

AAC Tech (2018 HK)

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Initial Coverage

BUY

Close price: HK\$46.70

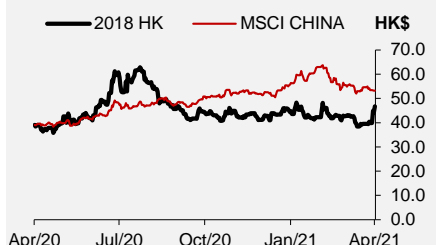
Target Price: HK\$60.80 (+30.2%)

Key Data

HKEx code	2018 HK
12 Months High (HK\$)	63.95
12 Month Low (HK\$)	35.80
3M Avg Dail Vol. (mn)	11.12
Issue Share (mn)	1,208.50
Market Cap (HK\$mn)	56,436.95
Fiscal Year	12/2020
Major shareholder (s)	CEO Mr. PAN Benjamin Zhengmin(40.98%)

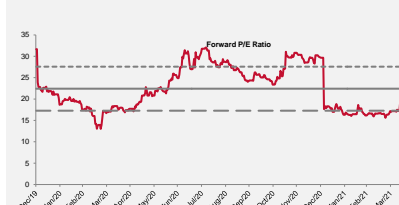
Source: Company data, Bloomberg, OP Research
Closing price are as of 14/4/2021

Price Chart



	1mth	3mth	6mth
Absolute %	8.6	4.4	6.9
Rel. MSCI CHINA %	11.6	10.0	1.8

PE



Company Profile

AAC Technologies is an all-rounded solution-provider for smart mobile devices. It offers advanced miniaturized solutions for components like Acoustics, Haptics to the consumer electronics industry worldwide.

Optical segment beginning to shine

- 1Q21 net profit expected to up 9.6-10.4x YoY to RMB510-550mn, pinpointing demand recovery
- WLG and hybrid lens will be the game changer for AAC
- Recovery of acoustics and haptics is on the way
- 32.9% 3 years CAGR in net profit, initiate with BUY

AAC is gaining traction in camera lens. We see AAC optical business is achieving economies of scale, as evident by its production ramp up and GPM expansion (+55% and 16.1p.p. yoy in 20Q4 respectively). We reckon sales of plastic lens will continue to grow rapidly in FY21E given its current capacity of 100-120kk/months is twice its sales volume (~50kk/months) in 20Q4. **Meanwhile, the hybrid lens with WLG technology, which can improve optical quality of handset camera lens and reduce lens sizes, will be the game changer for AAC to capture high-end handset lens market in long run.** AAC said the first batch of 1G5P hybrid lens has started shipment in 21Q1 and we expect to see smartphones using the WLG hybrid lens solution very soon.

Acoustics recovery is within sight. We spot encouraging GPM improvement for acoustics and EMD in 20Q4 (+5.2pp/+7.7p.p. qoq respectively to 31.9%/27.7%). We expect AAC to recover in 21E as there are more handset brands focusing on touch and audio experience. The robust iPhone 12 sales (reached record high of 90.1mn in 20Q4) shall be capable to offset subdued shipment of Android brands. In addition, the promotion of standardized small cavity speaker module shall improve profit margin of acoustics.

Buy on emerging optical business. We forecast 32.9% 3 years CAGR in net profit to RMB31.9bn by FY23E, on the back of 14.0% CAGR in revenue. We see margins recovery of acoustics and the growing optical segment as the key re-rating catalyst for AAC Tech. Our SOTP target price at HK\$60.8 represents 28.2x/22.7x FY21E/22E PER, of which HK\$12.3 is for the optical segment while HK\$48.5 for the other business. We see progress in WLG and breakeven of optical segment being major re-rating catalysts.

Risks. (1) Sluggish demand for acoustics and haptic motors; (2) WLG failing to deliver

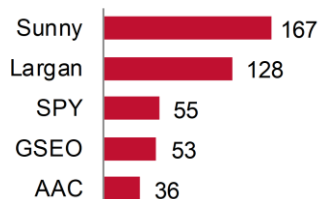
Exhibit 1: Forecast and Valuation

Year to Dec (RMB mn)	FY19	FY20	FY21E	FY22E	FY23E
Revenue	17,884	17,140	20,431	23,110	25,409
Growth (%)	-1.4	-4.2	19.2	13.1	9.9
Net profit	2,160	1,359	2,198	2,734	3,189
Growth (%)	-42.9	-37.1	61.8	24.4	16.6
Diluted EPS (HK\$)	2.14	1.35	2.16	2.68	3.13
EPS growth (%)	-44.9	-36.8	59.9	24.4	16.6
Consensus EPS (HK\$)			2.34	2.86	3.48
Change to previous EPS (%)					
ROE (%)	11.6	7.3	9.7	11.1	11.7
P/E (x)	21.9	34.6	21.6	17.4	14.9
P/B (x)	2.4	2.2	2.1	1.9	1.7
Yield (%)	0.9	0.6	0.9	1.1	1.3
DPS (HK\$)	0.40	0.30	0.43	0.54	0.63

Source: Bloomberg, OP Research

New star in handset lens market

In Sep 2020, AAC is the 5th largest handset lens manufacturers in term of shipment volume (kk/month)



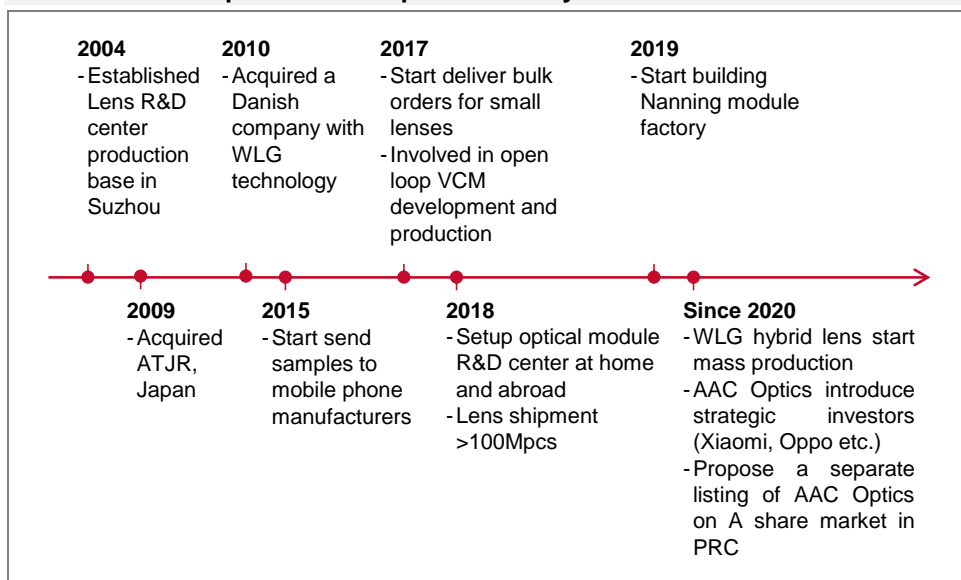
Sources: Sunrise big data

AAC Optics introduced strategic investors in 2 rounds

	1 st Round	2 nd round
Date	Jul 2020	Oct 2020
Investors	4 (including Xiaomi, Oppo)	20 (including Sequoia Capital, SDIC)
Shareholdings	9.58%	9.28%
Post investment valuation	~RMB 12bn	~RMB 17.9bn
AAC's shareholdings afterwards	90.42%	82.02%

Sources: Company

Exhibit 2: AAC Optics's development history

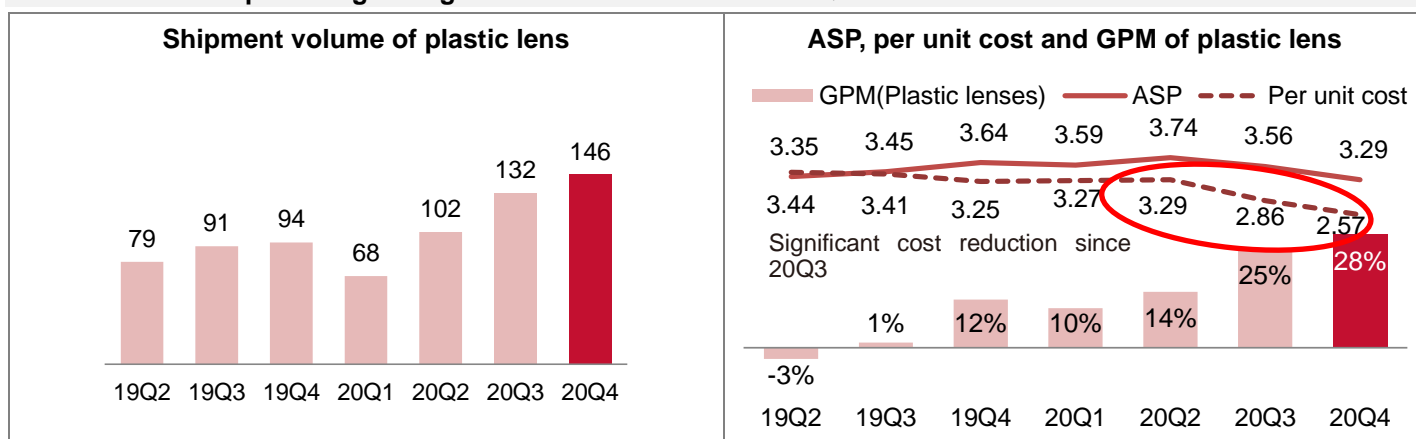


Source: Company

Optic segment will soon bear fruits. In 20Q4, we see the ramp up in shipment (+55% yoy to 146mn units) of plastic lens with significant improvement in GPM. The latter mainly came from the 21% YoY decline in per-unit production cost which offset 10% decline in ASP.

AAC can easily increase the production of plastic lens given that production capacity has reached 100-120kk/ month (20Q4 production: ~50kk/month). We see commencement of new plants in Chongqing (in 20Q4) and Czech (in 21 1H) will further reduce per unit cost, and hence improve profit margins. **We expect GPM of plastic lens continued to improve in FY21 and GPM target of 40% is reachable.**

Exhibit 3: AAC's optical segment gathered momentum since 20Q3



Source: Company, OP research

Hybrid lens: Trump card for AAC Optical segment

We argue AAC's unique hybrid lens with WLG ("Wafer-level glass") technology will be the game changer in handset lens market, which makes AAC to become a major player in the high-end handset lens market.

The hybrid lens with WLG technology can help deal with the limitation of plastic lens-set **especially when there are more smartphone models using ultra-high resolution camera sensor.**

Hybrid lens with WLG technology has several advantages over the conventional plastic lens: (1) reduces optical problems like halo and glare, (2) produces higher resolutions, and (3) improves light transmission with the same optical design as compared to plastic lens.

Hybrid lens also **allows simplification of optical design which is essential to control the size of camera module.** It is said the optical performance of a 5P1G (5 Plastic + 1Glass) glass-plastic hybrid lens is similar to a 7P(7 plastic) lens.

We think AAC could highlight the competitive edge of hybrid lens (i.e. higher light intake) by adopting more glass elements (i.e. 2 glasses) in handset lens. We reckon **AAC's hybrid lens with WLG technology** will lead the segmental growth in longer-term once **they are capable in producing mass volume at reasonable price and yield rate.**

Exhibit 4: Comparison between plastic lens, glass lens and Hybrid solutions

	Plastic Lens	Glass Lens	Glass-plastic Lens(Hybrid lens)
Weight	Light	Heavy	Middle
Capacity for massive production	High	Low	Middle
Cost of production	Low	High	Middle
Image quality	Lower	Higher (Less temperature drift, higher light intake, higher resolution)	Middle
Transmittance after coating	~90%	can reach 99%	Middle
Usage	Smartphone	High-end security video surveillance, car lens, vision machine	High-end security video surveillance, car lens, Smartphone

Sources: Global Market Monitor, OP research

AAC pointed that its hybrid lens solutions could:

- (1) Increase light intake by 15% with the same aperture (F ratio),
- (2) Increase resolution by 5%,
- (3) Reduce thickness of the lens by 5-10%

as compared with conventional plastic lens with the same specifications.

Plastic lens hit plateau with high pixel. We see a notable trend since 2019 that more smartphones (1) have dedicated cameras to shoot ultra-wide landscape, portrait and/or telephoto, and (2) use ultra-high resolution image sensors (>40MP) and lens with bright aperture.

Weak light transmission is especially a pain to ultra-high pixel image sensors that it has a very tiny pixel pitch to capture light.

This trend brings upbeat demand for high-end lens set which requires more sophisticated optical design (increase lens elements). **Unfortunately, this highlights the weakness of plastic lens, such as (1) weak light transmission, and (2) increasing the thickness of camera module. We believe Hybrid lens/ WLGL will gradually become mainstream for ultra-high resolution camera.**

Exhibit 5: Many handset brands has made significant upgrade on camera configurations for their popular smartphone series

Low-price range (~USD150-200)

Samsung Galaxy A1 series(A12 = USD170)				
Model	A10	A10s	A11	A12
Month of launch	Mar-19	Aug-19	May-20	Dec-20
Num of main camera [^]	1	1 [↑]	2 [↑]	3 [↑]
Wide	13MP	13MP	13MP	48MP [↑]
Ultra-wide	N	N	5MP	5MP
Macro	N	N	N	2MP [↑]

Redmi Note series(Note 10 = USD200)					
Model	Note 5	Note 7	Note 8	Note 9(4G)	Note 10
Month of launch	Feb-18	Feb-19	Oct-19	Nov-20	Mar-21
Num of main camera [^]	1	2	3 [↑]	2 [↓]	3 [↑]
Wide	12MP	48MP [↑]	48MP	48MP	48MP
Ultra-wide	N	N	8MP [↑]	8MP	8MP
Macro	N	N	2MP [↑]	X [↓]	2MP [↑]

Low-to mid-range (~USD200-400)

Oppo F series(F17 = USD230)				
Model	F9	F11	F15	F17
Month of launch	Aug-18	May-19	Jan-20	Sep-20
Num of main camera [^]	1	1	3 [↑]	2 [↓]
Wide	16MP	48MP	48MP	16MP [↓]
Ultra-wide	N	N	8MP [↑]	8MP
Macro	N	N	2MP [↑]	N [↓]

Realme Series (Realme 7 = ~USD 230)						
Model	2	3	5	6	7	8
Month of launch	Sep-18	Mar-19	Aug-19	Mar-20	Oct-20	Mar-21
Num of main camera [^]	1	1	3 [↑]	3	3	3
Wide	13MP	13MP	12MP	64MP [↑]	48MP [↓]	64MP [↑]
Ultra-wide	N	N	8MP [↑]	8MP	8MP	8MP
Macro	N	N	2MP [↑]	2MP	2MP	2MP

Mid-to high range (~USD400-800)

Samsung Galaxy A7 series(A72=~USD550)				
Model	Oct-18	May-19	Jan-20	Mar-21
Month of launch	A7(2018)	A70	A71	A72
Num of main camera [^]	2	2	3 [↑]	3
Wide	24MP	32MP [↑]	64MP [↑]	64MP [↑]
Ultra-wide	8MP	8MP	12MP [↑]	12MP
Tele	N	N	N	8MP(2x zoom) [↑]
Macro	N	N	5MP	2MP [↓]

Xiaomi Mi series(Mi10 =~USD700)					
Model	Mi 6	Mi 8	Mi 9	Mi10 5G	Mi 11
Month of launch	Apr-17	Jun-18	Mar-19	Feb-20	Jan-21
Num of main camera [^]	2	2	3 [↑]	3	3
Wide	12MP	12MP	48MP [↑]	108MP [↑]	108MP
Ultra-wide	N	N	13MP [↑]	13MP	13MP
Tele	12MP(2x Zoom)	12MP(2x Zoom)	12MP(2x Zoom)	N [↓]	N
Macro	N	N	N	2MP [↑]	2MP

High-end and premium (~USD800+)

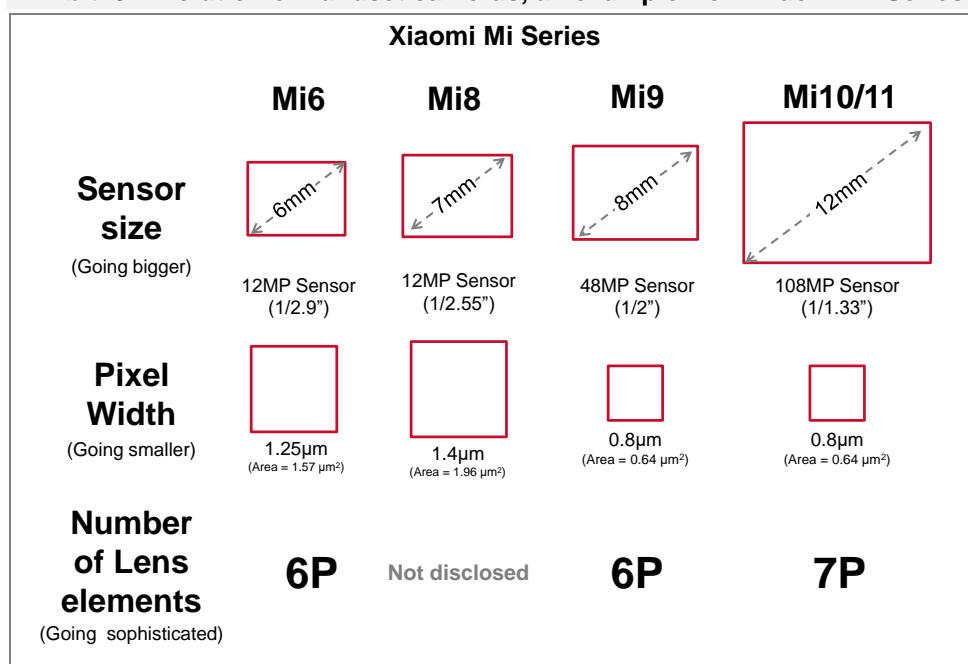
Samsung Galaxy Note series(Note 20=USD999)				
Model	Note8	Note9	Note10	Note20
Month of launch	17-Sep	18-Aug	19-Aug	20-Aug
Num of main camera [^]	2	2	3 [↑]	3
Wide	12MP	12MP	12MP	12MP+ 64MP [↑]
Ultra-wide	N	N	16MP [↑]	12MP [®]
Tele	12MP(2x Zoom)	12MP(2x Zoom)	12MP(2x Zoom)	Integrated with the Wide camera*

Huawei Mate Pro series(Mate 40 Pro=USD1,100)				
Model	10 Pro	20 Pro	30 Pro	40 Pro
Month of launch	17-Nov	18-Oct	19-Sep	20-Nov
Num of main camera [^]	2	3 [↑]	3	3
Wide	12MP+ 20MP	40MP [↑]	40MP	50MP [↑]
Ultra-wide		20MP [↑]	40MP [↑]	20MP [®]
Tele		8MP (3x Zoom) [↑]	8MP (3x Zoom)	12MP(5x zoom) [↑]

Sources: GSMArena, Open sources, OP research

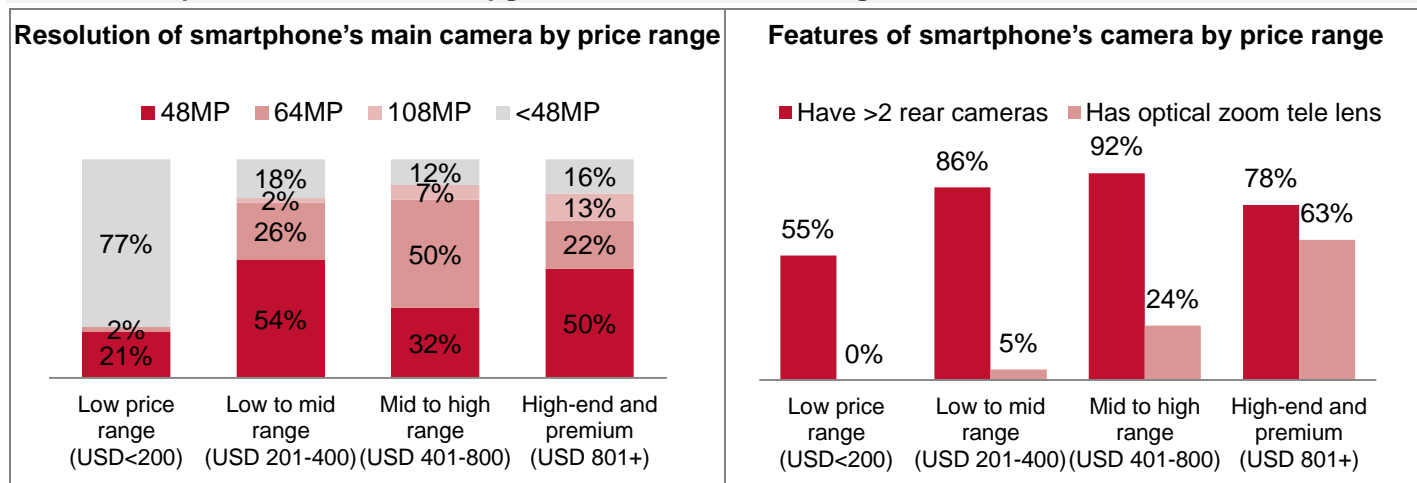
[^] Not including Deep of field (Dof) Camera [®] Upgrade(s) beyond image resolution

Exhibit 6: Evolution of handset cameras, an example from Xiaomi Mi Series



Sources: Xiaomi, OP Research

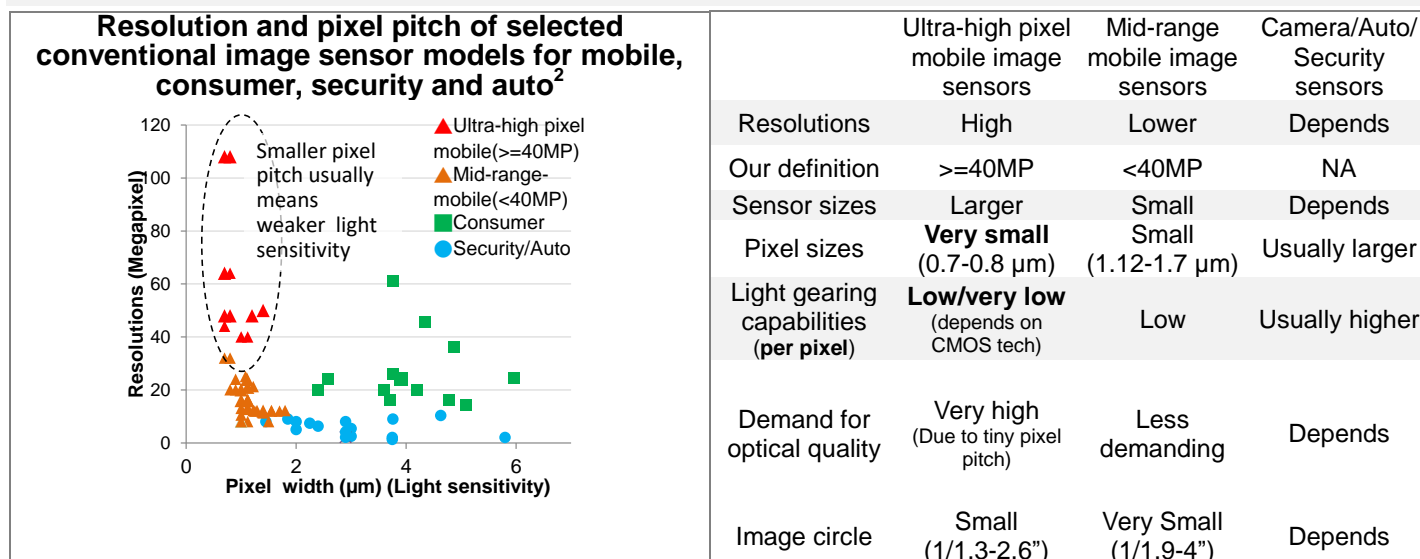
Exhibit 7: Android's phone models¹ launched since 2020 commonly use high resolution image sensors and includes multiple rear cameras. This upgrade boosts demand for high-end handset lens



Sources: GSMArena, Open sources, OP Research

¹ We counted a total of 483 Android phone models launched by Samsung, Huiwei (including Honor), Xiaomi, Oppo, Vivo, Realme, ZTE, Lenovo(including Motorola), LG, Tecno (including Infinix) since 2020

Exhibit 8: Comparison between ultra-high pixel mobile image sensors, mid-range mobile image sensors and camera sensors



Sources: Sony, Samsung, Open Sources, OP research

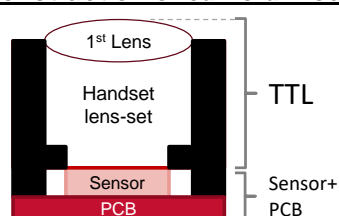
Exhibit 9: Largan's plastic lens solution shows the handset lens design has to be more sophisticated and thicker to meet the optical demand for higher pixel mobile image sensor

Pixel	8M	13M	48M	64M	108M
Construction	4 Plastic	5 Plastic	6 Plastic	7 Plastic	8 Plastic
Sensor	1/4"	1/3.1"	1/2"	1/1.7"	1/1.33"
Fno	2.0	2.0	1.79	1.6	1.69
Total track Length ³	3.3mm	4.2mm	5.4mm	6.7mm	7.8mm

Sources: Largan, OP research

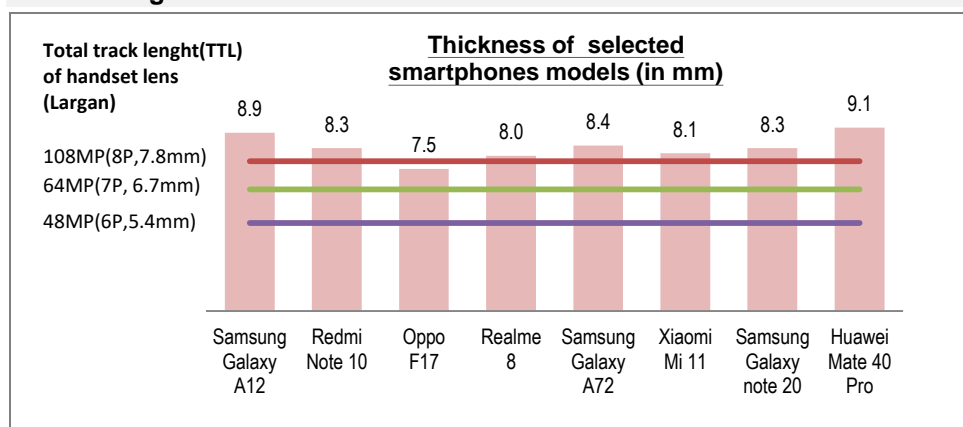
The total height of camera module should be higher than **TTL (total track length)**, which is the total length from the 1st lens to image plane) as we also have to take the thickness of image sensor and PCB into account (Less than 1mm)

Construction of camera module



Sources: Open sources, OP Research

Exhibit 10: Handset brands has to make their smartphone thicker to integrate conventional plastic lens module tailored for ultra-high pixel mobile image sensors



Sources: GSMarena, Largan, OP research

² We includes mobile image sensor made by Sony, Samsung and Onmi-vision. On the other hand, we only list camera and security/Auto image sensors made by Sony.

³ Vary with different specifications

AAC is ready to tap into high-end handset lens-set market as it has already rolled out a handful of hybrid lens solutions for ultra-high resolution camera.

Exhibit 11: AAC Optics has already developed some hybrid lens solutions⁴ that are tailor-made for popular ultra-high resolution image sensors

					
	48M High performance main cam	108M High performance main cam	64M Large aperture main cam	64M Low TTL main cam	FZL Tele (5X)
Pixel	48M	108M	64M	64M	8M
Construction	1G5P	1G6P	1G6P	1G6P	1G3P
Sensor	1/2"	1/1.3"	1/1.7"	1/1.7"	1/4.4"
Fno	1.65	2.0	1.6	1.6	3.4
TTL	5.7mm	7.8mm	6.7mm	6.2mm	-
FOV	80	82	79	80	19.6









Sources: Company

As its first move for hybrid lens business deployment, AAC begins to mass produce WLG in 21Q2. **AAC has shipped the first batch of 1G5P lens in 21 Q1 and we expect soon there will be smartphones using AAC's hybrid lens solution in the market soon.**

We also expect AAC to produce handset camera module to strengthen its competitiveness. Other than image sensor, **AAC nowadays can make most of the key components (i.e. AF and OIS motors) by itself.**

AAC currently has 15 handset camera module production lines (with monthly capacity of ~7.5kk/month) mainly for AAC's high-end lens (6P, hybrid lens). AAC may expand the number of production lines to 25-30 (with monthly capacity of ~15kk/month), depending on the demand for camera modules.

Exhibit 12: AAC Optics's product portfolio

AAC optical camera modules example	AAC actuator's example
 Large-size AF camera module 1/3.3"108M	 AF motor
 Large-size and aperture AF camera module 1/3.9"84M	 Latent motor
 Ultra wide AF lens module 1/3.3"16M UW	 OIS motor
 telephoto lens module 1/4.4"8M 5X	 SMA motor

Source: Company

⁴ To our understanding, some of the solutions did not have the certificate to enter into supply chain of Handset brands.

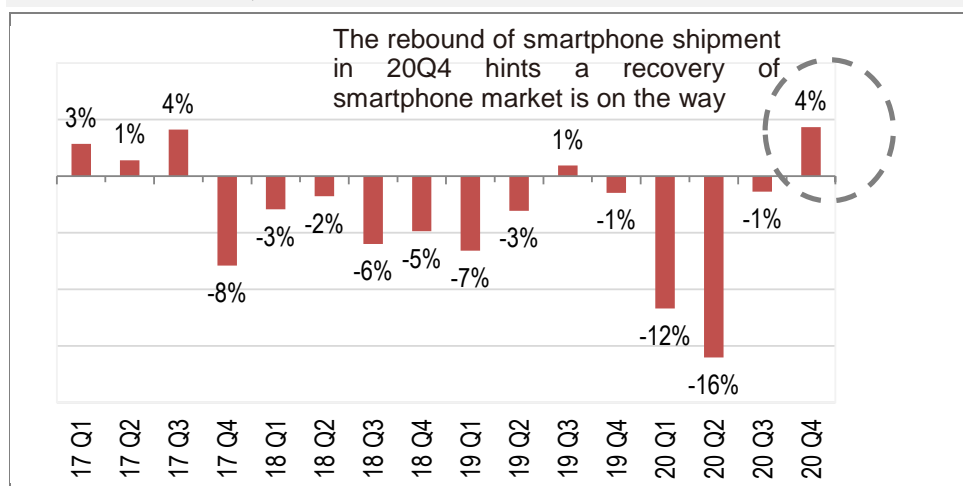
Acoustics and Haptics: Recovery within sight

We believe the robust iPhone 12 sales and configuration upgrade of smartphone in audio/touching will raise the outlook of acoustics and haptic motors for AAC this year.

We reckon AAC can benefit from iPhone 12 cycle (Apple shipment +22% yoy to historical high of 90.1mn in 20Q4) and offset the subdued shipment of Android brands due to chip shortage and Sino US tension (e.g. Huawei ban in 2020).

We are positive on the outlook of global smartphone shipment in 2021 if chips shortage eased. This is many thanks to: (1) low base of comparison in 2020 H1, and (2) the emerging demand for 5G handsets. IDC expects global smartphone shipments to growth 5.5% YoY.

Exhibit 13: Global smartphone shipment resumed growth in 20Q4 for the first time since 19Q3



Source: IDC

X-axis haptic motor has bigger vibration and better response time as compared to Z-axis haptic motor and ERM vibration motor

We also expect the continuous upgrade in smartphone configurations will lift AAC's sales of high-end acoustics and haptic motors. Today even low-end model has enough processing power to handle most common smartphone apps. Therefore, handset brands have to focus on handset quality to achieve product differentiation.

We believe more low-to-mid range smartphone models will upgrade acoustics and haptic motor in addition to adoption of full-screen displays, dual-cameras, and biometric security.

For example, AAC's X-axis haptic motor solutions, which provides diverse vibration effects to enhance touch experience of smartphone, has been adopted by many flagship smartphone models. The Company will promote the X-axis haptic motor to more low-to-mid range models.

Exhibit 14: Android brands recognize “better touch experience” and “supreme audio performance” as selling points for smartphones

Xiaomi claimed Mi 9 Pro could provide diverse vibration effects through the x-axis linear haptic motor



Vivo iQOO Neo 3 highlighted the supreme audio performance by super linear speakers



Source: Xiaomi, Vivo, Company

Exhibit 15: AAC Tech offered the best audio speakers for smartphone

The secret behind Xiaomi Black Shark 4 Pro's excellent audio performance is the AAC's dual 1216 super linear speaker units with maximum aptitude reaches up to 0.7mm



Smartphone models	DXOMark score(Audio)	Solutions offered by AAC
Xiaomi Black Shark 4 Pro	81	Speaker + audio tuning
Xiaomi Mi 10s	80	Speaker
Asus ROG Phone 5	79	Speaker
Xiaomi Mi 10 Pro	76	Speaker
Huawei Mate 20 X	75	Speaker

Source: DXOMark, Company

AAC Tech plans to promote standardization of small cavity speaker module to enjoy scale benefit. The Company has the technology know-how to deliver high quality handset speaker with 20-30% reduction in size. We believe it will (1) accelerate the adoption of stereo acoustics (**dual Super Linear Speaker (“SLS”) instead of single SLS**) and (2) promote standardized speaker in miniature form.

AAC plans to launch standardized small cavity speaker module and it expects it will account for 20-30% of total shipment in 2021, then increase to 80% in 2022. We see the standardized small cavity speaker will be welcomed by handset brands and AAC could benefit from economies of scales through reduction of SKUs.

Our view on AAC's businesses

Exhibit 16: Our view on AAC's Optics, Acoustics, Electromagnetic Drives and Precision Mechanics and MEMS businesses

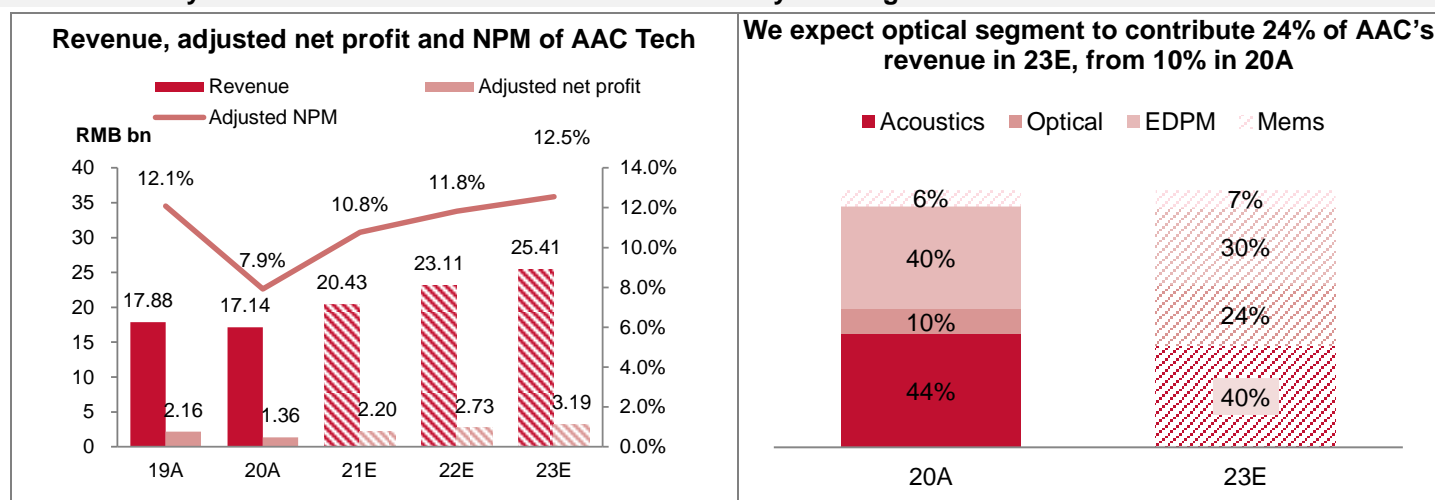
	Optics	Acoustics	Electromagnetic Drives and Precision Mechanics	MEMS																																																												
Outlook (Highest: 5 stars)	★★★★★	★★★	Haptics:★★★★★ Precision Mechanics: ★	★★★																																																												
Our Revenue and GPM forecast (FY20A-23E)	<table><tr><th></th><th>Revenue</th><th>GPM</th></tr><tr><td>20A</td><td>1,634</td><td>18.8%</td></tr><tr><td>21E</td><td>3,325</td><td>26.6%</td></tr><tr><td>22E</td><td>4,839</td><td>29.3%</td></tr><tr><td>23E</td><td>6,012</td><td>32.0%</td></tr></table>		Revenue	GPM	20A	1,634	18.8%	21E	3,325	26.6%	22E	4,839	29.3%	23E	6,012	32.0%	<table><tr><th></th><th>Revenue</th><th>GPM</th></tr><tr><td>20A</td><td>7,560</td><td>27.9%</td></tr><tr><td>21E</td><td>8,605</td><td>30.0%</td></tr><tr><td>22E</td><td>9,294</td><td>31.0%</td></tr><tr><td>23E</td><td>10,037</td><td>32.0%</td></tr></table>		Revenue	GPM	20A	7,560	27.9%	21E	8,605	30.0%	22E	9,294	31.0%	23E	10,037	32.0%	<table><tr><th></th><th>Revenue</th><th>GPM</th></tr><tr><td>20A</td><td>6,847</td><td>23.8%</td></tr><tr><td>21E</td><td>7,199</td><td>25.0%</td></tr><tr><td>22E</td><td>7,415</td><td>25.0%</td></tr><tr><td>23E</td><td>7,563</td><td>25.0%</td></tr></table>		Revenue	GPM	20A	6,847	23.8%	21E	7,199	25.0%	22E	7,415	25.0%	23E	7,563	25.0%	<table><tr><th></th><th>Revenue</th><th>GPM</th></tr><tr><td>20A</td><td>1,083</td><td>17.6%</td></tr><tr><td>21E</td><td>1,302</td><td>22.0%</td></tr><tr><td>22E</td><td>1,562</td><td>24.0%</td></tr><tr><td>23E</td><td>1,797</td><td>26.0%</td></tr></table>		Revenue	GPM	20A	1,083	17.6%	21E	1,302	22.0%	22E	1,562	24.0%	23E	1,797	26.0%
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Revenue CAGR (FY20A-23E)	54.4%	9.9%	3.4%	18.4%																																																												
Latest business progresses and strategic deployments	<u>WLG/Hybrid lens :</u> 1G5P: shipped in 21Q1, 1G6P: under customer's identification <u>Handset Camera Module:</u> 1. VCM production lines will be set up in 21Q1; 2. Monthly Production capacity: 7.5kk→15kk	1.Reduce SKUs of acoustics 2.Promote small cavity speaker module 3.Offer “tuning algorithm + hardware” services	<u>Haptics:</u> 1. Promote X-axis haptic motor to android market 2. Offer “tuning algorithm + hardware” services <u>Precision Mechanics:</u> 1. Adjust production capacity flexibly based on demand, 2. Entered into notebook market	Entered into wearables and automobile market																																																												
Catalysts	1.Greater economies of scale for plastic lens 2. WLG ready for mass production	1. Strong iPhone 12 sales 2. More mid-to low range smartphones adopt stereo audio 3. Product optimization of cavity speaker	1.Broadened customer base	1.Benefits from the maturing Internet of Things (IoT) deployment 2. Broadened product portfolio																																																												
Risks	1. Delay/obstacles in mass production of WLG 2. APS decline especially for low-end plastic lens	1. Delay configuration upgrade	1. Delay configuration upgrade 2. Uncertain outlook for orders, especially from Huawei	Delay in grow of IoT																																																												
Comment	<u>Plastic lens:</u> Could gain market share and improve GPM even with aggressive pricing strategy <u>Hybrid lens with WLG:</u> need 1-2 years to prove its superiority; Major earnings driver in the longer term.	<u>Small cavity speakers :</u> More adoption of stereo sound and multi-track solutions (↑ sales volume of speaker) Reduction of SKUs will be the key for margins improvement	<u>Haptics:</u> High-end haptic motor penetrate into Android's mid-to low range smartphones. But it will not be major earning drivers due to low basis. <u>Precision Mechanics:</u> Lackluster; risk of order shortfall.	Expected to grow fast thanks to technology deployment of IoT and broadened product portfolio.																																																												
Upside risks	1. Stronger than expected iPhone 12 sales; 2. Accelerating adoption of high-end speakers and haptics even for smartphone models in mid-to-low price range																																																															
Downside risks	1. Chip shortage disrupts smartphone shipment; 2. Delay in quality upgrade for audio and haptics; 3. ASP decline due to fierce competition																																																															

Source: OP Research

Initiate BUY on AAC's recovery and 32.9% earnings CAGR

We forecast 32.9% 3 years CAGR in net profit to RMB 3.19 bn by FY23E, on the back of 14.0% CAGR in revenue to RMB25.4 bn. Our 62%/24%/17% FY21E to 23E adj net profit growth is very much driven by growing demand for high-end acoustics given deeper penetration in Xiaomi's lower range smartphone models and robust Apple sales. Moreover, AAC is beginning to enjoy scale advantage in plastic lens production, while the mass production of WLG will be a long-term earnings catalyst. We expect AAC's gross margin will get close to 30% in FY23E thanks to recovery of acoustics and growing optical segment

Exhibit 17: Key financials forecast for AAC Tech : Profitability driven growth



Source: Company, OP Research

Trading at 21.6x/17.4x FY21E/22E PER and 10.1x/8.7x EV/EBITDA, the valuations of AAC Technology are undemanding given the recovery of handset market in FY21 and earnings potential of optical segment.

We assign HK\$14.9 bn value for AAC's optical segment based on FY23E EV/Sales of 2.55x, plus 19.5x FY22E net profit (5 year avg P/E with 20% discount) for the other businesses. Our SOTP target price at HK\$60.8 represents 28.2x/22.7x FY21E/22E PER. Further re-rating can happen upon successful mass production of WLG and breakeven optical segment.

Exhibit 18: SOTP Valuation

	Methodology	Multiple	Value (HK\$ bn)	Per share (HK\$)
Optic	EV/sales of Optical segment in FY23E with reference of Sunny Optical's EV/sales	2.55	14.91	12.3
Acoustics, EDPM, Mems and others	5 year avg P/E with 20% discount based on net profit in FY22E	19.5	58.64	48.5
				60.8

Source: OP Research

Financial Summary

Year to Dec	FY19	FY20	FY21E	FY22E	FY23E
Income Statement (RMB mn)					
Acoustics	8,167	7,560	8,605	9,294	10,037
Optical	1,070	1,634	3,325	4,839	6,012
EDPM	7,694	6,847	7,199	7,415	7,563
Mems	929	1,083	1,302	1,562	1,797
Others	24	16	0	0	0
Turnover	17,884	17,140	20,431	23,110	25,409
YoY%	-1.4	-4.2	19.2	13.1	9.9
COGS	-12,777	-12,913	-14,880	-16,584	-17,914
Gross profit	5,107	4,227	5,551	6,526	7,494
Gross margin	28.6%	24.7%	27.2%	28.2%	29.5%
Other income	329	650	502	502	502
Selling & distribution	-275	-285	-327	-347	-381
Admin	-643	-672	-736	-832	-915
R&D	-1,717	-1,920	-2,112	-2,324	-2,556
Other opex	0	0	0	0	0
Total opex	-2,635	-2,878	-3,175	-3,502	-3,852
Operating profit (EBIT)	2,801	2,000	2,879	3,527	4,145
Operating margin	15.7%	11.7%	14.1%	15.3%	16.3%
Provisions	0	0	0	0	0
Interest Income	0	0	0	0	0
Finance costs	-248	-353	-352	-352	-352
Profit after financing costs	2,552	1,648	2,526	3,174	3,792
Associated companies & JVs	0	0	0	0	0
Pre-tax profit	2,552	1,648	2,526	3,174	3,792
Tax	-330	-147	-316	-397	-474
Minority interests	0	6	-12	-44	-130
Net profit	2,222	1,507	2,198	2,734	3,189
YoY%	-41.2	-32.2	45.9	24.4	16.6
Adjusted net profit	2,160	1,359	2,198	2,734	3,189
YoY%	-42.9	-37.1	61.8	24.4	16.6
Adjusted net margin	12.1%	7.9%	10.8%	11.8%	12.5%
EBITDA	4,932	4,562	5,728	6,527	7,279
EBITDA margin	27.6%	26.6%	28.0%	28.2%	28.6%
EPS (RMB)	1.78	1.12	1.82	2.26	2.64
YoY%	-44.9	-36.8	59.9	24.4	16.6
DPS (HK\$)	0.40	0.30	0.43	0.54	0.63

Year to Dec	FY19	FY20	FY21E	FY22E	FY23E
Cash Flow (RMB mn)					
EBITDA	4,994	4,562	5,728	6,527	7,279
Chg in working cap	-728	-639	-966	-807	-728
Others	-52	0	-187	0	0
Operating cash	4,214	3,923	4,574	5,720	6,551
Tax	-370	-330	-147	-316	-397
Net cash from operations	3,843	3,593	4,428	5,405	6,154
Capex	-2,813	-5,088	-4,200	-4,000	-4,000
Investments	-85	0	0	0	0
Dividends received	0	0	0	0	0
Interest received	48	50	50	50	50
Others	-546	1,776	0	0	0
Investing cash	-3,395	-3,262	-4,150	-3,950	-3,950
FCF	449	331	278	1,455	2,205
Issue of shares	0	0	0	0	0
Buy-back	-277	-17	0	0	0
Interests paid	-233	-248	-294	-352	-352
Dividends paid	-1,531	-416	-335	-440	-547
Net change in bank loans	2,443	357	400	0	0
Others	-147	2,907	0	0	0
Financing cash	255	2,582	-229	-792	-899
Net change in cash	704	2,913	48	663	1,305
Exchange rate or other Adj	51	-884	0	0	0
Opening cash	4,059	5,512	7,540	7,589	8,251
Closing cash	4,814	7,540	7,589	8,251	9,557
CFPS (HK\$)	3.8	3.6	4.3	5.3	6.0

Source: Company, OP Research

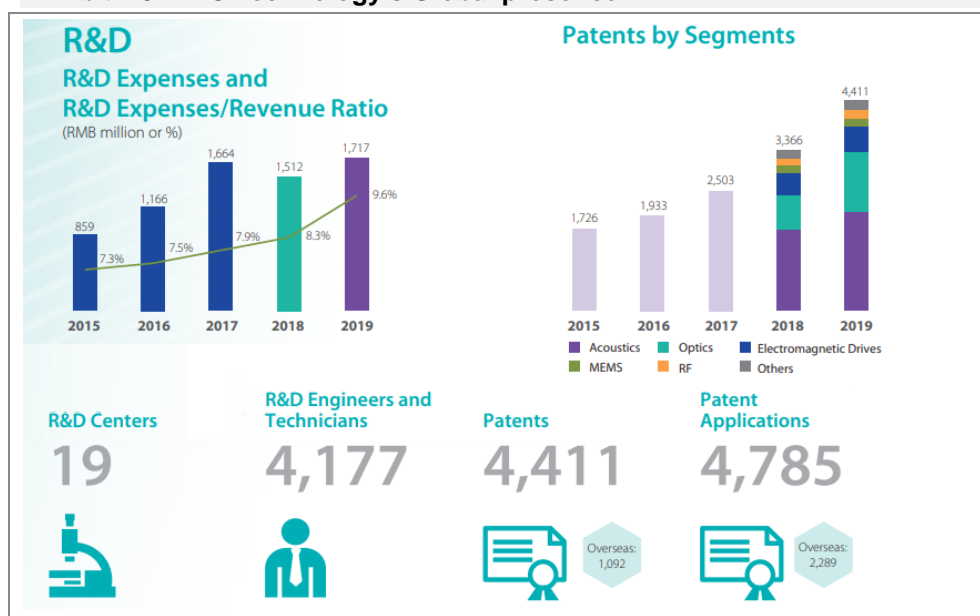
Year to Dec	FY19	FY20	FY21E	FY22E	FY23E
Ratios					
Gross margin (%)	28.6	24.7	27.2	28.2	29.5
Operating margin (%)	15.7	11.7	14.1	15.3	16.3
Net margin (%)	12.4	8.8	10.8	11.8	12.5
Selling & dist'n exp/Sales (%)	1.5	1.7	1.6	1.5	1.5
Admin exp/Sales (%)	3.6	3.9	3.6	3.6	3.6
Payout ratio (%)	18.7	22.2	20.0	20.0	20.0
Effective tax (%)	12.9	8.9	12.5	12.5	12.5
Total debt/equity (%)	43.9	38.8	37.7	34.3	31.0
Net debt/equity (%)	15.4	3.8	5.1	2.0	Net cash
Current ratio (x)	1.9	1.8	1.8	1.9	2.0
Quick ratio (x)	1.4	1.4	1.4	1.4	1.5
Inventory T/O (days)	104.7	112.9	105.0	105.0	105.0
AR T/O (days)	113.8	110.2	110.0	110.0	110.0
AP T/O (days)	156.4	147.1	140.0	140.0	140.0
Cash conversion cycle (days)	62.1	76.0	75.0	75.0	75.0
Asset turnover (x)	0.6	0.5	0.5	0.5	0.5
Financial leverage (x)	1.7	1.8	1.8	1.7	1.7
EBIT margin (%)	15.7	11.7	14.1	15.3	16.3
Interest burden (x)	0.9	0.8	0.9	0.9	0.9
Tax burden (x)	0.9	0.9	0.9	0.9	0.8
Return on equity (%)	11.6	7.3	9.7	11.1	11.7

Year to Dec	FY19	FY20	FY21E	FY22E	FY23E
Balance Sheet (RMB mn)					
Fixed assets	16,911	18,592	20,057	21,170	22,150
Goodwill	164	164	164	164	164
Intangible assets	434	373	373	373	373
Right-of-use assets	1,072	1,896	1,896	1,896	1,896
Deposits	455	576	576	576	576
Other non-current assets	351	447	447	447	447
Non-current assets	19,386	22,049	23,514	24,627	25,607
Inventories	3,664	3,995	4,281	4,771	5,153
AR	5,576	5,176	6,157	6,965	7,657
Prepayments & deposits	0	0	0	0	0
Other current assets	55	138	138	138	138
Cash	5,512	7,540	7,589	8,251	9,557
Current assets	14,808	16,850	18,164	20,125	22,506
AP	5,474	5,205	5,707	6,361	6,871
Tax	178	167	316	397	474
Accruals & other payables	0	0	0	0	0
Bank loans & leases	1,876	3,349	3,349	3,349	3,349
Lease liabilities	97	494	494	494	494
Other current liabilities	86	166	166	166	166
Current liabilities	7,711	9,380	10,031	10,766	11,354
Bank loan & notes	6,535	5,055	5,463	5,463	5,463
Lease liabilities	310	317	317	317	317
Deferred tax & others	290	2,339	2,339	2,339	2,339
Non-current liabilities	7,136	7,711	8,119	8,119	8,119
Total net assets	19,347	21,808	23,528	25,867	28,640
Shareholder's equity	19,351	21,159	22,865	25,159	27,801
Share capital	98	98	98	98	98
Reserves	19,253	21,061	22,767	25,061	27,703
MI	10	662	674	718	847
BVPS (HK\$)	19.2	21.0	22.4	24.7	27.3

Appendix I –AAC Tech’s profile

AAC Technology, found in 1993, is the world’s leading solutions provider for smart devices such as lens, acoustics, haptics, MEMS etc. AAC has over 39,000 employees worldwide. AAC has 19 R&D centers in China, USA, Finland, Denmark, United Kingdom, South Korea, Japan and Singapore.

Exhibit 19: AAC Technology’s Global presence



Source: Company

Exhibit 20: Shareholding structure



Source: Company, OP Research

Exhibit 21: Management profile

Name	Age	Position	Description
Mr. Pan Benjamin Zhengmin	52	Executive Director, CEO	Mr. Pan co-founded the Group in 1993. He is responsible for providing strategic direction and leadership and for developing and implementing the Group's strategic objectives and business plans. Specifically, Mr. Pan has held critical leadership roles with responsibilities for overseeing the sales, marketing, research and development, manufacturing, along with the Group's international expansions and operations. In addition, he has also been instrumental in leading AAC's research and development strategy, and has developed a number of patents used in the design and manufacturing some of the Company's acoustic products. Mr. Pan graduated from Jiangsu Province Wujin Teacher School in 1987.
Mr. Mok Joe Kuen Richard	56	Executive Director	Mr. Mok is responsible for the finance operations, and legal and compliance of the Group. He has over 30 years of experience in the financial services industry, including employments with international accountancy firms such as KPMG, the Hong Kong-listed South China Holdings Company Limited, the investment banking firm, Asian Capital Partners Group and the Hong Kong-listed financial services group Dah Sing Financial Holdings Limited. Mr. Mok is a member of HKICPA and the Institute of Chartered Accountants in England and Wales. He graduated with a Bachelor degree of Economics from the London School of Economics and Political Science, London University.

Source: Company, OP Research

Exhibit 22: Peer Group Comparison

					PER	PER	PER	EPS	EPS	3-Yr net					EV/		EV/	Net	Gross	Net		ROE	ROE		
			Mkt cap	3-mth avg	Hist	FY1	FY2	FY1	FY2	profit	PEG	Div yld	Div yld	P/B Hist	P/B FY1	Ebitda	Ebitda	gearing	margin	margin	Hist	FY1	Sh px	Sh px	
Company	Ticker	Price	(US\$m)	t/o (US\$m)	(x)	(x)	(x)	YoY%	YoY%	Cagr (%)	(x)	Hist (%)	FY1 (%)	(x)	(x)	Hist	Cur Yr	Hist (%)	Hist (%)	Hist (%)	(%)	(%)	1-mth %	3-mth %	
AAC Technologies	2018 HK	46.70	7,266	62.2	34.6	21.6	17.4	59.9	24.4	32.9	0.66	0.6	0.9	2.22	2.08	12.6	10.1	3.8	24.7	8.8	7.3	9.7	8.6	4.4	
HSI		28,900.83			15.0	13.2	11.5	13.8	14.3	13.5	0.97	2.4	2.8	1.22	1.27						8.1	9.6	0.6	1.4	
HSCEI		10,999.30			15.5	10.9	9.7	41.4	12.5	21.7	0.50	2.4	2.9	1.27	1.32						8.2	12.0	(1.6)	(2.7)	
CSI300		4,980.63			18.5	13.5	12.8	37.2	5.5	17.7	0.8	1.7	2.1	2.2	2.0						12.1	14.6	(3.2)	(9.0)	
Adjusted sector avg*					31.5	23.4	18.3	30.5	26.9	24.5	1.2	0.3	0.7	5.2	5.2	17.7	15.7	8.9	16.5	5.0	18.9	22.2	(5.2)	(5.2)	
Sunny Optical	2382 HK	177.30	25,038	191.2	33.4	28.0	22.8	19.6	22.5	20.7	1.3	0.4	0.7	9.9	7.6	22.8	19.1	0.0	22.9	12.8	33.4	29.7	(3.3)	(7.8)	
Byd Electronic	285 HK	43.60	12,648	86.3	15.2	17.0	13.9	(10.6)	22.5	10.8	1.6	0.2	0.8	3.7	3.1	10.2	11.1	0.0	13.2	7.4	27.7	18.7	(4.9)	4.7	
Truly Intl Hldgs	732 HK	1.25	529	4.3	8.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.4	N/A	4.1	N/A	46.9	9.2	2.3	5.8	N/A	(11.3)	31.6	
Goertek Inc -A	002241 CH	30.56	15,987	463.8	34.3	26.0	20.3	32.0	28.3	27.6	0.9	0.3	0.8	5.1	4.4	18.8	14.9	18.9	16.0	4.9	15.9	17.7	6.1	(28.8)	
Luxshare Preci-A	002475 CH	34.15	36,588	634.1	50.4	32.8	24.2	53.6	35.9	39.0	0.8	0.3	0.4	9.6	8.6	32.5	22.8	0.0	19.9	7.5	30.1	27.5	(16.4)	(42.9)	
Handong Getto-A	002655 CH	7.58	418	6.5	58.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	5.1	N/A	19.1	N/A	33.1	21.6	3.9	8.8	N/A	17.3	13.5	
Merry Elec	2439 TT	131.00	964	8.8	20.5	13.0	10.4	57.8	25.3	N/A	N/A	5.9	5.8	2.3	2.2	16.1	10.6	1.5	12.5	3.8	10.7	17.4	(1.5)	(6.4)	

* Outliners and "N/A" entries are excl. from the calculation of averages

Source: Bloomberg, OP Research

Our recent reports

Date	Company / Sector	Stock Code	Title	Rating	Analyst
31/03/2021	HKTV	1137	FY20 bottom line fell short on fulfillment cost	BUY	Kevin Tam
29/03/2021	361 Degrees	1361	Encouraging recovery in 2H20, visible growth for FY21E	BUY	Kevin Tam
25/03/2021	Greentown Mgmt	9979	Pure cash cow with surprise on dividend	BUY	John Siah
23/03/2021	Yeahka	9923	Payment driven growth thesis remains compelling	BUY	Kevin Tam
17/03/2021	Yidu Tech	2158	Digging the healthcare big data goldmine	BUY	Kevin Tam
22/02/2021	Razer	1337	A year of harvest	NR	John Siah
04/02/2021	HKTV	1137	Flat Jan GMV, but still upbeat on growth prospect	BUY	Kevin Tam
19/01/2021	Yeahka	9923	More conviction on marketing services driven growth	BUY	Kevin Tam
18/01/2021	Xtep Intl	1368	Channel inventory improvement on track	BUY	Megan Jin
15/01/2021	New Higher Edu	2001	More visible and stellar growth	BUY	John Siah
15/01/2021	Anta Sports	2020	More positive Anta brand FY21E outlook	HOLD	Megan Jin
06/01/2021	HKTV	1137	E commerce solution business moving forward	BUY	Kevin Tam/Megan Jin
30/12/2020	New Oriental Edu	9901	Tutoring elephant continues to fly	BUY	Kevin Tam
23/12/2020	Anta Sports	2020	Precor disposal in plan of Amer brands restructuring	HOLD	Megan Jin
21/12/2020	Scholar Edu	1769	Extraordinary growth expected to continue	NR	John Siah
14/12/2020	CG Services	6098	Placement for strategic deployment	BUY	Megan Jin
09/12/2020	Edvantage Group	382	Expansion begins	BUY	Megan Jin
08/12/2020	HKTV	1137	Satisfactory November GMV	BUY	Kevin Tam/Megan Jin
26/11/2020	China Edu Group	839	Robust growth outlook on surging new students	BUY	John Siah
20/11/2020	China Edu Group	839	A fast rising education giant grabbing ample opportunities in China education market	BUY	John Siah
19/11/2020	Ausnutria Dairy	1717	More to expect from FY21E	BUY	Megan Jin
11/11/2020	Edvantage Group	382	Robust organic growth with more boosters ahead	BUY	Megan Jin
10/11/2020	HKTV	1137	All fronts speeding up	BUY	Kevin Tam/Megan Jin
05/11/2020	TCL Electronics	1070	Falcom Network as a cream on top	BUY	Kevin Tam
02/11/2020	Razer	1337	Winner from "stay-at-home" life	NR	John Siah
27/10/2020	Greentown Mgmt	9979	New treasures in the property market	BUY	John Siah
21/10/2020	Li-Ning	2331	Resumed store openings bodes full recovery	BUY	Megan Jin

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