

20 February 2008

## Asterand

Year End	Revenue (£m)	PBT* (£m)	EPS* (p)	DPS (p)	PE (x)	Yield (%)
12/06	7.4	(1.9)	(1.7)	0.0	N/A	N/A
12/07e	7.8	(1.5)	(1.5)	0.0	N/A	N/A
12/08e	10.6	0.2	0.2	0.0	26.3	N/A
12/09e	12.3	0.8	0.7	0.0	7.5	N/A

Note: \*PBT and EPS are normalised, excluding goodwill amortisation and exceptional items

### Investment summary: Body of knowledge

As the biggest commercial supplier of ethically sourced and fully consented human tissue and related services, Asterand is well placed to offer its customers access to a broad tissue procurement network and adapt to regulatory changes in this area. Its investment case relies on it becoming profitable quickly on the back of a recent restructuring, before expanding its share of a fragmented but fast-growing market.

### Repositioning for growth

Management has been overhauled, and the new team has restructured the company and cut its cost base, aiming to make it cashflow positive – we are forecasting a maiden net profit for 2008. Once the company has been repositioned, further growth could come through acquisitions within the fragmented tissue supply sector.

### High-profile client list

Asterand's clients have included all of the top 30 big pharma firms, which remain the largest contributor to revenues and a key driver of growth. BTG has paid £250k after a migraine project licensed from Asterand entered Phase I, and is due to pay milestone fees, not factored into our model, if the project is successfully developed.

### Added visibility through AFIP award

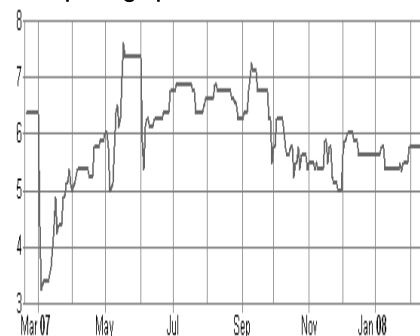
In September 2007 Asterand won a prestigious \$2.8m contract to assess the US Armed Forces Institute of Pathology's vast repository of human tissue samples. Asterand's proposal was chosen by the US Department of Defense in preference to a number of larger companies, and has increased its visibility.

### Valuation: Conservative estimate of £20m

A conservative DCF valuation gives a value of around £20m, indicating almost fourfold upside, although a much higher figure could be justified if the business turnaround yields a higher growth rate, and/or if there are further milestone payments from BTG, IP licensing and more contracts of the type signed with the AFIP.

Price 5.25p  
Market Cap £6m

#### Share price graph



#### Share details

Code ATD  
Listing Full  
Sector Pharmaceuticals & biotechnology  
Shares in issue 110m

#### Price

52-week High 7.94p Low 3.23p

#### Balance Sheet as at 30 June 2007

Debt/Equity (%) N/A  
NAV per share (p) 7.5  
Net cash (£m) 3.6

#### Business

Asterand supplies human tissue and tissue-related products as well as tissue testing-based services to R&D companies, many of them big pharmas. It was formed in January 2006 through the reverse takeover of Pharmagene of the UK by the private US firm Asterand.

#### Valuation

	2006	2007e	2008e
P/E relative	N/A	N/A	268
P/CF	N/A	N/A	N/A
EV/Sales	0.1	0.5	0.4
ROE	N/A	N/A	N/A

#### Geography based on revenues

UK	Europe	US	Other
9%	8%	80%	3%

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*Asterand is a research client of Edison Investment Research Limited*

## Investment summary: Body of knowledge

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### Company description: Human tissue and services supplier

Asterand is the biggest commercial supplier of human tissue and related services for use in pharmaceutical research, offering its customers access to a broad tissue procurement network that has been built up through contacts established over several years. Its investment case relies on it becoming profitable quickly on the back of a restructuring implemented by the new management team, before growing its market share and turning to possible acquisitions. The current market is highly fragmented but growing fast, fuelled by big pharma's drive to cut drug development times and increase R&D productivity, as well as a growing focus on biomarkers.

### Valuation

We have calculated the terminal value of the business, and added the net present value of this to the present value of discounted cash flows for earlier years. Until profitability is achieved we feel that a value in the region of £20m is appropriate for Asterand, indicating almost fourfold upside from the present share price, although a higher figure could be justified if the business turnaround yields a higher growth rate, and/or if there are further milestone payments from BTG, additional licensing out of IP and additional contracts of the type signed with the AFIP.

### Sensitivities

- A repeat of the tissue supply ban in Russia is a possibility, both in Russia and other countries. Nevertheless, Asterand is working to broaden its procurement network.
- Turnaround at the UK service business will be a key test of new management's performance and the viability of Asterand's business model. Failure to turn a net profit in 2008 could result in a requirement to raise additional funds.
- Asterand's revenue growth strategy depends on increased take-up from big pharma. Failure to sign broad, i.e. company-wide, alliances with big pharma could stifle growth.
- Sale of remaining Pharmagene intellectual property could provide further upside, and payments under further non-core IP licensing deals are not factored into our financial model. Future milestones from BTG under the migraine project offer potential upside.
- Further takeover approaches could provide investors with an exit if the company remains undervalued, but resisting opportunistic bids could become a major distraction for management and a drain on finances.

### Financials

A key element of Asterand's expectations and our forecasts, which show no additional funding requirement, is the achievement of full-year net profitability in 2008. We expect tissue supply to have contributed around £5.5m and discovery services over £1.5m in 2007, with the remainder accounted for by the first tranche of the AFIP payment and a £250k milestone from BTG. In 2008 Edison estimates services revenue of £2.7m, based on the c. £1.5m of orders already on the division's books. The restructuring is expected to save £700k a year in the UK business, although 2007 will see exceptional charges of around £450k to account for redundancies, bid-related professional fees and a CEO search.

## Company description: Human tissue/services supplier

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**As a specialist provider of human tissue samples and associated services, Asterand offers customer companies years of expertise in this highly fragmented market, having the advantage of a large tissue biobank and extensive tissue procurement network. The investment case rests on its ability to become profitable quickly with first-mover advantage in the growing tissue supply market and enlarge the scope of alliances with big pharma, expanding collaborations with academia and governmental organisations and turning to strategic acquisitions of related companies.**

Asterand is operationally headquartered in Detroit, Michigan, and it is from here that its profitable tissue sample supply business operates, employing around 50 staff. Meanwhile, in Royston, UK, some 35 employees focus on the CRO/service side of the business, carrying out studies for client companies (see Exhibit 1). The UK business has been loss-making, and the aim of its restructuring was to cut costs and make it profitable. Asterand's clients have included all of the world's top-30 big pharma firms and these remain the largest contributor to revenues, but the business also provides samples and services to academia. Asterand has master service agreements with certain big pharma firms, some involving minimum payments and first refusal rights, although for others ordering tends to be done by individual departments on an as-needed basis. Typically, customers want to carry out target or lead identification in drug research or to test early drug candidates on tissues, with this market being driven by the need to cut drug development times. Asterand can provide either the relevant sample (with associated clinical data) or carry out the testing itself as a CRO. Asterand has broad reach and extensive contacts in tissue supply, increasing its ability to meet the ever more exacting customer needs as to ethnic background, tissue quality and ethical control. Competitors lack scale, while in-house tissue sourcing by pharma companies is inefficient.

### First profitability, then growth

Asterand's key strength is the global network of hospitals it has established that enables it to procure a wide range of diseased human tissue samples; contacts with key physicians have taken years to establish, many involving long and delicate discussions, given that they involve the supply of surgical and/or post-mortem tissue. Many of its competitors are smaller and have biobanks that lack the scale of Asterand's, which currently has access to over 200,000 samples and associated clinical and pathology data, enabling it to respond quickly to a request for a particular tissue type. If the tissue type is particularly rare and not contained in the biobank, the breadth of Asterand's network gives it a good chance of locating and procuring it on demand.

The company's growth and ability to turn a profit depend on reducing its cost base in the UK, which it has already done, and signing broad deals with big pharma firms. The current management team has restructured the business and aims to achieve maiden net profitability for the 2008 full year. Once the company has been repositioned, growth could come through acquisitions in the currently fragmented tissue supply sector, and deals similar to that recently signed with the AFIP (see p 7). Licensing out legacy IP assets offers possible upside, and this is not factored into our financial model. In the longer term non-exclusive licences to data-mine Asterand's biobank databases could add value beyond the current product and service business model.

**Exhibit 1: Asterand's business offering**

<b>"Product"</b>	<b>Description</b>	<b>Business unit</b>	<b>Location</b>
XpressBANK	Biobank of over 200,000 tissue samples and associated clinical & pathology data. Available fixed (in paraffin blocks) or flash frozen in nitrogen; or as Quad Sets (matched pairs of diseased and adjacent normal tissue; see below). Blood, sputum and tissue derivatives (RNA, DNA, cell lines etc) also available.	Tissue products	Detroit, Michigan
ProCURE	An on-demand service for clients wanting samples not currently in Asterand's biobank. Asterand effectively uses its network to procure the desired tissue.	Tissue products	Detroit, Michigan
Target validation	CRO service comprising gene expression and gene & protein localisation work focusing on identifying where targets are expressed in tissue/disease types.	PhaseZERO service	Royston, UK
Compound profiling	CRO service dealing with work on live tissues/live cells. Involves investigating drug candidates' pharmacology, looking at mechanical responses in whole tissue preparations or biochemical responses in isolated cells or fractions.	PhaseZERO service	Royston, UK
ADMET	CRO work on drug metabolism, absorption and interaction, <i>in vitro</i> toxicity and safety pharmacology.	PhaseZERO service	Royston, UK

Source: Company presentation; Edison Investment Research

In 2002 the US National Cancer Institute recognised that access to appropriately collected and annotated tissue was a major barrier to developing new cancer treatments, estimating that over 300m tissue specimens were stored in the US under different protocols and varying conditions.

The provision of Quad Sets – generated from a diseased (typically tumour) and surrounding healthy tissues – is a major element of Asterand's business offering. The diseased/normal pair is dissected using a standard procedure known as mirrored inference; one half is fixed in formaldehyde and embedded in a paraffin block, while the other is snap-frozen in liquid nitrogen. Thus there are four separate parts to the sample, hence the term Quad Set. Because the faces of each piece are mirror images of each other, information gleaned from the paraffin block, where tissue morphology is well preserved, can be inferred onto the nitrogen-frozen sample, where it is not. Each frozen sample and corresponding paraffin block is evaluated to confirm that the collection protocol was followed and the samples remain mirrored, and the RNA quality in all frozen samples is analysed. Certified pathologists review specimens to confirm diagnosis. RNA should be preserved intact in nitrogen-frozen samples, enabling e.g. the isolation of RNA for clients.

## Growing potential of PhaseZERO

PhaseZERO studies aim to fill the gap between preclinical (i.e. animal) trials and Phase I (i.e. human volunteer) studies. While animal studies generally give a reasonable indication of a drug candidate's tolerability, often this is only a guide to the human response, there is a risk that unexpected toxicity can arise – as happened in the infamous study of Tegenero's TGN1412 – and it is difficult to determine the dose of a first-in-class drug at Phase I. Human tissue can bridge the gap between preclinical and Phase I testing, improving productivity and potentially speeding up development of new drugs. PhaseZERO comprises a range of technologies based on human isolated tissues that can be used in drug discovery and development, e.g. identification of distribution, regulation and function of drug targets at tissue and cellular level, and information on compound action and metabolism. PhaseZERO comprises many established assays, and offers a way of helping drug discovery and development scientists provide a human perspective to their programmes. Key business drivers here are an increase in pharma outsourcing, pressure on R&D timelines (i.e. fail early, fail cheaply) and the growing importance of biomarkers as predictors of treatment response. Asterand's human tissue supply network, with broad access to surgical and postmortem samples, enables reliable and timely provision of the desired service.

## The current business

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The current Asterand was formed in January 2006 through the reversal of Asterand Inc, a private US business, into the London-listed Pharmagene. The rationale was to form a leading company with expertise in human tissue supply on the one hand and human tissue-based research services on the other. Both businesses were loss-making, and the main goal of the transaction – still key with investors today – was to enable the combined company to reach sustainable profitability.

### Asterand Inc

This company was set up in 2000 in Detroit, Michigan, as a collector and supplier of human tissue samples to industry and academia. Its key strengths were an international network of hospitals from which tissue samples were procured (either to restock its inventory or to fulfil orders for particularly rare tissue types) and a biorepository of collected samples from which ordered samples in a number of formats could quickly be despatched to clients.

### Pharmagene

Pharmagene was founded in the UK in 1995 and floated on the London stock exchange in 2000, operating a dual business model. It ran a service business, conducting contract research on human tissue for pharma companies, as well as having an R&D operation of its own. The latter was developing early-stage drug candidates in respiratory disorders, migraine, preterm labour and psoriasis, but was hit in 2004 by the failure of its lead project in a Phase II cystic fibrosis study. It subsequently abandoned drug development and put its IP assets up for sale; one of these, a series of EP<sub>4</sub> antagonist, has been licensed to BTG for migraine, and Asterand has received milestones of £500k in 2006 and £250k in 2007 (on the start of Phase I studies). The other IP assets comprise 5HT<sub>2b</sub> antagonists (irritable bowel syndrome), EP<sub>2</sub> agonists (myometrial disorders/glaucoma) and an early-stage cancer project. An undisclosed company has an option to license this remaining IP.

### New management team

The combined Asterand/Pharmagene was relatively well financed with a narrowed focus and a bigger presence in tissue supply/research, but it continued to struggle with costs, especially in the UK, and its share price declined. Randal Charlton, Asterand Inc's CEO, announced that he would retire and the combined firm's finance chief, Ronald Openshaw, resigned in March 2007. Shortly afterwards, Martyn Coombs (an experienced senior general manager, most recently at Amersham) was appointed CEO and John Stchur CFO, and over half the senior management team, including the US general manager and VP of sales and marketing, was replaced.

### Russia tissue supply ban

In June 2007 Asterand was hit by the surprise decision by the Russian Federal Customs Service to impose a ban on the export from the country of human biological materials, citing possible use of the materials for bioterrorism. Russia was and still is the single largest source of human tissue by volume in Asterand's procurement network, and as a result of the ban some shipments out of Russia were temporarily delayed. Although the ban was lifted two months later it affected Asterand's full-year sales and profits, and illustrated the potential risk of a similar future situation

arising either in Russia or any other relatively unstable country that plays a significant part in tissue procurement. Asterand has begun work to diversify and expand its presence in the Ukraine, Poland, Egypt, South America and the US. It hopes that such moves will reduce its dependence on any one country and mitigate the above risk.

## Restructuring under new management

To enable Asterand to turn a profit against the backdrop of the tissue supply problem, the new management team implemented a restructuring plan aimed at generating positive cashflow as soon as possible. This targeted four areas in particular:

- **Loss-making UK business:** costs here had to be reduced, staff numbers were cut to a more realistic level and one of two buildings was closed, leaving a core laboratory. Since October 2007 there has been a sharp increase in the number and overall value of service projects signed.
- **Tissue procurement:** both to increase the number of countries from which human tissue is sourced to reduce dependence on any one particular market (to reduce exposure to the sort of situation that arose in Russia), and to diversify the genetic background of the samples, in order to enable a wider range of tissue to be available on hand.
- **Tissue supply:** to make the supply chain leaner and reduce turnaround time at Detroit facility to enable material that comes in to be processed and sold as quickly as possible, using a “lean six sigma” business review. The turnaround time has already been cut from 75 days to 30 days, and the goal is to reach 7 days.
- **Sales and marketing:** improve integration of US and European sales teams and increase cross-selling of products and services. The worst-performing reps have been replaced and a sales & marketing director hired.

Having cut inefficiencies and reduced the cost base, especially in the UK, achieving net profitability remains a major near-term focus, and the new management team believes that Asterand can turn a maiden net profit for 2008. Given that Asterand’s share price has continued to come under pressure in the general adverse market environment for healthcare-related stocks, the possibility of further takeover attempts and the associated expense, distraction and time constraints these put on management remain a key sensitivity for Asterand in the near term. Nevertheless, the company should expect a share price uplift if management can quickly achieve positive cashflow, positioning it to focus on business expansion through scale-up and possible M&A.

## Private takeover attempt

In May 2007, Asterand received a takeover approach from a consortium of its investors comprising Oxford Biosciences, Chrysalis Ventures and Fort Washington Private Equity; together, these represented 42% of Asterand’s issued share capital. The initial approach at 7.75p per share was rejected, but the consortium conducted due diligence and increased its bid to a level that management potentially found acceptable; however, it then became apparent that the consortium was unable to make a proposal that would lead to an offer, and after being issued with an ultimatum under the UK takeover code it agreed to withdraw from bidding for six months. This six-month period is due to expire at the end of March 2008.

## AFIP contract

A new development for Asterand's business occurred in September 2007, when the US Armed Forces Institute of Pathology (AFIP) awarded the company \$2.8m to assess its vast repository of human tissue samples. Asterand's proposal was chosen by the US Department of Defense in preference to a number of larger companies.

The repository contains some 24m preserved tissue samples, 43.5m microscopic slides and 9m wet tissue samples, and is believed to be the largest biorepository in the world. Under the one-year project Asterand will assess the condition and value of the tissue repository database and samples, evaluating data integrity, retrievability of samples and suitability for research. The award follows the AFIP's decision to investigate using the repository for medical research and education, and could signify a shift in how biorepositories' value is viewed. The total AFIP holdings comprise civilian and military reference case samples dating back to 1917.

The current contract concerns only the characterisation of the biorepository, and Asterand is to make recommendations about its future use, taking into account its potential in educational academic research and commercial use. The company will also suggest what steps should be taken to make the repository ready for any such applications. The award of such a prestigious contract could lead to other organisations also considering Asterand to conduct similar work on their tissue repositories.

## Ethical tissue procurement and supply

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**It has taken Asterand several years to build up an ethical tissue procurement network, and this fact serves as a key barrier to new competitor entry. The network is being expanded, and currently consists of 40 active donor sites (around 30 of which are outside the US), comprising academic, commercial and non-profit entities. Each donor site requires the approval of an institutional review board – similar to an ethics committee overseeing a clinical study.**

## Regulatory environment and informed consent

Asterand's knowledge of and compliance with the regulatory environment for tissue collection and supply gives it a possible headstart should the rules be made more stringent; this is another key advantage versus potential new competitors. Asterand was one of the first companies to fall under the auspices of the UK's Human Tissue Authority, a non-departmental public body brought into existence by the 2004 Human Tissue Act. The Act makes **informed consent** the fundamental principle underpinning the lawful storage and use of body parts, organs and tissue from the living or the deceased for specified health-related purposes. It also covers the removal of such material from the deceased, and lists the purposes for which consent is required.

In the US, meanwhile, no such legislation exists and biorepositories instead operate under the National Cancer Institute's guidelines on Best Practices for Biospecimen Resource Management. A tightening of the rules governing the US is possible, although it is thought to be more likely to come from regulators (e.g. the FDA has already issued guidance on biospecimens as they relate to new drug submissions) rather than Congress.

## Ethical tissue donation

Typically, Asterand representatives approach leading physicians and request that patients donate e.g. excess tissue removed during surgery. Once the physician's hospital(s) agrees to the scheme, consent will be sought from prospective patients. No human tissue can be "owned" as it is not classified as "goods"; it must instead be donated, and patients are not paid (to do so would be considered unethical). Standard agreements with donor sites stress donation, and physicians are reimbursed only for the time and materials they provide in procuring samples. As well as giving informed consent, patients have to waive any future rights to resulting IP that might be generated.

Discussions between Asterand and physicians and between physicians and patients are of a sensitive nature, and the trust and understanding built up over the years between the company and physicians/donor sites is a key strength. Samples received by Asterand in this way can be either postmortem or from surgical excision, and will be handled at the company's laboratories according to the specific customer need – e.g. fixed, frozen or used in contract research. Asterand also has opportunities to acquire existing biorepositories from hospitals. Hospitals routinely keep patients' tissue samples fixed in paraffin for disease diagnosis and/or follow-up, but it is standard practice to destroy these samples after 10 years.

A client company wanting a particular sample will normally ask Asterand to conduct a search of its bioinventory. This is done via a database in which each sample is categorised by disease type/subtype/stage, patient age, quality of RNA contained and related data, with details of relevant hits provided to the client. Each sample with associated clinical data is priced individually according to its particular characteristics. A key aspect here is that it should be impossible to trace the sample back to the patient who donated it. For this purpose, samples are blinded twice – first by the donor site and then by Asterand after preparation and before entering onto the database. Customers agree under a standard contract not to use the samples for e.g. biologicals manufacture. Asterand has master service agreements with certain big pharma firms, some involving minimum payments and first refusal rights.

## Competitive environment

Asterand is the biggest and one of the few publicly listed companies offering human tissue samples and related services, and claims to be the largest and best known commercial operator in this fragmented niche. Cytomyx, a human tissue supplier with a focus on discovery and validation of biomarkers, is listed on Aim, but hit financial difficulties and had its shares suspended from trading after failing to publish audited accounts for the year ended 31 March 2007.

Many pharma companies procure tissue samples for research through collaborations with academic institutions – a relatively inefficient process that lacks the breadth of Asterand's offering but is nevertheless thought to account for 75% of the tissue supply market; most of Asterand's direct competitors are small, private businesses. The only firm that offers both tissues and services appears to be the German company Indivumed. Small, US tissue suppliers include Cureline, which is planning an online shop, and Integrated Laboratory Systems. CROs whose business includes human tissue research include Biopta (UK), PelviPharm (France) and LifeSpan Biosciences (US).

## Sensitivities

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Much of Asterand's future potential depends on it becoming profitable, reducing exposure to a potential future shutdown of one or more of its channels of tissue procurement and being able to grow its business with current client companies. The sensitivities to the assumptions made in this report – both on the upside and the downside – can be summarised as follows:

- **Regulatory issues in eastern markets:** a future repeat of the tissue supply ban in Russia is a possibility, both in Russia and other relatively unstable countries. Nevertheless, Asterand is working to broaden and diversify its procurement network.
- **Turnaround at UK service business:** this will be a key indicator of new management's performance. Failure to turn a net profit in 2008 could result in a requirement to raise additional funds. An ability to turn a profit in the short term and to sustain profitability will be key to demonstrating the viability of Asterand's business model.
- **Ability to broaden customer base:** Asterand's revenue growth strategy depends on increased take-up and acceptance from big pharma. Failure to sign broad, i.e. company-wide alliances with big pharma could stifle growth.
- **Sale of remaining Pharmagene intellectual property:** this could provide further upside and potential payments under any further licensing deals for Asterand's non-core IP are not factored into current financial model. Similarly, future milestone fees for the rights licensed to BTG for the migraine project offer potential upside. The assets still to be licensed comprise 5HT<sub>2b</sub> antagonists with potential in irritable bowel syndrome, EP<sub>2</sub> agonists for myometrial disorders and glaucoma, and an early-stage cancer project. An undisclosed company has an option to license these remaining assets.
- **Further takeover approaches:** while this could provide investors with an exit if the company remains undervalued, resisting opportunistic bids could become a major distraction for management and a drain on finances. The investor group involved in the previous approach could make another attempt as of the end of March 2008 – i.e. once six months have elapsed since their first bid attempt failed.
- **Current client company anonymity:** if Asterand can persuade more of its clients to be identified this could act as a strong driver of new business.

## Valuation

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Although it can easily be seen that Asterand presently trades below its net present value it is difficult to put a precise value on it, given the lack of listed companies operating in the same business against which it can be compared.

Asterand's near-term growth depends largely on keeping a close eye on costs and increasing the number and breadth of contracts it signs with big pharma. The opportunity is considerable, given the fragmented nature of outsourced tissue supply at present; the total market is thought to be growing at over 20% a year, but in-house company procurement accounts for three quarters of the total. Asterand believes it currently holds only 3% of the market for outsourced tissue supply.

To value the company we have constructed a discounted cashflow model based on financial forecasts taken out to 2013 which assume that Asterand's revenues grow at a conservative 17% a year on average, and margins essentially remain at the level expected in 2008. We have then calculated the terminal value of the business, assuming that by 2013 it has reached steady state (free cash flow of £1.2m), and added this to the present value of the discounted cash flows for earlier years. There are a number of variables in this assumption – most significantly the growth of the business at steady state and the discount rate used (illustrated in Exhibit 2).

#### **Exhibit 2: Asterand valuation matrix**

Note: Assumes terminal growth is reached in 2013; \*weighted average cost of capital.

WACC*	10%	12.5%	15%
Terminal growth rate			
3%	£20.0m	£15.3m	£12.4m
5%	£27.3m	£18.9m	£14.6m
7%	£44.3m	£25.3m	£18.0m

Source: Edison Investment Research

Until profitability is achieved we feel that a value in the range of £20m is appropriate for Asterand, indicating almost fourfold upside from the present share price. Although a 12% WACC is usually used for companies in Edison's healthcare universe, we feel that 10% might be more appropriate given that Asterand can be considered to operate a lower-risk business than R&D pharma/biotech firms and the fact that it has no fund raising requirement on the current assumptions. If management can reposition the company and make it profitable there is considerable upside in the value of the business; our valuation model excludes the impact of further milestone payments from BTG, additional licensing out of IP and additional contracts of the type signed with the AFIP.

## **Financials**

Asterand is due to report full-year 2007 results in April 2008. We expect tissue supply to have contributed around £5.5m and discovery services over £1.5m, with the remainder accounted for by the first tranche of the AFIP payment and the £250k milestone from BTG. The balance of the AFIP fee will be received in 2008, and this year we expect services revenue to amount to £2.7m, which appears realistic given that it already has some £1.5m of orders on its books.

The restructuring is expected to save £700k a year in the UK business, although 2007 will see exceptional charges of around £450k to account for redundancies, bid-related professional fees and the CEO search. A key element of our forecasts, which show no additional funding requirement, is the achievement of positive cash flow from Q2 2008 onwards.

In 2007 Asterand adopted a new accounting policy to value its inventory of biological materials, under which costs incurred for tissue acquisition are capitalised as an asset and then written off over three years as the likelihood of the sample being sold diminishes, down to a nominal value of \$50 per sample. For the purposes of financial modelling we have assumed that the balance sheet value of this inventory remains at around £3.5m.

Our figures for 2005 comprise a pro forma combination of Pharmagene and the private Asterand Inc, while forecasts exclude potential revenue under future IP licensing deals.

**Exhibit 3: Asterand financial forecasts**

Note: In 2005 Asterand Inc and Pharmagene existed as separate entities, and their figures have been combined below. 2006 cash flow shows merger and Pharmagene cash under financing.

Year ending Dec 31	£'000s	2005 (combined)	2006 IFRS	2007e IFRS	2008e IFRS	2009e IFRS
<b>PROFIT &amp; LOSS</b>						
<b>Revenue</b>		<b>5,484</b>	<b>7,356</b>	<b>7,806</b>	<b>10,577</b>	<b>12,300</b>
Cost of sales		(3,480)	(3,731)	(4,500)	(6,007)	(6,900)
Gross profit		2,004	3,625	3,306	4,570	5,400
<b>EBITDA</b>		<b>(6,787)</b>	<b>(1,577)</b>	<b>(1,278)</b>	<b>446</b>	<b>982</b>
<b>Operating profit (before GW and except.)</b>		<b>(7,331)</b>	<b>(2,122)</b>	<b>(1,668)</b>	<b>146</b>	<b>732</b>
Goodwill amortisation		0	0	(14)	0	0
Exceptionals		(2,369)	(463)	(450)	0	0
Other		0	0	0	0	0
<b>Operating profit</b>		<b>(9,700)</b>	<b>(2,585)</b>	<b>(2,132)</b>	<b>146</b>	<b>732</b>
Net interest		536	225	150	65	100
<b>Profit before tax (norm)</b>		<b>(6,795)</b>	<b>(1,897)</b>	<b>(1,518)</b>	<b>211</b>	<b>832</b>
<b>Profit before tax (FRS 3)</b>		<b>(9,164)</b>	<b>(2,360)</b>	<b>(1,982)</b>	<b>211</b>	<b>832</b>
Tax		401	187	(60)	(15)	(25)
<b>Profit after tax (norm)</b>		<b>(6,394)</b>	<b>(1,710)</b>	<b>(1,578)</b>	<b>196</b>	<b>807</b>
<b>Profit after tax (FRS3)</b>		<b>(8,763)</b>	<b>(2,173)</b>	<b>(2,042)</b>	<b>196</b>	<b>807</b>
Average number of shares outstanding (m)		N/A	99.4	105.9	110.0	110.0
EPS - normalised (p)		N/A	(1.7)	(1.5)	0.2	0.7
EPS - FRS 3 (p)		N/A	(2.2)	(1.9)	0.2	0.7
Gross margin (%)		36.5%	49.3%	42.4%	43.2%	43.9%
EBITDA margin (%)		(123.8%)	(21.4%)	(16.4%)	4.2%	8.0%
Operating margin (before GW and except.) (%)		(133.7%)	(28.8%)	(21.4%)	1.4%	5.9%
<b>BALANCE SHEET</b>						
<b>Fixed assets</b>		<b>1,182</b>	<b>1,321</b>	<b>1,134</b>	<b>1,101</b>	<b>1,101</b>
Intangible assets		0	611	673	612	612
Tangible assets		1,182	710	461	489	489
Investment in associates		0	0	0	0	0
Unquoted investments		0	0	0	0	0
<b>Current assets</b>		<b>7,650</b>	<b>10,961</b>	<b>8,224</b>	<b>7,626</b>	<b>8,581</b>
Stocks		2,777	3,319	3,434	3,500	3,550
Debtors		4,025	2,734	2,500	2,200	2,190
Cash		848	4,908	2,290	1,926	2,841
Other		0	0	0	0	0
<b>Current liabilities</b>		<b>(6,009)</b>	<b>(3,500)</b>	<b>(2,407)</b>	<b>(1,700)</b>	<b>(1,849)</b>
Creditors		(1,726)	(661)	(570)	(300)	(349)
Other creditors		(4,283)	(2,682)	(1,800)	(1,400)	(1,500)
Short-term borrowings		0	(157)	(37)	0	0
Minority interests		0	0	0	0	0
<b>Long-term liabilities</b>		<b>(224)</b>	<b>(35)</b>	<b>0</b>	<b>0</b>	<b>0</b>
Long-term borrowings		(213)	(34)	0	0	0
Other long-term liabilities		(11)	(1)	0	0	0
<b>Net assets</b>		<b>2,599</b>	<b>8,747</b>	<b>6,951</b>	<b>7,027</b>	<b>7,834</b>
<b>CASH FLOW</b>						
<b>Operating cash flow</b>		<b>(10,448)</b>	<b>(4,890)</b>	<b>(2,716)</b>	<b>(27)</b>	<b>1,090</b>
Net interest		658	225	150	65	100
Tax		599	95	526	(15)	(25)
Capex		(424)	(112)	(50)	(350)	(250)
Acquisitions/disposals		0	387	(65)	0	0
Financing		2,154	8,878	26	0	0
Dividends		0	0	0	0	0
Other		0	(523)	(335)	0	0
Net cash flow		(7,461)	4,060	(2,464)	(327)	915
<b>Opening net debt/(cash)</b>		<b>(16,561)</b>	<b>(635)</b>	<b>(4,717)</b>	<b>(2,253)</b>	<b>(1,926)</b>
HP finance leases initiated		0	0	0	0	0
Other		(8,465)	22	0	0	0
<b>Closing net debt/(cash)</b>		<b>(635)</b>	<b>(4,717)</b>	<b>(2,253)</b>	<b>(1,926)</b>	<b>(2,841)</b>

Source: Company accounts/Edison Investment Research

Growth	Profitability	Balance sheet strength	Sensitivities evaluation	
		N/A	Litigation/regulatory	●
			Pensions	○
			Currency	○
			Stock overhang	◐
			Interest rates	○
			Oil/commodity prices	○

Growth metrics	%	Profitability metrics	%	Balance sheet metrics	Company details	
EPS CAGR 05-09e	N/A	ROCE 08e	2.8	Gearing 08e	N/A	Address:
EPS CAGR 07-09e	N/A	Avg ROCE 05-09e	N/A	Interest cover 08e	N/A	2 Orchard Rd, Royston, Herts SG8 5HD, UK
EBITDA CAGR 05-09e	N/A	ROE 08e	2.8	CA/CL 08e	4.5	Phone (01763) 211 600
EBITDA CAGR 07-09e	N/A	Gross margin 08e	43.2	Stock turn 08e	121	Fax (01763) 211 555
Sales CAGR 05-09e	22.4	Operating margin 08e	1.4	Debtor days 08e	65.0	www.asterand.com
Sales CAGR 07-09e	25.5	Gr mgn / Op mgn 08e	N/A	Creditor days 08e	10.4	

Principal shareholders	%	Management team
Oxford Bioscience Partners	24	<b>CEO: Martyn Coombs</b>
Chrysalis Ventures	12	Appointed CEO in March 2007, having previously spent nine years in various senior roles at Amersham. Was president of Amersham KK and executive vice-president of Nihon Medi-Physics, a joint venture with Sumitomo Chemical. He has also served as president of PerkinElmer's Japanese subsidiary.
Aberforth Partners	9	
Omega Advisors	7	
Fort Washington Private Equity Investors	6	
Arboretum Ventures	5	<b>CFO: John Stchur</b>
Hale Fund	4	Became chief financial officer and corporate secretary of the enlarged company in 2007, having joined Asterand Inc in 2002. Previously served as vice-president of finance at Big Net Holdings and was an auditor for Pricewaterhouse Coopers.
<b>Forthcoming announcements/catalysts</b>	<b>Date *</b>	<b>Chairman: David Lee</b>
Full-year results	4 Apr 2008	Was chairman of Pharmagene before its merger with Asterand Inc, having been a member of the Pharmagene board since April 2000. From 1995 to 1998 he was CEO of Acorn Group. He is currently chairman of Tadpole Technology and Teleunit and is senior non-executive director at Superscape Group.
<i>Note: * = estimated</i>		

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