

# Nanoveu Ltd

## Company Update

### Clear winner in Nestle peer reviewed study.....now to market

Nanoveu Ltd (ASX:NVU) and the Nanoshield have been explicitly named (as the copper based ready to employ coating product tested) in the just released peer reviewed study looking at the effectiveness of antiviral coatings in the American Society for Microbiology (ASM) Journal (<https://journals.asm.org/doi/10.1128/AEM.01098-21>), along with a company using ROS coating technology and a company using a QAC spray. The study describes itself as “novel” and “rigorous”, looking to test commercially available products in real life settings, requirements of which are over & above the likes of ISO 21702 and ASTM method E1153. The settings were 1) immediate viral effect after 0, 30 and 120 minutes (+15 minutes contact/drying) against 24-hours for ASTM, 2) The impacts of repeat cleaning after 1, 7, 30 and 90 wipes with a microfibre cloth and water based detergent or alcohol based sanitiser, and 3) effectiveness in the presence of organic material (touching) over 10 to 50 touches. Only the copper compound-based coating (Nanoshield) successfully met all three criteria, with the ROS coating not meeting any, while the QAC spray was ineffective after one clean/wipe and only displayed immediate effectiveness if sprayed on and not wiped post application. While surface/formite transmission of COVID has shown to be less important than previously thought, it has and will continue to be used as an additional measure to mitigate risk and remains relevant for the transmission of other viruses. The application of Nanoshield and daily cleaning with a microfibre cloth after 50+ touches (a typical medium-touch day for self-serve kiosks) looks to be the benchmark for surface protection of commercially available products. The company now has the marketing material to make sales inroads with its distributor base.

### Business model

NVU has developed a number of treated film applications, with the current focus an antiviral & antimicrobial film called Nanoshield. This product is being sold via exclusive and non-exclusive B2B resellers, and potentially to OEMs and direct to larger customers. Resellers will typically add a mark-up to the wholesale price in order to fund the value-add required in the form of product application and maintenance. Additionally, NVU also sells directly to International Multinational accounts which is more suited to higher volume, cookie cutter products cut to specific dimensions for specific application.

### Now to market the relative effectiveness on surfaces

NVU now has a peer reviewed study into the Nanoshield's antiviral effectiveness relative to other commercially available products/technologies on the market (and achieving significantly higher sales – ZNO for example ~NZ\$28m in FY21). In our view this is the missing ingredient for sales momentum with distributors in place across the USA, ANZ, Singapore, Thailand, Vietnam, Malaysia, UK, Turkey, the Philippines, MEA and India.

### Valuation implies \$25m market cap vs \$8.0m currently

We are at the very early stages of product recognition and distributor sign-up, and as a result, framing the take-up in terms of revenue and resulting profit is difficult. Our sales assumptions currently imply an uplift as the product gains traction, and these are unchanged, but the significance of these study results have seen us reduce the discount rate used in our DCF, and as a result our DCF valuation increases from \$0.124/share to \$0.154/share. We continue to note that our sales estimates are well below minimum order requirements required for distributors and sales targets for performance shares.

#### Historical earnings and RaaS Advisory estimates

Year end	Revenue (A\$m)	EBIT reported (A\$m)	NPAT adjusted (A\$m)	EPS(adj) (c)	P/E (x)	EV/Sales (x)
12/20a	0.4	(1.7)	(1.7)	(0.01)	nm	16.14
12/21e	2.6	(1.1)	(1.1)	(0.01)	nm	3.06
12/22e	5.8	(0.1)	(0.1)	(0.00)	nm	1.35
12/23e	7.6	0.4	0.4	0.00	nm	1.00

Source: Company data, RaaS Advisory, Estimates for FY21e, FY22e and FY23e

### Film manufacturing

20<sup>th</sup> August 2021

#### Share details

ASX Code	NVU
Share price (intraday)	\$0.05
Market Capitalisation	\$8.0M
Shares on issue	162.1M
Net cash 30 June 2021	\$0.8M
Free float	~51.6%

#### Share performance (12 months)



#### Upside Case

- New enterprise & distribution customers
- Secures major vending retail/telco partner
- Commercial progress of EyeFyx and EyeFly

#### Downside Case

- Distributors fail to penetrate respective markets
- COVID vaccine programs reduce importance of antiviral products
- Ability to secure funding

#### Catalysts

- Follow-up distributor orders on the back of the Nestle study
- Success of Customskins machines on the ground

#### Board of Directors

Alfred Chong	Executive Chairman
Michael van Uffelen	Executive Director/CoSec
Stephen Apedaile	Non-Executive Director
David Nicol	Non-Executive Director

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## Nestle antiviral trial summary

Nestle Research tested Nanoshield against two other market leading antiviral coating solutions, a quarternary ammonium compounds (QAC) based surface spray, and an antimicrobial surface coating for glass. Initial testing was conducted using the HCoV-299E virus (a recognised surrogate for SARS-CoV-2). The antimicrobial surface coating for glass showed no antiviral activity at 120 minutes and was not tested further. The immediate antiviral activity of the quarternary ammonium compounds-based surface spray was only observed when the spray coating was applied without subsequent wiping. Subsequent simulated real-world cleaning procedures of the coated surfaces was done using microfibre cloths and both a water based detergent and 70% ethanol. The coatings were wiped with both solutions 1, 7, 30 and 90 times. The antiviral activity of Nanoshield remained intact after 90 wipes with a microfiber cloth using both water-based detergent and alcohol sanitiser. The antiviral activity of the QAC-based surface spray was completely removed after one round of cleaning with either cleaning product.

In the table below we summarise the key products tested and results (with commentary) from the three “real life” settings tested, immediate viral effects, performance under repeated cleaning and performance after touching. NVU’s Nanoshield is positioned to become the benchmark of antiviral surface protection.

<b>Exhibit 1: A layman’s summary of the peer reviewed Nestle antiviral study</b>				
<b>Variable</b>	<b>Peer 1</b>	<b>Peer 2</b>	<b>Nanoshield</b>	<b>Comments</b>
Technology	ROS Coating	QAC Spray	Copper coating	
Immediate effect	None	Effective	Effective	
Comments	Some reaction to influenza after 4-hours of UV-A light exposure	Only if the QAC coating was applied by spraying without subsequent wiping	SARS-CoV-2 inactivation >4.0 log (99.99%) against 1.6 log for QAC at time zero (15 minutes contact)	Nestle did not progress with Peer 1 product post tests on immediate effectiveness
Repeated cleaning	Not investigated further	None	Effective	
		Any physical wiping, with or without cleaning agents appeared to remove coating	Remained intact for at least 90 rounds of cleaning. Maintained using ethanol & detergent	Nanoshield particularly effective under repeat cleaning
Finger touching	Not investigated further	Effective	Effective	
			High protection after 10-touches (log >4.0 log), lower but still effective after 50 touches (1.4 log)	While effectiveness reduces on number of touches, still some effectiveness at 50, and cleaning restores full efficacy
Summary	Was not tested following immediate efficacy test.	Failed repeat cleaning at first clean and only effective if not wiped	Passed all three real life tests, particularly strong in repeat cleaning	Nanoshield positioned to become the benchmark antiviral surface protectant
Source: ASM publication				

## Base Case DCF valuation increased to \$0.154/share (previously \$0.124/share)

We are not changing our sales or earnings estimates at this stage, but given the significance of the Nestle study results we have reduced our discount rate via the beta (from 1.5x to 1.3x) on the belief our estimates now come with lower risk. As a result our valuation using the existing share count increases from \$0.124/share to \$0.154/share. Key risks from here are funding related and resources surrounding the marketing of these results.

### Exhibit 2: Base Case DCF valuation

	Parameters
Discount rate (WACC)	11.1%
Terminal Growth Rate	2.0%
Beta	1.3
Present value of free cashflows (\$m)	3.6
Terminal value (\$m)	20.5
Plus Net Cash at 30 June	0.8
Equity value (\$m)	25.0
Shares on issue (m)	162
<b>Equity value per share</b>	<b>\$0.154</b>

Source: RaaS estimates

### Exhibit 3: Financial Summary

Nanoveu Ltd						Share price (19 August 2021)						A\$		0.050	
Profit and Loss (A\$m)						Interim (A\$m)		H120	H220	H121F	H221F	H122F	H222F		
Y/E 31 December	FY19A	FY20A	FY21F	FY22F	FY23F	Revenue	0.0	0.3	0.6	2.0	3.1	2.7			
Revenue	0.1	0.4	2.6	5.8	7.6	EBITDA	(0.8)	(0.9)	(0.8)	(0.3)	0.1	(0.2)			
Gross profit	(0.0)	0.1	1.0	2.3	3.0	EBIT	(0.8)	(0.9)	(0.8)	(0.3)	0.1	(0.2)			
GP margin %	(24.6%)	34.6%	40.0%	40.0%	40.0%	NPAT (normalised)	(0.8)	(1.0)	(0.8)	(0.4)	0.0	(0.2)			
Underlying EBITDA	(2.8)	(1.7)	(1.1)	(0.1)	0.4	Minorities	0.0	0.0	0.0	0.0	0.0	0.0			
Depn	0.0	0.0	0.0	0.0	0.0	NPAT (reported)	(0.8)	(1.0)	(0.8)	(0.4)	0.0	(0.2)			
Amort	0.0	0.0	0.0	0.0	0.0	EPS (normalised)	nm	(0.007)	(0.005)	(0.002)	0.000	(0.001)			
EBIT	(2.8)	(1.7)	(1.1)	(0.1)	0.4	EPS (reported)	nm	(0.007)	(0.005)	(0.002)	0.000	(0.001)			
Interest income	0.0	0.0	0.0	0.0	0.0	Dividend (cps)	0.000	0.000	0.000	0.000	0.000	0.000			
Tax	0.0	0.0	0.0	0.0	0.0	Imputation									
NPAT	(2.8)	(1.7)	(1.1)	(0.1)	0.4	Operating cash flow	na	na	na	na	na	na			
Adjustments	0.0	0.0	0.0	0.0	0.0	Free Cash flow	na	na	na	na	na	na			
Adjusted NPAT	(2.8)	(1.7)	(1.1)	(0.1)	0.4	Divisionals	H120	H220	H121F	H221F	H122F	H222F			
Abnormals (net)	(0.5)	(0.1)	0.0	0.0	0.0										
NPAT (reported)	(3.2)	(1.8)	(1.1)	(0.1)	0.4										
Cash flow (A\$m)															
Y/E 31 December	FY19A	FY20A	FY21F	FY22F	FY23F	Total Revenue	0.0	0.3	0.6	2.0	3.1	2.7			
EBITDA	(2.8)	(1.7)	(1.1)	(0.1)	0.4										
Interest	0.0	0.0	0.0	0.0	0.0	Gross profit	0.0	0.1	0.2	0.8	1.2	1.1			
Tax	0.0	0.0	0.0	0.0	0.0	Underlying GP Margin %	23.5%	35.1%	40.0%	40.0%	40.0%	40.0%			
Working capital changes	(2.4)	0.7	0.4	(0.0)	0.1	Operating Costs									
Operating cash flow	(5.2)	(1.0)	(0.7)	(0.1)	0.5	Selling & Distribution	0.2	0.3	0.3	0.4	0.3	0.4			
Mtce capex	0.1	0.0	0.0	0.0	0.0	Administration	0.5	0.6	0.6	0.7	0.7	0.7			
Free cash flow	(5.1)	(1.0)	(0.7)	(0.1)	0.5	Other	0.1	0.1	0.1	0.1	0.2	0.1			
Growth capex	0.0	0.0	0.0	0.0	0.0	Total costs	0.8	1.0	1.0	1.1	1.1	1.3			
Acquisitions/Disposals	0.0	0.0	0.0	0.0	0.0										
Other	0.0	0.0	0.0	0.0	0.0	EBITDA	(0.8)	(0.9)	(0.8)	(0.3)	0.1	(0.2)			
Cash flow pre financing	(5.1)	(1.0)	(0.7)	(0.1)	0.5	EBITDA margin %	(4800.0%)	(260.1%)	(133.9%)	(15.7%)	2.8%	(5.9%)			
Equity issues	0.0	0.0	0.0	0.0	0.0	Margins, Leverage, Returns		FY19A	FY20A	FY21F	FY22F	FY23F			
Debt	0.0	1.3	1.2	0.6	0.0	EBITDA margin %		(4573.8%)	(471.3%)	(42.1%)	-1.3%	4.6%			
Net Dividends paid	0.0	0.0	0.0	0.0	0.0	EBIT margin %		(4573.8%)	(471.3%)	(42.1%)	-1.3%	4.6%			
Net cash flow for year	(5.1)	0.3	0.5	0.5	0.5	NPAT margin (pre significant items)		(4516.4%)	(459.1%)	(42.1%)	-1.3%	4.6%			
Balance sheet (A\$m)						Net Debt (Cash)		-2.2	-0.8	-0.4	-1.0	-1.2			
Y/E 31 December	FY19A	FY20A	FY21F	FY22F	FY23F	Net debt/EBITDA (x)	(x)	0.8 x	0.5 x	0.4 x	13.1 x	-3.4 x			
Cash	2.2	1.1	0.8	1.3	1.5	ND/ND+Equity (%)	(%)	53.1%	40.6%	25.2%	34.3%	35.1%			
Accounts receivable	0.2	0.2	0.5	0.6	0.8	EBIT interest cover (x)	(x)	n/a	n/a	n/a	n/a	0.0x			
Inv entory	0.0	0.4	0.4	0.4	0.4	ROA		nm	(79.6%)	(59.0%)	(3.4%)	12.8%			
Other current assets	0.0	0.0	0.1	0.1	0.1	ROE		nm	nm	nm	nm	nm			
Total current assets	2.4	1.7	1.8	2.4	2.9	ROIC		nm	nm	nm	nm	nm			
PPE	0.1	0.1	0.1	0.1	0.1	NTA (per share)									
Goodwill	0.0	0.0	0.0	0.0	0.0	Working capital		-0.3	0.3	0.7	0.7	0.8			
Right of use asset	0.0	0.0	0.0	0.0	0.0	WC/Sales (%)		(557.4%)	83.7%	26.5%	11.5%	10.1%			
Deferred tax asset	0.0	0.0	0.0	0.0	0.0	Revenue growth		nm	501.4%	602.0%	125.3%	31.4%			
Other	0.0	0.0	0.0	0.0	0.0	EBIT growth pa		nm	nm	n/a	n/a	(575.3%)			
Total non current assets	0.1	0.1	0.1	0.1	0.1	Pricing		FY19A	FY20A	FY21F	FY22F	FY23F			
Total Assets	2.6	1.8	1.9	2.5	3.0	No of shares (y/e)	(m)	132.5	135.0	166.7	176.0	176.0			
Accounts payable	0.5	0.2	0.2	0.3	0.4	Weighted Av Dil Shares	(m)	132.5	135.0	166.7	176.0	176.0			
Short term debt	0.0	0.3	0.3	0.3	0.3										
Provisions	0.0	0.0	0.0	0.0	0.0	EPS Reported	cps	nm	(0.013)	(0.006)	(0.000)	0.002			
Lease liabilities/other	0.0	0.0	0.0	0.0	0.0	EPS Normalised/Diluted	cps	nm	(0.012)	(0.006)	(0.000)	0.002			
Total current liabilities	0.6	0.6	0.5	0.7	0.8	EPS growth (norm/dil)		nm	nm	-48%	n/a	-575%			
Long term debt	0.0	0.0	0.0	0.0	0.0	DPS	cps								
Other non current liabs	0.0	0.0	0.0	0.0	0.0	DPS Growth		n/a	n/a	n/a	n/a	n/a			
Total long term liabilities	0.0	0.0	0.0	0.0	0.0	Dividend yield		0.0%	0.0%	0.0%	0.0%	0.0%			
Total Liabilities	0.6	0.6	0.5	0.7	0.8	Dividend imputation		30	30	30	30	30			
Net Assets	2.0	1.2	1.3	1.9	2.2	PE (x)			nm	7.7	-	118.6	25.0		
						PE market		18	18	18	18	18			
Share capital	13.3	14.2	15.4	16.0	16.0	Premium/(discount)			nm	(142.8%)	(759.1%)	38.7%			
Retained Earnings	(10.2)	(11.9)	(13.0)	(13.1)	(12.8)	EV/EBITDA		(1.6)	(3.4)	(7.3)	(105.6)	21.6			
Reserves	(1.2)	(1.1)	(1.1)	(1.1)	(1.1)	FCF/Share	cps	-0.2	-1.7	-0.9	0.0	0.1			
Minorities	0.0	0.0	0.0	0.0	0.0	Price/FCF share		-25.4	-3.0	-5.6	-109.7	39.0			
Total Shareholder funds	1.9	1.2	1.3	1.9	2.2	Free Cash flow Yield		(3.3%)	(28.9%)	(18.8%)	(1.0%)	2.9%			

Source: RaaS Advisory

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**Corporate Authorised Representative, number 1248415**

**of**

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**Effective Date: 6<sup>th</sup> May 2021**

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