

Universal Biosensors Inc. (UBI)

Tn Antigen interim results positive; \$26m capital raise announced

Recommendation		Buy		Summary	
Risk Rating		High		<p>Universal Biosensors Inc. (UBI) is a specialist biosensors company focussed on the development, manufacture and commercialisation of a range of point-of-use devices for measuring different analytes across different industries. UBI's strategy is to build a multi-product stable of revenue generating biosensors in large markets which can be used on UBI's hand-held platform technology including Human health (coagulation, oncology), Animal health (diabetes), Food & Beverages (wine) and Environmental.</p> <p>Historically UBI has developed products for industry majors on a contract R&D basis plus milestones (blood glucose tests for LifeScan / J&J – 10bn tests sold; Coagulation tests for Siemens – 10m tests sold). UBI now plans to launch its own new products and break-through technology from new partners.</p> <p>Tn Antigen cancer biosensor - Interim Results</p> <p>UBI announced positive results from the first cohort of 60 patient blood samples tested using the UBI device and new 3-electrode test strips (16 colorectal and 44 prostate cancer patients). However the tests on 6 breast cancer samples were inconclusive due to the low sample size.</p> <p>UBI expects to receive results from 2 more cohorts (280 patients) in this half year: 120 from Victorian Cancer Biobank and 160 from CIC BioGUNE in Spain.</p> <p>Despite the small sample size (60), management describes these results as “extremely promising” and UBI will move on with commercialisation.</p> <p>\$26m Capital raising announced</p> <p>UBI also announced a \$20m non-renounceable rights issue at \$0.77 per share, fully underwritten by 16.1% shareholder Viburnum Funds, and a \$6m placement (not underwritten). Proforma cash will be \$38.3m (v \$13.0m at 31/3/22 and \$18.1m at 31/12/21).</p> <p>Funds raised will be applied to:</p> <ul style="list-style-type: none"> • Accelerate existing product development. • Scale up manufacturing and R&D capability (including \$10m for new 3-electrode equipment). • Working capital to support in-market growth. 	
24-mth Target Price (AUD)		\$1.34 (was \$1.83)			
Share Price (AUD)		\$0.76			
12-mth Price Range		\$0.58 - \$1.04			
Forecast 24-mth Capital Growth		76.3%			
Forecast 24-mth Dividend Yield		0.0%			
24-mth Total Shareholder Return		76.3%			
Market cap (\$m)		160.9 (post raise)			
Net debt (net cash) (\$m)(Mar 22)		(36.0)(post raise)			
Enterprise Value (\$m)		124.9 (post raise)			
Gearing (Net Debt/ Equity)		N/a – Net Cash			
Shares on Issue (m)		211.8 (post raise)			
Options / Perf rights on Issue (m)		20.2 (post raise)			
Sector		Healthcare			
Average Daily Value Traded (\$)		\$222,700			
ASX 300 Weight		n/a			
Financial Forecasts					
Years ending Dec \$m	21(A)	22(e)	23(e)	24(e)	25(e)
Sales revenue	5.8	13.1	27.9	42.2	58.7
Sales growth	80%	128%	112%	51%	39%
Cash operating costs	-18.5	-22.6	-26.2	-29.9	-36.3
EBITDA	-8.3	-6.6	1.5	12.1	22.3
NPAT (reported)	-10.5	-9.2	-1.8	8.5	18.3
NPAT (adjusted)	-10.5	-9.2	-1.8	8.5	18.3
EPS (adjusted)	-5.9	-4.3	-0.8	3.7	8.0
EPS growth	26%	nm	large	nm	115%
DPS	0.0	0.0	0.0	0.5	1.0
OCF / share	-5.6	-2.3	2.7	6.9	11.6
Valuation Metrics					
P/E	-12.9x	-17.8x	-98.1x	20.4x	9.5x
P / OCF	-13.6x	-33.5x	28.1x	11.0x	6.6x
EV / Sales	25.1x	10.3x	4.6x	2.7x	1.5x
EV / Ebitda	-17.6x	-20.5x	83.4x	9.4x	3.9x
Cash from Operations	-9.9	-4.9	6.2	15.7	26.4
Net Cash (Net Debt)	15.8	26.1	31.8	47.1	73.8
Enterprise Value	145.1	134.8	129.1	113.9	87.1

UBI SHARE PRICE PERFORMANCE



Forecasts & Recommendation

We lower our forecasts to allow for higher R&D and increased shares on issue. We may revise this after we see the March quarterly report due later this month. CY22 Net loss forecast -\$9.2m (was -\$8.1m); CY23 - \$1.8m (was +\$0.2m); CY24 +\$8.5m (was +\$9.2m).

Our revised valuation range is \$1.23 to \$1.45 (previously \$1.70 to \$1.95). We set our 24-month price target at the mid-point \$1.34 (was \$1.83, -27%). With a strong R&D and new product release schedule, numerous catalysts and 76% share price upside potential, we reiterate our Buy (High Risk) recommendation.

1. Changes in Forecasts

UBI: Changes in Estimates	CY21	CY22e			CY23e			CY24e		
Years ending Dec \$m		Old	New	Change	Old	New	Change	Old	New	Change
Operating revenue										
a. Sentia wine analyser	1.15	6.2	6.2	0%	15.3	15.3	0%	24.0	24.0	0%
b. Xprecia Stride / Prime (coagulation)	2.67	4.5	4.5	0%	6.5	6.5	0%	9.0	9.0	0%
c. New - Petrakr (Animal blood glucose)		0.0	0.0		3.0	3.0	0%	5.3	5.3	0%
Other					0.0	0.0		0.0	0.0	
Subtotal - Product sales	3.8	10.6	10.6	0%	24.8	24.8	0%	38.3	38.3	0%
d. HRL (lab testing services)	2.0	2.5	2.5	0%	3.1	3.1	0%	3.9	3.9	0%
Sales revenue	5.8	13.1	13.1	0%	27.9	27.9	0%	42.2	42.2	0%
Sales growth	80%	128%	128%		112%	112%		51%	51%	
Cost of sales	-3.7	-6.0	-6.0	0%	-11.4	-11.4	0%	-16.3	-16.3	0%
Gross profit	2.1	7.1	7.1	0%	16.5	16.5	0%	25.9	25.9	0%
Gross profit margin %	36.4%	54.3%	54.3%		59.3%	59.3%		61.4%	61.4%	
Other revenue (Govt grants etc)	4.6	3.1	3.1	0%	0.0	0.0	nm	0.0	0.0	nm
Product support & O/S logistics	-0.1	-0.1	-0.1	0%	-0.1	-0.1	0%	-0.1	-0.1	0%
SG&A costs	-5.5	-6.0	-6.0	0%	-6.4	-6.4	0%	-6.8	-6.8	0%
Research & Development	-9.3	-9.5	-10.5	11%	-7.3	-8.3	14%	-6.7	-6.7	0%
Share-based payments	-0.1	-0.2	-0.2	0%	-0.2	-0.2	0%	-0.2	-0.2	0%
Operating costs	-15.0	-15.8	-16.8	6%	-14.0	-15.0	7%	-13.8	-13.8	0%
Operating costs % of Sales	-259%	-120%	-128%	6%	-50%	-54%	7%	-33%	-33%	0%
Operating costs + COGS	-18.6	-21.8	-22.8	5%	-25.4	-26.4	4%	-30.1	-30.1	0%
R&D % of Revenue	-161%	-72%	-80%		-26%	-30%		-16%	-16%	
EBITDA	-8.3	-5.6	-6.6	18%	2.5	1.5	-39%	12.1	12.1	0%
Ebitda margin %	-142.9%	-42.5%	-50.1%	-8%	9.1%	5.5%	-4%	28.7%	28.7%	0%
Depn & Amortisation	-2.2	-2.4	-2.5	4%	-2.6	-3.2	23%	-2.9	-3.6	23%
EBIT	-10.4	-8.0	-9.1	14%	-0.1	-1.7	1868%	9.2	8.6	-7%
Ebit margin %	-180.6%	-60.7%	-69.1%	-8%	-0.3%	-6.1%	-6%	21.9%	20.3%	-2%
NPAT (reported)	-10.5	-8.1	-9.2	14%	-0.2	-1.8	1018%	9.2	8.5	-7%
NPAT (normalised)	-10.5	-8.1	-9.2	14%	-0.2	-1.8	1018%	9.2	8.5	-7%
NPAT margin %	-182%	-61%	-70%	-8%	-1%	-6%	-6%	22%	20%	-2%
EPS (normalised)	-5.9	-4.2	-4.3	3%	-0.1	-0.8	850%	4.7	3.7	-21%
DPS	0.0	0.0	0.0	n/a	0.0	0.0	n/a	0.5	0.5	n/a
Balance Sheet:										
Net cash (debt)	15.8	11.0	26.1	137.9%	17.1	31.8	86%	31.7	47.1	49%
Shares on issue (year-end)	177.8	177.8	211.8	19.1%	177.8	211.8	19%	177.8	211.8	19%
Composite valuation					\$ 1.70	\$ 1.23	-27.8%			

Source: Sequoia estimates

Forecasts:

We have made the following changes:

- Increased R&D expense by \$1.0m in CY22 and CY23 to allow for a more aggressive program on Tn Antigen, ICT (instant Covid Test) and Human Fertility (but no change to CY24). We note that UBI has a high degree of confidence on these programs.
- Increased depreciation charge by \$0.1m in CY22, \$0.6m in CY23 and \$0.7m in CY24 to allow for depreciation on \$2-3m of upgraded machines to handle 3-electrode strip manufacturing, and one new 3-electrode machine.
- We have increased CY22 capex from \$0.7m to \$10.0m to allow for the upgrade of 2 existing machines and the purchase and validation of 1 brand new machine.
- We have increased shares on issue for the \$20m rights issue and \$6m placement. We have assumed nothing for the top-up facility available to eligible existing shareholders.
- We have also increased our discount rate in our DCF valuation from 10.0% to 11.0%.

Composite Valuation:

Our blended valuation decreases by 28% from \$1.70 to \$1.23, due to the 19% increase in share count, our reduced profit forecasts, a higher discount rate in our DCF valuation, and reduced EV / Sales comparable company multiples.

2. Tn Antigen cancer biosensor – interim results

UBI has announced interim results received from the Peter MacCallum Cancer Centre cohort of 66 cancer patients, being the first of 3 cohorts. These subjects were supplemented by tests on 10 healthy subjects.

Results from Victorian Cancer Biobank (120 cancer patients) and CIC BioGUNE in Spain (160 patients) are expected later this half-year (i.e. in the next ~2.5 months).

UBI - Tn Antigen cancer biosensor - Development study update					
	Prostate Cancer	Colorectal Cancer	Breast Cancer	Total Patients	% of Total
Peter MacCallum Cancer Centre, Melbourne	44 √	16 √	6	66	19%
Results still to come later this half-year (1H22)					
Victorian Cancer Biobank	40	40	40	120	35%
CIC BioGUNE (Basurto University Hospital, Bilbao)	160			160	46%
Total patients expected	244	56	46	346	100%
% of total	71%	16%	13%	100%	

Source: UBI announcements

Background – UBI is developing a handheld portable Tn Antigen cancer biosensor using a “finger prick” blood test to accurately measure changes to a cancer patient’s tumor status (monitoring of remission and reoccurrence) delivering easier, cheaper, and more frequent tests. The Tn Antigen biosensor test could be used by oncologists and cancer patients in clinics, hospitals, GP clinics or at home.

Colorectal cancer

UBI says the results suggest that the Tn Antigen handheld biosensor is potentially more sensitive and more specific than the existing FDA approved “CEA” biomarker (Carcinoembryonic Antigen) used for monitoring colorectal cancer (sensitivity 55.2% and specificity 83.6%). Sales of the CEA biomarker are estimated in excess of \$3 billion pa (Global Market Insights). For colorectal cancer subjects, the results are as follows:

UBI - Tn Antigen cancer biosensor		
Colorectal cancer patients C (n=16) + H (n=10)	Sensitivity % (Strength of signal)	Specificity % (Accuracy of signal)
UBI 2-electrode	100.0%	60.0%
UBI 3-electrode	100.0%	90.0%
CEA biomarker (existing gold standard)	55.2%	83.6%

C = Cancer (48 samples tested); H = Healthy (30 samples tested). Each patient sample was tested 3 times.

Source: UBI announcement; Discussions with mgt.

Prostate cancer

For prostate cancer subjects, the results suggest that the Tn Antigen biosensor is potentially more sensitive and more specific than the existing FDA approved “PSA” biomarker (Prostate-Specific Antigen) used for monitoring prostate cancer (sensitivity 85.4% and specificity 30.3%). Sales of the PSA biomarker are estimated in excess of \$3 billion pa (Vantage Market Research). For prostate cancer subjects, the results are as follows:

UBI - Tn Antigen cancer biosensor		
Prostate cancer patients C (n=44) + H (n=10)	Sensitivity % (Strength of signal)	Specificity % (Accuracy of signal)
UBI 2-electrode	92.9%	60.0%
UBI 3-electrode	72.7%	90.0%
CEA biomarker (existing gold standard)	85.4%	30.3%

C = Cancer (132 samples tested); H = Healthy (30 samples tested). Each patient sample was tested 3 times.

Source: UBI announcement; Discussions with mgt.

Breast cancer

Due to the small sample size (n=6) of the Peter Mac breast cancer subjects the outcome was inconclusive with little differentiation between cancer and control subjects for the 2 electrode strips. However UBI said there was improved differentiation on the 3 electrode strip data (but data not shown). The forthcoming Victorian Cancer Biobank results will include results from 40 breast cancer subjects.

Our Comments on Peter Mac results:

- UBI said the sample sizes are not statistically significant. However the results, together with other work done over 5+ years by the 3 universities has given UBI increased confidence in the Tn Antigen product. UBI will invest \$2-3m to upgrade and certify two idle machines to make the new 3-electrode strips in volume, and another \$7m on a brand new machine. This work has already started (expected to take 9-12 months to complete).
- Since acquiring the Tn Antigen project in April 2021 from Deakin/ Swinburne/ Wollongong universities, (refer ASX announcements 9/4/21 & 13/4/21) and exclusive rights to Lubricin (a wonder coating which almost eliminates electrochemical interference on the test strips, increasing detection limits exponentially), UBI realised that its historical 2-electrode strip design was not capable of reliably measuring in the sub nano-molar ranges required for the new "Lubricin" based technology. A new 3-electrode strip has been designed by UBI that allows robust detection of analytes using Lubricin, so will benefit the Tn Antigen project and other projects (eg. Fertility biosensor and Instant Covid Test (ICT). The Peter Mac study was performed on both configuration of test strips.
- UBI believes that further development of both its test strips and the associated chemistry will see further improvements in detection capability.

Note, according to UBI this is a development study, of technology already proven to work by the universities. The stated objectives of the Tn trials are:

- Determine the clinically relevant range of Tn concentrations;
- Confirm the role of Tn antigen in multiple cancer types;
- Validate the performance of UBI's handheld point-of-care device & test strip;
- Determine the sensitivity and specificity of the Tn Antigen biosensor; and
- Benchmark the performance of the Tn Biosensor against existing biomarker performance.

What are Biomarkers?

Biomarkers are "chemicals" that can indicate both normal and abnormal processes in the body. One of the most famous is prostate-specific antigen (PSA). The PSA test, which detects abnormally high blood levels of PSA, has been used for decades to screen for prostate cancer and potentially catch it early. It was discovered in the late 1970's by Dr T Ming Chu at Roswell Park Comprehensive Cancer Centre in the USA, patented in 1984, and PSA screening approved by the FDA in the early 1986. Every year, 20m American men & similar number overseas take the PSA test as an early warning system for prostate cancer.

According to Vantage Market Research (found on Google), the global PSA testing market was worth US\$3.12 bn in 2021 (and projected to be US\$5.83bn in 2028). So these are potentially very lucrative markets for UBI to go after.

Companies operating in this space include:

- Abbott Laboratories (USA) (NYSE: ABT, market cap US\$204bn).
- F. Hoffman - La Roche AG (Switzerland), unlisted.
- Genomic Health Inc (USA), unlisted. 38 employees on LinkedIn.
- MDx Health (USA), unlisted. 171 employees on LinkedIn.
- Myriad Genetics Inc (USA) (Nasdaq: MYGN.O, market cap US\$2.0bn).
- OPKO Health Inc (USA)(Nasdaq OPK.O, market cap US\$2.1bn).
- Siemens Healthineers AG (Germany)(SHLG.DE, market cap EUR 61.7bn).

Next likely steps

On 11/11/21, UBI announced a 3-year Master Collaboration Agreement (MCA) with Mayo Clinic Biopharma Diagnostics for multiple projects, including to test and validate the Cancer Tn antigen biosensor (assuming the Peter MacCallum results above are positive). Mayo Clinic is one of the world's most prestigious oncology research and treatment institutions based in Rochester Minnesota USA. Mayo Clinic is the largest not-for-profit hospital and medical research group in the world with ~ 38,000 staff.

If UBI's Tn Antigen Cancer biomarker / biosensor proceeds from Peter Mac / Victorian Cancer Biobank / CIC BioGUNE to the Mayo Clinic for further trials, we would regard that as a major milestone towards commercialisation.

Assessing the commercial opportunity

UBI believes the Tn Antigen biomarker / biosensor has the following potential use cases:

- To monitor the State of Cancer Remission.
- To measure the Aggressiveness and Progression of Cancer.
- To measure the Effectiveness of Cancer Treatment.
- As a biomarker for Early Detection of Cancer.
- In Research and Development markets.

UBI's current thinking is that the cancer remission market would be the first, large segment to tackle. UBI estimates the cancer remission monitoring addressable market for this could be 78m patients x 12 monthly tests = 936m tests pa.

If we assumed a wholesale price to UBI of say A\$12 per test, that would be A\$11.2 bn potential revenue to UBI (assuming 100% market share). So a more realistic 1% market share would be \$112m of revenue to UBI. Still eye-watering.

Mayo Clinics opportunity

We understand that Mayo has at least 6 other bio-markers that may be suitable for the UBI biosensor platform technology, hence the broad collaboration agreement.

3. \$26.0m capital raising announced

UBI has announced a \$20m fully underwritten non-renounceable rights issue (1 for 6.85, at \$0.77 per share) and a \$6.0m institutional placement at the same price.

Other points of interest:

- Rights issue underwritten by Viburnum Funds, which is UBI's largest current shareholder with 28.6m shares (16.1% prior to the issue). UBI's non-executive Chairman Craig Coleman is also non-executive chairman and a major shareholder of Viburnum Funds.
- Subject to UBI shareholder approval (General Meeting in late May), Viburnum will receive 3.840m unlisted options as its underwriting fee, equal in value to 3.4% of the \$20m amount. Half of these (1.920m) will be exercisable at the offer price plus 20% (ie. \$0.92 each) and the other half at the offer price plus 30% (ie. \$1.00 each). 3-year term from issue date for both tranches. If exercised, these would raise a further \$3.69m for UBI.
- The issue price of \$0.77 is a slim 1.9% discount to the previous closing price of \$0.785 per share, and a 5% discount to the 5-day VWAP of \$0.81.
- Eligible shareholders can apply for up to 100% additional shares under a top up facility (subject to scale-back at management's discretion).
- Pro-forma cash \$38.3m (+\$25.3m net of costs). We estimate proforma net cash at \$36.0m (v \$15.8m at 31/12/21).
- Shares on issue increases by 19.0% from 178.0m to 211.8m.

4. Valuation

UBI: Sequoia Valuation	Comps Median Multiple	Valuation \$m	We Use \$m	Valuation Per Share \$	Weighting
DCF valuation (11.0% WACC; 3.0% terminal growth; 25% tax rate FY26 on)		427.0	427.0	\$ 1.84	33%
Comparable company's Valuation:					
FY22 EV / Sales multiples	8.8x	141.8			
FY23 EV / Sales multiples	6.4x	210.4	210.4	\$ 0.91	33%
FY24 EV / Sales multiples	4.1x	220.1	220.1	\$ 0.95	33%
A. Composite valuation (Base valuation)			285.5	\$ 1.23	100%
Blue sky projects - Tn Antigen, Fertility & Covid-19 Test (These projects are not in our revenue forecasts as commercialisation is uncertain) (Interesting comp: Grail Inc - being acquired by Illumina Inc for US\$8.0bn / A\$10.7bn)			50.0	\$ 0.22	
B. Optimistic valuation			335.5	\$ 1.45	
C. We set our 24-mth Price Target at the mid-point Shares on issue (Fully diluted)(m)		232.0		\$ 1.34	

Source: Sequoia estimates; Refinitiv consensus multiples for peers

Our revised valuation range is \$1.23 (base) to \$1.45 (optimistic, including a nominal A\$50m valuation estimate for the Tn Antigen cancer biosensor & ICT - Instant Covid-19 Test). We set our 24-month Price Target at the midpoint, \$1.34 per share (previously \$1.83 per share, a reduction of -27%).

As UBI is in the early stages of launching its new Sentia Wine Analyser product, and also in the early stages of expanding the distribution base for the Xprecia Stride coagulation product, and other new biosensor products under development and yet to launch, we think investors need to allow at least 2 years for UBI to achieve its growth. Accordingly, **we set a 24-mth price target (rather than a one-year target) at \$1.34 (previously \$1.83) being the mid-point of our valuation range.**

We do not forecast a dividend for UBI for at least the next few years. Our price target implies a total shareholder return of around 76% over 2 years.

5. UBI - Risks Factors

1. **Temporary step up in R&D investment in CY21 & CY22** – We forecast an R&D expense (discretionary investment) of \$10.5m in CY22 (v \$9.3m in CY21) but then dropping back to \$8.3m in CY23 and \$6.7m in CY24. This is a significant investment by UBI, representing 80% / 30% and 16% of UBI product sales for CY22, CY23 and CY24. The increased investment is on highly targeted projects.

UBI will receive a 43.5% R&D tax credit on eligible R&D expenditure until its worldwide revenue exceeds A\$20m, so we think this may have been a factor in UBI going harder on R&D now, before Sentia revenues get too big. We forecast 1 more year of government R&D grants for CY22 of \$3.1m.

2. **New product launches / High risk / High reward** - UBI is effectively at the starting blocks again, following LifeScan buying out its interests in the very successful blood glucose monitoring business, and Siemens relinquishing the blood coagulation business having failed to achieve satisfactory market share against Roche. UBI now has control of that coagulation business, but needs to launch the improved version of Xprecia Stride (Xprecia Prime) to take on Roche successfully. UBI's other major opportunities are all start-ups – Wine Analyser, Animal blood glucose monitoring, the Tn Antigen cancer test, and Instant Covid Test (ICT). There is a risk that UBI will not be able to create superior products. There is a risk that UBI will not be able to compete successfully against much larger, better funded, more established incumbents like Roche in coagulation, and Zoetis (Pfizer spin-out) in animal health. The portable wine analyser is a new product creating a brand new category to compete against bricks & mortar laboratories. There is a risk that the market may not accept UBI's innovative new products or their pricing.
3. **HRL Canada has a narrow customer base** – UBI's 4th product area, HRL performs mandatory calibration tests for the Siemens (now UBI controlled) coagulation business, Bayer, Abbott and Ionis. It was founded in 1994 and was loss-making when acquired by UBI in 2016 but the addition of the Siemens / UBI work put the business into profit in 2020 and it has since won \$1.3m of initial work for Bayer. UBI has a strategy to grow this business which is complementary to UBI's other products / businesses, and to broaden its customer base. It is not yet a firmly established business in our opinion.
4. **Forecasting risk** – Obviously with 3 of UBI's 4 businesses/ products being new, there is a high risk of the actual revenue and profit results differing materially from our forecasts. We do not have much of a comparable history to guide us. Having multiple products coming on stream aimed at separate market segments does provide some diversification benefit and should in theory reduce risk going forward.
5. **New product risk** is partly mitigated by having 17 years' experience in electrochemical biosensors, and having \$36m of net cash (including restricted cash) post-raise to see it through this new product launch and development phase.
6. **Selling & Distribution is new to UBI** – Excluding the small HRL calibration services business in Canada, UBI has historically serviced only two customers – LifeScan (ex-Johnson & Johnson) and Siemens Healthcare Diagnostics. UBI is now required to service the Siemens client base (120 hospitals and distributors, mainly in Europe) and find new distribution partners and clients for all of its other products (i.e. Wine analyser, PT-INR blood coagulation product, Animal blood glucose test). UBI has already signed 14 new distribution deals for the Wine Analyser since early December 2020 and new CEO John Sharman has 10 years' experience managing large, medium and small distributors locally and overseas when he was CEO of Medical Developments International (MVP). So this should not be a major problem.

7. **Financing risk** – We expect UBI to become Ebitda profitable in CY23 and NPAT profitable in CY24, and also become cash flow positive in CY23.
8. **Key person risk** – UBI is a small company with just 60 staff (46 staff in Australia and 14 overseas). Accordingly, there is significant key person risk with such a small organisation. E.g. the CEO, CFO and product and technology heads.
9. **Dual listed structure / CDIs / US centric reporting** – Because UBI is listed in Australia, and incorporated in Delaware USA, it has to comply with US SEC regulations. It prepares its accounts in US reporting format (e.g. SEC Form 10-k's for quarterly and annual results). Fortunately UBI reports in Australian dollars, but we find the US reporting format to be considerably different and difficult for Australian investors. For example, directors shareholdings and remuneration are not included in the Annual Report, but are provided in the AGM notice several months' later. Balance sheet and P&L have no references to notes to the accounts making navigation time consuming. We presume this structure was chosen originally with global ambitions in mind. We understand it is unlikely to change as there are A\$19m of Australian tax losses & \$0.9m CAD tax losses to protect and possibly recoup.

6. Possible Share Price Catalysts

We identify the following possible share price catalysts for UBI:

1. **Tn Antigen cancer biosensor** – Results from Victorian Cancer Biobank and CIC BioGUNE Spain (cancer patient blood trials) expected in 1H22 (280 more cancer patients, so more meaningful than Peter Mac results this week).
2. **Sentia - Progress with distributors and customers in the global wine-making industry** – UBI has announced 14 international distribution partners so far, with further distribution deals expected to be announced soon. Beyond these initial deals, we will look for evidence of on-going traction such as further device sales and accelerating consumables re-orders demonstrating traction with customers. Customer testimonials would be well received. Timing: 1H22.
3. **Sentia - New tests (products) for Sentia platform** – Test #2 (Malic acid launched Dec) and Test #3 (Glucose) ready for launch. 3 further tests to come (Total acid, Acetic Acid and Fructose). These new tests will use different consumable test strips, but the same reading device. So the value proposition to the winemaker should increase as more tests become available. Timing: Glucose (imminent); Fructose, Acetic Acid and Total Acid CY22.
4. **Xprecia Stride (PT / INR blood coagulation tests) - New distributors** - Progress with expanding the distribution of the Xprecia Stride coagulation product, beyond Siemens' current customer and distribution base. Timing: Underway and ramping up.
5. **Xprecia Prime (PT / INR blood coagulation tests) – Next generation product** – Timing: **European launch expected June**. US trial completion: Mid 2022. FDA submission and approval expected 2HCY22 or 1QCY23. US launch 1HCY23.
6. **Petrackr (Animal blood glucose diabetes monitoring) – new product**. Timing: 4QCY2022 (was 1HCY2022).
7. **Aptamers / Human fertility trials** – 2QCY22.
8. **Aptamers / Instant Covid Test (ICT)** - Preparing for human trials soon.
9. **Possible acquisitions** – With proforma cash of \$36m post raise (\$26m raise assumed), UBI is expected to consider further complementary partnerships or acquisitions, to accelerate its range of biosensor products and applications.

Appendix 1 - Sentia – Wine testing platform (device + test strip consumables)



Product Description

Sentia is a hand-held, portable testing device which UBI thinks will change the nature of laboratory testing in the wine making industry. The Sentia device, with its first test strip application, was released in March 2021.

Sentia measures the concentration of Free Sulphur Dioxide (Free SO₂) in post-fermentation wine. It is called free SO₂ because winemakers are only measuring the sulphur dioxide that has not bound with other chemicals in the wine (such as aldehydes, pigments, or sugars).

Sulphur dioxide is an additive used during the production of wine. In bottled wine, free SO₂ acts as a preservative but there is a balance to strike: too much free SO₂ can taint the consumer experience; too little could mean the wine spoils in the bottle. For this reason, measuring free SO₂ is important to winemakers.

Further tests for use are currently under development by UBI and are expected to be released in the next 18 months. These will use the same reader device, but require different strips (consumables):

1. Free S₂ (sulphur dioxide – launched March 2021).
2. Malic acid (launched December 2021).
3. Glucose – ready for launch (at 2/3/22); Fructose – temporarily delayed.
4. Total acid - expected launch 2022.
5. Acetic acid - expected launch 2022.

Measuring range: 3 to 50 mg per litre for free SO₂ (which UBI says is within 2% of the \$75k leading competitor product (Thermo Gallery which is the current industry gold standard).

Retail pricing for the reader device is approximately A\$2,000 for domestic / US\$2,000 (A\$2,600) for USA and international and A\$3.00 to \$4.00 for each test strip. Different tests are expected to have varied pricing.

Advantages

- Time – on the spot results within 1 minute (Vs competitors at 10-20 mins, and external lab testing 2+ days).
- Accuracy & repeatability.
- Portability – genuine at the wine barrel testing.
- Efficiency / costs – improved processing efficiency and associated labour cost savings, and no internal or external lab costs.
- Quality – in-built quality control checks for each test.
- Convenience - No messy reagents. Automatically calibrated. Data automatically stored for upload.

Global Distribution

Ref	UBI - Sentia wine analyser - Distributors Announced Distributor / Region	Date Announced	Website	Contact	Est. Staff
1	Australia (exclusive) Grapeworks Pty Ltd Dingley, Melbourne	7/12/20	www.grapeworks.com.au	Malcolm Wilson (MD)	14
2	USA - East Coast Enartis Inc Windsor, Sonoma County, California & Trecate Italy	27/01/21	www.enartis.com	José Alberto Santo (CEO)	92
3	USA - West Coast Wine & Beer Supply Ashland, Virginia	15/04/21	www.wineandbeersupply.com	Dave Robertson CEO	10
4	Canada Vines to Vintages Pelham, Ontario	1/04/21	www.vinestovintages.ca	Natalie Spytkowski (President)	5
5	Chile Singularity SP	14/04/21			
6	South Africa Vicard SA Cape Town	26/04/21	www.groupe-vicard.com	Michael Fernandes	
7	New Zealand (exclusive) Grapeworks NZ	29/04/21	www.grapeworks.com.au	Malcolm Wilson (MD)	
8	Switzerland XC Oenologie Sarl Cartigny, Geneva	7/06/21	www.xcoenologie.ch/	Xavier Chevally (CEO)	4
9	Spain & Portugal AZ3 Oeno Hernani, Spain	7/06/21	www.az3oeno.com/equipo-az3	Inaki Kamio (Manager)	18
10	France Vivelys SAS (SABT.PA) Languedoc-Roussillon, France	4/10/21	www.vivelys.com/fr	Karine Herrewyn (CEO)	49
11	USA Vinmetrica (USA) Carlsbad, California	25/10/21	www.vinmetrica.com/	Dr Richard Sportsman (CEO)	5
12	USA Astoria-Pacific (USA) Clackamas, (Portland) Oregon	4Q2021	www.astoria-pacific.com	Winston Pavitt (CEO)	25
13	Portugal A Freitas Vilar (Portugal) Lisbon	4Q2021	www.afreitasvilar.com		4
14	Greece Biodynamics SA (Greece) Athens	4Q2021	www.biodynamics.gr		24

Source: UBI announcements; All deals are non-exclusive except Australia & NZ

Staff numbers from LinkedIn (may be under-stated, as not all staff members are likely to be on LinkedIn)

NB. Additional agreements to be announced for rest of world during CY2022 per UBI.

Total Addressable Market

If we assume that UBI can achieve a 20% market share, the wine analyser market could become a ~\$100m per annum opportunity for UBI (refer our previous reports). The hardware device and the first two tests (for free sulphur dioxide & malic acid) have been launched, with 4 further tests to be finalised and launched during CY22.

Universal Biosensors Inc (UBI)						\$ 0.760					
Profit & Loss						Per share & Ratio data					
Years ended Dec \$m	FY20	FY21	FY22e	FY23e	FY24e	Years ended Dec	FY20	FY21	FY22e	FY23e	FY24e
Op. Revenue	3.2	5.778	13.148	27.903	42.204	Shares on Issue - Wavge (f/c)	177.6	177.7	214.9	228.3	228.3
Revenue growth %	-53.6%	80.4%	127.6%	112.2%	51.3%	Shares on Issue - at y/end	177.6	177.8	211.8	211.8	211.8
Cost of Goods Sold	(2.6)	(3.7)	(6.0)	(11.4)	(16.3)	EPS - Reported (cents)	(4.3)	(5.9)	(4.3)	(0.8)	3.7
Gross Profit	0.6	2.1	7.1	16.5	25.9	Growth	57.5%	37.5%	-27.9%	-81.8%	-580.2%
Gross Profit Margin	19.5%	36.4%	54.3%	59.3%	61.4%	P/E ratio (x)	-17.7x	-12.9x	-17.8x	-98.1x	20.4x
Other Income	4.1	4.6	3.1	0.0	0.0	EPS (normalised)(cents)	(4.7)	(5.9)	(4.3)	(0.8)	3.7
Cash Operating Expenses	(10.8)	(14.9)	(16.6)	(14.8)	(13.6)	Growth	71.4%	26.3%	-27.9%	-81.8%	-580.2%
Share-based payments	(0.2)	(0.1)	(0.2)	(0.2)	(0.2)	P/E ratio (x)	-16.2x	-12.9x	-17.8x	-98.1x	20.4x
EBITDA	-6.2	-8.3	-6.6	1.5	12.1	DPS (cents)	0.0	0.0	0.0	0.0	0.5
Ebitda Margin	-194.3%	-142.9%	-50.1%	5.5%	28.7%	Yield	0.0%	0.0%	0.0%	0.0%	0.7%
Depreciation & Amort	(2.2)	(2.2)	(2.5)	(3.2)	(3.6)	OCF per share (cents)	-4.7	-5.6	-2.3	2.7	6.9
EBIT	-8.5	-10.4	-9.1	-1.7	8.6	Price/OCF (x)	-16.3x	-13.6x	-33.5x	28.1x	11.0x
Ebit Margin	-263.9%	-180.6%	-69.1%	-6.1%	20.3%	EV/ Sales	43.19x	25.11x	10.26x	4.63x	2.70x
Interest Income (Expense)	0.1	(0.1)	(0.1)	(0.1)	(0.1)	EV/EBITDA	-22.2x	-17.6x	-20.5x	83.4x	9.4x
Share of Assoc NPAT	0.0	0.0	0.0	0.0	0.0	EV/EBIT	-16.4x	-13.9x	-14.8x	-76.1x	13.3x
Pre-tax profit	(8.3)	(10.5)	(9.2)	(1.8)	8.5	Liquidity & Leverage					
Income Tax Credit (Expense)	0.0	0.0	0.0	0.0	0.0	Market cap \$m	160.9	160.9	160.9	160.9	160.9
Tax Rate	0.0%	0.0%	0.0%	0.0%	0.0%	Less: Net Cash (Debt) \$m	23.9	15.8	26.1	31.8	47.1
Minorities (share of loss)	0.0	0.0	0.0	0.0	0.0	Enterprise Value \$m	138.3	145.1	134.8	129.1	113.9
Abnormals	0.7	0.0	0.0	0.0	0.0	Net Debt / Equity %	n/a	n/a	n/a	n/a	n/a
NPAT (reported)	-7.6	-10.5	-9.2	-1.8	8.5	Net Debt / EBITDA	n/a	1.9x	4.0x	n/a	n/a
Adjustments (Abnormals)	-0.7	0.0	0.0	0.0	0.0	ROA (EBIT / T.Assets) %	-15.0%	-23.4%	-13.9%	-2.3%	10.0%
NPAT (normalised)	-8.3	-10.5	-9.2	-1.8	8.5	ROE (NPAT / T.Equity) %	-21.9%	-38.1%	-20.9%	-4.1%	16.4%
Balance Sheet						Cash Flow					
Cash	28.1	18.1	28.4	34.1	49.3	EBITDA	-6.2	-8.3	-6.6	1.5	12.1
Receivables	0.1	0.5	1.1	0.3	0.5	Chge in Working Capital	-3.3	-0.6	1.8	4.7	3.7
Inventories	1.9	2.1	3.9	8.2	12.4	Interest Received (Paid)	0.1	-0.1	-0.1	-0.1	-0.1
Other	3.7	4.9	4.9	4.9	0.0	Income taxes paid	0.0	0.0	0.0	0.0	0.0
Total current assets	33.7	25.7	38.3	47.5	62.2	Other	1.1	-0.9	0.0	0.0	0.0
PP&E	8.4	6.2	13.7	11.1	8.3	Operating cash flows	-8.3	-9.9	-4.9	6.2	15.7
Invests (Restricted cash)	0.0	0.0	0.0	0.0	0.0	Capex	-0.4	-0.7	-10.3	-1.0	-1.1
Intangibles	14.3	12.7	13.5	14.3	15.1	Acquisitions	0.0	0.0	0.0	0.0	0.0
Deferred tax assets	0.0	0.0	0.0	0.0	0.0	Investments	0.0	0.0	0.0	0.0	0.0
Other	0.0	0.0	0.0	0.0	0.0	Other (Capitalised R&D)	0.0	0.0	0.0	0.0	0.0
Total non-current assets	22.7	18.8	27.1	25.4	23.4	Net investing cash flows	-0.4	-0.7	-10.3	-1.0	-1.1
Total Assets	56.4	44.5	65.4	72.9	85.6	Equity raised (bought back)	0.0	0.1	25.4	0.5	0.6
Payables	-1.6	-3.2	-7.4	-15.6	-23.6	Change in Debt	0.0	0.0	0.0	0.0	0.0
Interest bearing liabs -current	-0.5	-0.6	-0.6	-0.6	-0.6	Other	0.0	0.0	0.0	0.0	0.0
Deferred revenue - current	-1.6	0.0	0.0	-0.1	-0.1	Financing cash flow	0.0	0.1	25.4	0.5	0.6
Provisions	-0.6	-0.7	-0.7	-0.7	-0.7	Change in Cash	-8.6	-10.5	10.3	5.7	15.3
Other	-4.6	-4.9	-1.4	-1.4	-1.4	Revenue by Product					
Total Current Liabilities	-9.0	-9.4	-10.0	-18.3	-26.3	Blood Coag (PT-INR tests)	2.6	2.7	4.5	6.5	9.0
Interest-bearing liabs (Non-cu)	-3.6	-1.7	-1.7	-1.7	-1.7	Sentia Wine Analyser (03/2)	0.0	1.2	6.2	15.3	24.0
Deferred revenue (non-current)	0.0	0.0	0.0	0.0	0.0	Blood Glucose / Vet	0.0	0.0	0.0	3.0	5.3
Provisions	-2.8	-2.8	-2.8	-2.8	-2.8	Services - HRL Canada	0.6	2.0	2.5	3.1	3.9
Other	-3.1	-3.1	-7.0	-7.5	-3.1	Services - Contract R&D / t	0.0	-0.1	0.0	0.0	0.0
Total Non-current Liabilities	-9.4	-7.5	-11.5	-12.0	-7.5	Total Revenue	3.2	5.8	13.1	27.9	42.2
Total Liabilities	-18.4	-16.9	-21.5	-30.3	-33.9	Options/					
Total Shareholders' Equity	38.0	27.6	43.9	42.6	51.7	Directors Shareholdings	Shares (m)		% of coy		Perf.Rts(m)
Interims						Craig Coleman, Chairman (app NED 30/6/16, Chai	27.466	15.4%	0.0		
Year end June	1H20	2H20	1H21	2H21	FY21	Judith Smith, NED (appointed: 12/3/15)	0.300	0.2%	0.0		
Sales	1.1	2.1	3.4	2.4	5.8	David Hoey, NED, O/s-based (appointed 2/3/16):	0.566	0.3%	0.0		
Sales Growth (%)	-73%	-27%	219%	12%	80%	Graham McLean, NED (appointed: 7/3/22)	0.000	0.0%	0.0		
EBITDA profit (loss)	-4.1	-2.1	-2.1	-6.2	-8.3	Senior Management:					
EBITDA Margin	-388.3%	-97.9%	-62.0%	-258.0%	-142.9%	John Sharman, CEO (commenced 8/6/20)	0.000	0.0%	10.8		
EBIT	-5.3	-3.2	-3.2	-7.3	-10.4	Salesh Balak, CFO (commenced Nov 2006)	0.267	0.1%	2.2		
Equity Share of Assocs NPAT	0.0	0.0	0.0	0.0	0.0	Major Shareholders					
NPAT (Reported)	-4.5	-3.1	-3.2	-7.3	-10.5	Shares (m)		% of coy			
NPAT (Adjusted)	-5.1	-3.2	-3.2	-7.3	-10.5	Viburnum Funds	28.620	13.5%			
EPS (adjusted)(cents)	-2.9	-1.8	-1.8	-4.1	-5.9	HSBC Custody Nominees	24.400	11.5%			
EPS Growth	128.0%	22.6%	-37.4%	128.6%	26.3%	Sandhurst Trustees	23.350	11.0%			
DPS (cents)	0.0	0.0	0.0	0.0	0.0	Jency Capital Pty Ltd	17.020	8.0%			
Source: Sequoia estimates						JM Financial Group Ltd	15.400	7.3%			
						Source: ASX announcements, Refinitiv					

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Recommendation Criteria

Investment View

The Sequoia Wealth Management (SWM) Investment View is based on an absolute 1-year total return equal to capital appreciation plus yield.

Buy	Accumulate	Hold	Reduce	Sell
>20%	10% – 20%	0% – 10%	0% to -10%	>-10%

A Speculative recommendation is when a company has limited experience from which to derive a fundamental investment view.

Risk Rating

SWM has a four tier Risk Rating System consisting of: Very High, High, Medium and Low. The Risk Rating is a subjective rating based on: Management Track Record, Forecasting Risk, Industry Risk and Financial Risk including cash flow analysis.

ANALYST DISCLOSURE AND CERTIFICATION

Analyst remuneration is not linked to the research or rating outcome. Where financial products are mentioned, the Analyst(s) may hold the financial product(s) referred to in this document, but SWM considers such holdings not to be sufficiently material to compromise the recommendation or advice. Analyst holdings may change during the life of this document. The Analyst(s) certify that the views expressed in this document accurately reflect their personal, professional opinion about the matters and financial product(s) to which this document refers.

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