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Companies covered: LBT, VTI, Quarterly  
Review

	Bioshares Portfolio
Year 1 (May '01 - May '02)	21.2%
Year 2 (May '02 - May '03)	-9.4%
Year 3 (May '03 - May '04)	70.6%
Year 4 (May '04 - May '05)	-16.3%
Year 5 (May '05 - May '06)	77.8%
Year 6 (May '06 - May '07)	17.4%
Year 7 (May '07 - May '08)	-36%
Year 8 (May '08 - May '09)	-7.4%
Year 9 (May '09 - May '10)	50.2%
Year 10 (May '10 - May '11)	45.4%
Year 11 (May '11 - May '12)	-18.0%
Year 12 (May '12 - May '13)	3.1%
Year 13 (May '13 - May '14)	26.6%
Year 14 (May '14 - May '15)	23.0%
Year 15 (May '15 - May '16)	33.0%
Year 16 (May '16 - current)	25.2%
<b>Cumulative Gain</b>	<b>822%</b>
<b>Av. Annual gain (14 yrs)</b>	<b>19.2%</b>

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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* –

## **LBT Innovations – APAS Independence Unveiled**

LBT Innovations (LBT: \$0.325) this week unveiled its second pathology automation instrument, called APAS Independence.

The working product will be showcased at a major clinical microbiology conference next month, ahead of a market launch towards the end of 2017.

APAS Independence delivers efficiencies in the culture plate analysis used by pathology businesses and hospitals to detect bacterial infections in patient samples.

The new LBT product can process 240 culture plates in one hour. It automates three of the 15 steps in culture plate processing. The company's first instrument, called Microstreak, automates another one of those steps, that being the automated streaking of the patient sample on an agar culture plate.

The APAS Independence will sell for around US\$300,000 said CEO Brent Barnes. The instrument has been developed under a joint venture with engineering group Hettich AG in Germany, with the JV called Clever Culture Systems.

The first device has been manufactured by engineering and design group Planet Innovation in Melbourne, which will continue to make the early products until manufacture is transferred to Hettich.

LBT will be responsible for building and updating the software and will be paid for that service. The profits from the JV will be shared equally. Currently, former LBT CEO Lusia Guthrie is chair of the JV and the general manager is Peter Bradley from LBT.

The JV will sell the instrument through distributors throughout the world in all regions except for Australia where the system will be sold direct. Australia will serve as an early testing market, where product release and early use can be closely monitored and supported.

### **Pre-launch Marketing**

The APAS Independence will be exhibited at the industrial microbiology event ECCMID next month in Vienna, which last year had over 12,000 delegates from 120 countries.

The APAS Independence will be the first automated culture plate analysis system on the market, and is likely to be around two years ahead of any competitors.

The instrument will also be marketed at the ASM Microbe meeting in New Orleans in June, which also has around 12,000 delegates attend.

*Cont'd over*

### Accuracy Requirements

At the showcase this week, senior microbiology scientist at St Vincent's Hospital in Melbourne, Lisa Brenton, discussed the need for automation in microbiology in the pathology industry.

Brenton's team not only handles the diagnostic pathology work at St Vincent's, but also for the Eye and Ear Hospital in Melbourne, for specialists and GPs, as well clinical trials groups such as Nucleus Network.

Brenton said that the market is demanding more and more from pathology groups due to an aging population living longer with chronic diseases and the emergence of antibiotic drug resistance.

Her pathology group is expected to be profitable, but also be able to increase its workload with less staff, in less time, maintain a high quality and reduce costs. Brenton said that bacteriology is not an area that has been well automated.

Brenton said that pathology groups would assess the accuracy of each instrument before converting from a manual process. Pathology groups are risk averse and St Vincent's would initially run the existing manual process in parallel with a new automated system such as the APAS Independence.

### 98% Sensitivity

In a US trial on 5,500 urine samples, the APAS Independence achieved over 98% sensitivity in detecting disease causing bacteria compared to around 96% sensitivity from manual processes by microbiologists.

Around half of pathology samples are to test for urine infections yet around 70% of these results are negative.

The APAS system allows negative result plates to be dismissed after capturing an image of each plate. Plates that record either a positive result or that require further investigation are grouped into five distinct columns.

In the company's FDA submission, it included results from over 10,000 samples where sensitivity of over 98% was recorded.

Another advantage with the APAS Independence system is that microscopy testing conducted 24 hours earlier with samples can be incorporated into the automated image reading system rather than the microbiologist manually referencing microscopy results for ambiguous samples, such as in patients that have been on antibiotic treatment.

Brenton concluded that by increasing automation in microbiology, it will free scientists to conduct more complex pathology work, absorb additional work, improve turnaround times, and improve sensitivity and sensitivity with patient sample testing.

LBT Innovations is capitalised at \$45 million. The company had \$5.3 million in cash at the end of December with an additional \$3.5 million raised in January (the second tranche associated with the \$7 million placement initiated in December).

*Bioshares* recommendation: **Speculative Buy Class A**

**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. For both groups, the rating “Take Profits” means that investors may re-weight their holding by selling between 25%-75% of a stock.

**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**

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