

**Editorial Notice**

From this edition, Mark Pachacz returns to an editorial role at Bioshares, as Analyst. He joins David Blake as Analyst, with both holding joint responsibility for stock recommendations.

Mark relinquished recommendations responsibility while he was engaged in a funds management role (now concluded), in order to preserve Bioshares' editorial independence and integrity.

David Blake and Mark Pachacz founded in Bioshares in 2000.

# Bioshares

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Edition 614

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

Extract from Bioshares –

## **ResApp Health – TeleMedicine Is On The Move**

The telemedicine market looks set to gain some serious traction, through the two largest pharmacy operators in the US, Walgreens and CVS Health. The timing is perfect for ResApp Health (RAP: \$0.016), which listed on the ASX (via a backdoor listing) last month.

ResApp is essentially developing a technology that can best be described as a digital stethoscope. It uses algorithms in a smart phone App to assess patients' coughs to allow remote diagnosis and management of respiratory conditions and diseases.

### **US Telemedicine Market**

According to a Goldman Sachs report released in June this year, telemedicine can potentially deliver healthcare savings to the US Government worth over US\$100 billion a year.

In December last year, Walgreens announced a collaboration with telemedicine provider MDLIVE, which connects Walgreens customers to MDLIVE doctors through its website in California and Michigan. Consultations cost US\$49. That collaboration was been extended to three other states, Colorado, Illinois and Washington, in June, with 25 states expected to be on board by the end of 2015. Walgreens is the largest pharmacy operator in the US with over 8,200 stores.

This week the second largest pharmacy chain in the US, CVS Health, announced it would partner with telemedicine provider Doctor On Demand. It is a similar co-marketing arrangement to Walgreens with MDLIVE. CVS Health has over 7,800 pharmacies, as well as around 1,000 walk-in medical clinics called MinuteClinic. These clinics provide health services from nurses and doctors' assistants who can write prescriptions for infections, treat minor wounds and provide vaccinations.

Doctor On Demand is a relative recent start-up, having formed three years ago. It raised US\$50 million in venture funding in June this year. The doctors' online services may eventually be provided in-store, with in-pharmacy telemedicine services currently being provided on the East Coast through a smaller pharmacy operator.

Doctor On Demand says the company has a waiting list of doctors offering to provide telemedicine services. For doctors, advantages of providing their services via the internet include shorter consultations, an ability to generate additional income, and the flexibility of working from home. CVS Health is also working with two other telemedicine companies, American Well and Teladoc.

Teladoc listed in the US last month raising US\$156 million. It is the leader in the telemedicine space in the US. With over 11.5 million members, it expects to provide more than 500,000 consultations this year through its group of over 1500 doctors and therapists. In the June quarter, the company generated revenue of US\$18.3 million (up 78% on pcp) and a loss of US\$16.3 million.

*Cont'd over*

**Companies covered: ACG, BLT, DVL, RAP**

	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 14 (May '15 - current)	5.9%
<b>Cumulative Gain</b>	<b>487%</b>
<b>Av. Annual gain (14 yrs)</b>	<b>17.0%</b>

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Doctor On Demand, which was founded by celebrity Dr Phil and his son, ranks second in the US telemedicine market.

#### US Telemedicine Providers

Provider	Price (\$US)	Rank
MDLIVE	\$49 per consult	#2
Teladoc	\$38 per consult plus \$150 annual fee	#1
American Well	\$50 per consult	
Doctor on Demand	\$40 per consult	
HealthTap	\$99 per month	
Live Health Online	\$49 per consult	
VirtuWell	\$40 per consult	
MeMD	\$50 per consult	
Interactive MD	\$40 per consult plus \$10 per month	

#### ResApp's Product

ResApp's mobile respiratory diagnostic technology originates from work conducted by researchers at the University of Queensland with studies funded by the Bill and Melinda Gates Foundation. The researchers were asked to diagnose asthma and pneumonia in a trial in 91 children in Indonesia using microphones placed alongside the children's beds. Using machine-learning algorithms, the researchers were able to differentiate between pneumonia and other conditions with a 96% accuracy, and between asthma and pneumonia with a 90% accuracy. ResApp CEO Tony Keating said that even using X-Rays, detection of pneumonia is only around 70%-80% accurate.

ResApp is currently conducting a trial in two hospitals in Perth to further assess its mobile respiratory diagnostic technology. The aim of the trial is to improve the algorithm for diagnosing pneumonia and asthma, as well as extending the technology to detecting other respiratory conditions.

Over 150 patients have been enrolled in the trial which started earlier this year. The company expects to have 400 patients enrolled by year's end with initial results on the first 250 patients next month. Keating said that unlike trials of new drug therapies, these trials are inexpensive and easy to conduct.

#### Target Customers Are Telemedicine Providers

ResApp plans to gain FDA approval for its App by the end of next year, at which point it will start offering the technology to telemedicine providers in the US.

In Australia last month, Telstra launched a telemedicine service through Swiss company Medgate, where medical treatment can be received online for \$75.90, although it is not reimbursed by Medicare.

#### Summary

Around 30% of doctors' consultations are for acute respiratory conditions. Therefore, ResApp's mobile respiratory diagnostic technology could be a highly valuable tool to doctors to help assess respiratory conditions over the Internet.

#### The Goldman Sachs Telemedicine Report

Goldman Sachs expects to see a major uptake in digital health in coming years, driven by smart phone access, miniaturization of medical sensors, escalating healthcare budgets in the US with a greater cost burden to be taken up by the consumer, and an evolution of clinical data that supports adoption of remote monitoring of patients.

In the US, healthcare expenditure growth has eclipsed growth in GDP for all but seven years between 1960-2010. Healthcare accounts for 18% of GDP, which is substantially greater than the 11% spent in Europe and double that spent in Japan. Yet even through it is a country known for its innovation, there is no real change in overall outcomes, with the US ranking towards the bottom of the industrialized world with respect to reduced incidence of chronic disease and better life expectancy. On one measure, the prevalence of obesity is expected to increase from 32% in 2012 to 42% by 2030.

Already insurers are supporting the provision of telemedicine services including Aetna, United Healthcare and Cigna which have partnered with telemedicine groups. Employers such as Pepsi and Bank of America are also supporting coverage of healthcare of its employees through telemedicine.

According to the Goldman Sachs report, chronic disease management is the main sector to benefit from digital health adoption. This includes heart disease, asthma, COPD and diabetes, which make up 20% of this category. It's also a category where treatment diagnosis and modification can deliver a demonstrated patient outcome.

The Goldman Sachs report suggests that over US\$300 billion a year could be saved in the US from the digital healthcare revolution. Each year there are 101 million doctor visits in the US. With one third of these relating to respiratory ailments, it places ResApp's 'digital stethoscope' as a very useful tool to play its part in the digital healthcare revolution.

ResApp has an early mover advantage for its product with no direct competitors at this point. Its timing is also ideal given the expected acceleration in the provision of digital healthcare services over the next decade. Last year US\$4.1 billion was invested in digital health in the US.

ResApp Health is capitalised at \$9 million and retained cash of \$4 million at September 30, 2015.

**Bioshares recommendation: Speculative Buy Class B**

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**

**Sell**

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