spent so much to date that we cannot stop now", should be replaced in time with a much more ordered and structured environment where the company can measure its progress against pre-determined goals. Making the change is far from easy and requires skills sets which have traditionally not been provided in an academic world.

Decisions need to be made earlier rather than later, particularly hard or difficult decisions, and based on objective facts, not subjective, emotional views. The better companies take apart "black boxes" or segment operations in such a way that their contribution is understood and can be measured.

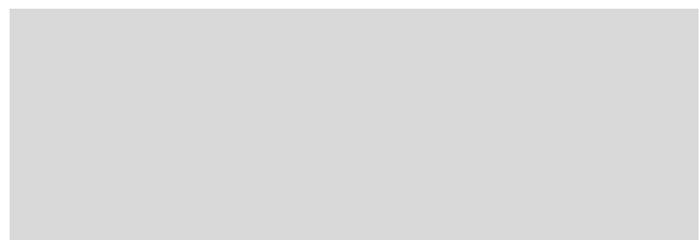
The people pipeline

It is true that science is not a democracy but on the other hand the company must always be bigger than the individual. As companies grow from the start up stage, loss of people - often key individuals - is almost inevitable. This is not really a threat but an opportunity to bring in new people with new skills or to replace existing skills. It can also be an excellent catalyst for cultural change.

Founders often choose not to continue with their company and this is a very common outcome. It is not always the case but "win/win" arrangements can still be achieved where founders move onto other interests whilst supporting new people into key roles and maintaining a relationship with the company.

It is important to not "throw the baby out with the bathwater". Good science skills are absolutely critical and must be balanced with the right commercial approach. Most biotech companies have a set of individuals with great scientific skills and the specific challenge for each company is to build on these skills rather than lose key people.

There is no doubt that the focus today on managing human capital in the biotech sector is far greater than a decade ago. Those companies that find the right balance of management of their intellectual property and management of their human capital stand a far better chance of delivering long term success.



Bioshares Model Portfolio (19 December 2007)

Company	Price (current)	Price added to portfolio	Date added
Patrys	\$0.50	\$0.50	December 2007
NeuroDiscovery	\$0.15	\$0.16	December 2007
Bionomics	\$0.45	\$0.42	December 2007
Cogstate	\$0.13	\$0.13	November 2007
Ventracor	\$0.63	\$0.625	October 2007
Sirtex Medical	\$4.20	\$3.90	October 2007
Clinuvel Pharmaceuticals	\$0.34	\$0.66	September 2007
Progen Pharmaceuticals	\$2.50	\$3.52	September 2007
Starpharma Holdings	\$0.38	\$0.37	August 2007
Pharmaxis	\$3.88	\$3.15	August 2007
Universal Biosensors	\$1.35	\$1.23	June 2007
Biota Holdings	\$1.22	\$1.55	March 2007
Tissue Therapies	\$0.41	\$0.58	February 2007
Probiotec	\$1.45	\$1.12	February 2007
Phylogica	\$0.21	\$0.42	January 2007
Peplin Inc	\$0.74	\$0.83	January 2007
Arana Therapeutics	\$1.17	\$1.31	October 2006
Chemgenex Pharma.	\$0.98	\$0.38	June 2006
Cytopia	\$0.49	\$0.46	June 2005
Optiscan Imaging	\$0.29	\$0.35	March 2005
AcruX	\$1.40	\$0.83	November 2004
Alchemia	\$0.61	\$0.67	May 2004

Portfolio Changes – 19 Dec 2007

IN:
Patrys has been included. Refer to discussion in last week's edition of Bioshares (245).

OUT:
Sunshine Heart has been removed, as uncertainty regarding the FDA's consideration of its IDE application continues.

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

Corporate Subscribers: Phylogica, Pharmaxis, NeuroDiscovery, Biotech Capital, Cygenics, Cytopia, Biodiem, Arana Therapeutics, Starpharma Holdings, Cogstate, Xceed Biotechnology, Incitive, Optiscan Imaging, Bionomics, ChemGenex Pharmaceuticals, Medical Therapies, Circadian Technologies, Biota Holdings, Stem Cell Sciences, Halcygen Pharmaceuticals, Peplin, BioMD, Impedimed, QRxPharma

Disclaimer:

Information contained in this newsletter is not a complete analysis of every material fact respecting any company, industry or security. The opinions and estimates herein expressed represent the current judgement of the publisher and are subject to change. Blake Industry and Market Analysis Pty Ltd (BIMA) and any of their associates, officers or staff may have interests in securities referred to herein (Corporations Law s.849). Details contained herein have been prepared for general circulation and do not have regard to any person's or company's investment objectives, financial situation and particular needs. Accordingly, no recipients should rely on any recommendation (whether express or implied) contained in this document without consulting their investment adviser (Corporations Law s.851). The persons involved in or responsible for the preparation and publication of this report believe the information herein is accurate but no warranty of accuracy is given and persons seeking to rely on information provided herein should make their own independent enquiries. Details contained herein have been issued on the basis they are only for the particular person or company to whom they have been provided by Blake Industry and Market Analysis Pty Ltd. The Directors and/or associates declare interests in the following ASX Healthcare and Biotechnology sector securities: AAH, ACL, ACR, BLS, BOS, BTA, CGS, CYT, CUV, CXS, HXL, MBP, NEU, PAB, PLI, PGL, PXS, SHC, SPL, TIS,UBI. These interests can change at any time and are not additional recommendations. Holdings in stocks valued at less than \$100 are not disclosed.

Subscription Rates (inc. GST)

48 issues per year (electronic distribution): **\$320**

For multiple email distributions within the same business cost centre, our pricing structure is as follows:	\$550	2-3 email addresses
	\$750	4-5 email addresses
	\$950	6-10 email addresses

To subscribe, post/fax this subscription form to:

Bioshares
PO Box 193 Richmond VIC 3121
Fax: 61 3 9671 3633

I enclose a cheque for \$ _____ made payable to **Blake Industry & Market Analysis Pty Ltd**, or

Please charge my credit card \$ _____ MasterCard Visa

Card Number

Signature _____ Expiry date _____

Subscriber details

Name _____

Organisation _____

Ph () _____

Emails _____
