## **GOTHAM CITY RESEARCH LLC**

## AAC Technologies LTD (Ticker = 2018):

## Why are AAC's reported profit margins

## higher AND smoother than Apple's? Part I

## **GOTHAM CITY RESEARCH'S OPINIONS**

- AAC has used 20+ undisclosed related parties & dubious accounting to overstate & smoothen profits since 2014. In this regard, AAC reminds us of Longtop Financial Technologies.
- AAC has used these hidden entities to evade Apple's labor standards specified in the Apple Supplier Code of Conduct.

## Example #2: ZhongBeiTong Magnetic Materials 沈阳中北通磁科技股份有限公司

Gotham City Research has reason to believe that ZhongBeiTong Magnetic Materials is a significant undisclosed related party:

- The company estimated it would enter into RMB 150 million transactions with AAC in 2016.
- ZhongBeiTong Magnetic Materials declared itself (in its filings) as a related party supplier to AAC because Ingrid Wu, one of the unit's main shareholders and board members, shares the same name as the woman who is the wife of AAC CEO Mr. Pan and an AAC board member.
- In contrast, AAC has never disclosed ZhongBeiTong Magnetic Materials in its annual report.

	关联人		关联交易类 型	交易内容	交易金额 (元)	Related Party
爱发科口	中北真空(沈阳)有	限公司	提供劳务	加工费	100,000.00	
INTERNA	RAL MAGNETIC MATEN TIONAL CORP. (台湾 业股份有限公司)		销售商品	货物	5,000,000.00	AAC Technologies
司(瑞声 瑞声科打 光电利	技控股有限公司及其 声学科技(苏州)有限 技(沭阳)有限公司 科技(常州)有限公 Technologies VIET CO.LTD.等)	<b></b> <b></b> <b></b> <b></b> <b></b> <b></b> <b></b> <b></b> <b></b> <b></b>	销售商品	货物	150,000,000.00	Group & Subsidiarieis

2、销售商品/提供劳务关联交易预计

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## **GOTHAM CITY RESEARCH LLC**

## GOTHAM CITY RESEARCH HAS REASON TO BELIEVE THAT:

- AAC has used 20+ undisclosed related parties & dubious accounting to overstate & smoothen profits since 2014.
- At least 20 undisclosed related party suppliers are owned or managed by AAC CEO's family members or employees.
- These undisclosed related party suppliers are not listed in Apple's supplier list, despite some claiming otherwise.
- Some of the undisclosed related entities supply the same products as AAC does, are based in the same locations as AAC is, & hire employees under AAC's name.
- AAC has used these hidden entities to evade Apple's labor standards specified in the Apple Supplier Code of Conduct.
- Apple (and other parties) will conduct independent investigations, & validate our findings. As a result, AAC's profit margins will decline, converging to its peers' levels.
- AAC is in violation of Hong Kong listing rules, Apple's supplier code of conduct, and its own representations.

## OBSERVATIONS

- AAC's operating profit margins have been unusually high & smooth relative to its peers & Apple, since 2014.
- AAC's costs per employee is less than half its peers'.
- AAC has no listed CFO since 2010, per its annual reports.
- Chunyuan Wu, the wife of AAC's CEO, is a member of AAC's audit & risk committee.
- AAC had 3 COOs within 1 year (2013-2014), around the same time AAC's margins became unusually smooth.
- AAC's auditor, Deloitte, is considered *the Audit Firm That Has Had the Most Trouble in China*.
- AAC's relationship with respect to its undisclosed related parties reminds us of Longtop Financial Technologies' relationship with its undisclosed related parties.
- AAC's 2016 audit fee as a % of revenue is only 0.02%, lower than Let's Gowex's (a Spanish fraud, where 90% of the revenues were fake).

Company: AAC Technologies LTD

Ticker: 2018

Exchange: Hong Kong (SEHK)

CEO: Zhengmin Pan

CFO: None disclosed

Share price performance 2017 YTD: +58%

Share price (May 10<sup>th</sup>, 2016): 111 HKD per share

Initial price target: 44 HKD per share

Market cap: 136.3B HKD

52-week high: 116.50 HKD

52-week low: 55.70 HKD

Shares outstanding: 1,228M

Foreign ownership (as % of float): 66%

2014-2016 gross margins: 41.4%, 41.5%, & 41.5%

2016 Audit fee as % of revenue: 0.02%

Auditor: Deloitte Touche Tohmatsu

## INTRODUCTION

GOTHAM CITY RESEARCH first heard about AAC Technologies LTD in 2015, an Apple supplier, when Apple was said to have found a defect in components produced by AAC for the Apple Watch.<sup>1</sup> With AAC's stock up nearly 3x since then, we decided to re-visit AAC recently. Upon a cursory review, AAC appears to be an exceptionally good company with notably higher and smoother margins relative to its peers<sup>2</sup>:

Net Profit Mar	Net Profit Margins - AAC versus Peers				
	2014	2015	2016		
Goertek	13.0%	9.2%	8.6%		
ALPS Electric	3.0%	5.8%	6.0%		
Knowles Corp	13.1%	1.9%	2.2%		
Merry Electronics	10.1%	5.2%	11.9%		
Jinlong Machinery	9.5%	10.8%	4.0%		
AAC Tech	26.0%	26.5%	26.0%		

AAC margins are so good, it has reported higher & smoother margins than Apple, Google, & Microsoft<sup>3</sup>:

Net Profit M	argins - AAC ve	ersus the B	est
	2014	2015	2016
Google	21.9%	21.8%	21.6%
Microsoft	25.4%	13.0%	19.7%
Apple	21.6%	22.9%	21.2%
AAC Tech	26.0%	26.5%	26.0%

What is AAC Technologies' "secret sauce"? How does AAC, an Apple supplier, achieve higher and smoother profit margins than Apple, Google, & Microsoft? Some have attributed AAC's superior & smooth margins to a myriad of factors, such as workforce automation.<sup>4</sup> While some of these explanations may sound plausible, we see it differently.

In our opinion, the evidence supports a more nefarious explanation: AAC uses undisclosed related party suppliers to inflate and smoothen its margins. Such an explanation may seem far-fetched, except that there are a number of case studies of companies that relied on nearly identical schemes to overstate profits (and whose share prices subsequently declined). Take for example, Longtop Financial Technologies Ltd ("LFT"), a formerly US-listed Chinese company that used undisclosed related parties to overstate its profits.<sup>5</sup> In this regard, AAC reminds us of LFT (coincidentally, AAC uses the same auditor as LFT did).

Unlike certain schemes that can last indefinitely, Gotham City Research believes that AAC's apparent schemes will come to an end shortly. We believe Apple (and other parties) will conduct their own investigations, and independently come to similar conclusions as we have.

We believe shares will initially decline to 40 HKD - 50 HKD per share, as the undisclosed related party supplier revelations are digested. We see far greater downside potential if the company were to concurrently experience the same problems that other Apple suppliers have in the past, e.g. increased competition, pricing pressure from its customers, wage inflation, etc. In this and coming report(s), we will explain our case for these opinions.

### AAC Gross Margins are Exceptionally High and Smooth – Are Margins Too Good to Be True?

*"When I see a bird that walks like a duck, swims like a duck, and quacks like a duck, I call that bird a duck" – James Whitcomb Riley* 

AAC Technologies Ltd is an Apple supplier based primarily in China. AAC has managed to report exceptionally high and smooth profit margins since 2014, especially when compared against its direct competitors (which sport lower and volatile margins – typical of other Apple suppliers)<sup>1</sup>:

Gross Profit Ma	rgins - AAC	versus Pee	ers
	2014	2015	2016
Goertek	27.4%	24.9%	22.4%
ALPS Electric	18.5%	20.7%	19.7%
Knowles Corp	38.9%	36.8%	38.2%
Merry Electronics	24.1%	19.6%	19.9%
Jinlong Machinery	28.9%	24.6%	11.5%
AAC Tech	41.4%	41.5%	41.5%

Operating Profit Margins - AAC versus Peers					
	2014	2015	2016		
Goertek	15.2%	10.6%	9.5%		
ALPS Electric	4.2%	7.2%	6.8%		
Knowles Corp	14.7%	4.2%	5.5%		
Merry Electronics	11.7%	6.9%	9.7%		
Jinlong Machinery	8.6%	11.8%	3.0%		
AAC Tech	29.2%	29.5%	30.3%		

Net Profit Margins - AAC versus Peers					
	2014	2015	2016		
Goertek	13.0%	9.2%	8.6%		
ALPS Electric	3.0%	5.8%	6.0%		
Knowles Corp	13.1%	1.9%	2.2%		
Merry Electronics	10.1%	5.2%	11.9%		
Jinlong Machinery	9.5%	10.8%	4.0%		
AAC Tech	26.0%	26.5%	26.0%		

AAC profit margins were not always this smooth. The company's margins were less smooth prior to 2014:

			Gros	s Profit Ma	argins - AA	С				
	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Gross profit margin	47.3%	41.7%	44.9%	45.1%	44.0%	44.2%	42.7%	41.4%	41.5%	41.5%
YoY change, bps		-562	321	20	-114	20	-143	-130	8	4

## Extraordinary claims merit extraordinary explanations

What is AAC's secret sauce? Why have AAC's margins been particularly smooth since 2014? In our experience, companies that make extraordinary claims – for example, report exceptionally high and smooth profit margins – are extreme outliers<sup>2</sup>:

Net Profit Margin	s - AAC versus Peers
	2014-2016 average
Google	21.8%
Microsoft	19.4%
Apple	21.9%
Longtop*	26.8%
Quindell**	26.9%
AAC Tech	26.2%
* - 2008-2010	
** - 2010-2013	

## is AAC more like a Google, Microsoft, or Apple – exceptionally good companies:



Or is AAC more like Longtop Financial Technologies or Quindell – fraudulent companies:

**Quindell PLC: A Country Club Built On Quicksand** 





## The company's explanation regarding its "good" margins seems insufficient

In the case of Google, Microsoft, and Apple, their extraordinary feats are apparent. All three companies have changed the world, pushing the human race forward. It is difficult to imagine a world where one of those companies were to suddenly disappear. Can we say the same about AAC Technologies? Is there extraordinary evidence that explains the exceptionally high and smooth profit margins? The company claims that its gross margins can be explained by the following<sup>3</sup>:

The Company is a world-class Total Technology Solution Provider. The Company delivers customer focused solutions across many technology segments. Not only has the Company invested in advanced materials research, product designs and building up intellectual property portfolio, the Company has also invested heavily in manufacturing automation to achieve operational excellence in manufacturing efficiency. <u>The above form the bases of the Company's good gross</u> <u>margins achieved.</u>

Gotham City Research believes that the company's explanations do not sufficiently explain its anomalously high and smooth profit margins since 2014 for the following reasons:

- Evidence of significant undisclosed related party companies. Undisclosed related parties were present in both the Quindell & Longtop Group frauds.
- Additional observations that cast doubt on the company's explanations regarding its profit margins, as we detail later in this report.

## A better explanation: undisclosed related parties & dubious accounting to overstate earnings?

We did, in fact, find extraordinary evidence, but of a different variety. This evidence – which include local filings & field research – suggests that there are at least 20 undisclosed entities are managed and/or owned by associates of AAC's CEO. We summarize below the relationships which the evidence suggests are involved<sup>4</sup>:



The issue with our findings is that the presence of substantial undisclosed related party transactions tends to be symptomatic of companies like Quindell and Longtop Financial Technologies, not good companies such as Google, Microsoft, and Apple.

Local SAIC filings & field research suggest that at least 20 undisclosed entities managed and/or owned by those with direct ties to AAC's CEO (see the next page for a tabular version of the below diagram)<sup>5</sup>:



Company Name (in English)	Company Name (in Chinese)	Product (SAIC Registration Disclosure)	Possible Relationship to AAC
SuQian QjXiang	<b>宿迁启祥</b> 电子科技有限公司	Cell phone components	Manager is assistant to AAC CEO + Colocated with AAC
ShuYang LiSheng	<b>沭阳</b> 丽声电子有限公司	Cell phone components	Shareholders are AAC executive and uncle of AAC CEO
XuanYingTong Electronics	<b>深圳市</b> 轩盈通电子有限公司	Distribution of cell phone components	Manager is uncle of AAC CEO
ZhongBeiTong Magnetic Materials	沈阳中北通磁科技股份有限公司	Magnetic material (for use in electronic components)	Wife of AAC CEO is shareholder and boardmember
LianTai Precision	连泰精密科技江苏有限公司	Cell phone casing	Subsidiary of ShuYang LiSheng
ChangZhou LiSheng	<b>常州</b> 丽声科技有限公司	Cell phone components	Subsidiary of ShuYang LiSheng
iangSu Boruitong	江苏博瑞通磁业有限公司	Magnetic material (for use in electronic components)	Subsidiary of ShuYang LiSheng
WuJing TianMa	<b>常州市武</b> 进天马微电机有限公司	Micro motors, electronic components	CEO family member is shareholder
YangTai Electronics	<b>常州市祥泰</b> 电子有限公司	Electronics components	Uncle of AAC CEO is shareholder
ChangZhou RuiNan	<b>常州瑞南</b> 电子有限公司	Electronic components	Subsidiary of ShuYang LiSheng
GangSheng Packaging	常州市港盛包装材料有限公司	Electronic components and packaging materials	Mother in law of AAC CEO is shareholder
Hao Han Electronics	常州市皓涵电子有限公司	Packaging and machine parts	Sister in law of AAC CEO is former shareholder
DongGuan RuiSheng Electronics	东莞市瑞昇电子有限公司	Electronics components	Shareholders are AAC executive and uncle of AAC CEO
HeSheng Precision	江苏和声精密科技有限公司	Machine parts	Uncle of AAC CEO is shareholder
WuJin Special Electronics	常州市武进特种电子器材有限公司	Electronic machinery and equipment	Father of CEO is shareholder
NingBo NengJie Electronics	<b>宁波市能捷</b> 电子有限公司	Electronic components	Sister of CEO is shareholder
RuiSheng New Resources	<b>瑞声新能源</b> 发展(常州)有限公司	Lithium ion battery research and development	JV between AAC and CEO's father's companies
WuJin Temple Packaging	<b>常州市武</b> 进庙桥万佳包装有限公司	Packaging materials	CEO family member is shareholder
LiBeiTe Special Materials	江苏力倍特种材料有限公司	Electronics materials	CEO family member is shareholder
linLi Packaging	常州市进力特吸塑包装有限公司	Packaging materials	CEO family member is shareholder
WuJin Temple Colored Metals	常州市武进庙桥有色金属铸件有限公司	Metal parts	CEO family member is shareholder
SuQian JinLong	<b>宿迁京</b> 龙电子科技有限公司	Cell phone components including casing	Colocated with AAC and claims to be subsidiary
HuaZhao Electronics	<b>常州市</b> 华兆电子有限公司	Electronic components and earphones	Manager of AAC subs is shareholder

## Are undisclosed associated parties used to offload costs? I of II

## AAC may be using undisclosed entities to offload around 1.5 billion RMB in costs

In this and the next sections, we take a closer look at the evidence that certain parties are related to AAC. We focus on the largest we could identify, per local filings, some of which we list below<sup>1</sup>:

English Company Name	Chinese name	Product (SAIC Registration Disclosure)	Possible Relationship to AAC	Revenue Gro	ss profit	Gross Margin
SuQian QjXiang	<b>宿迁启祥</b> 电子科技有限公司	Cell phone components	Manager is assistant to AAC CEO + Colocated with AAC	553.6	83.1	15.0%
ShuYang LiSheng	沭阳丽声电子有限公司	Cell phone components	Shareholders are AAC executive and uncle of AAC CEO	479.8	10.9	2.3%
XuanYingTong Electronics	深圳市轩盈通电子有限公司	Distribution of cell phone components	Manager is uncle of AAC CEO	348.5	31.8	9.1%
LianTai Precision	连泰精密科技江苏有限公司	Cell phone casing	Subsidiary of ShuYang LiSheng	104.0	n.m	n.m.
ChangZhou LiSheng	常州丽声科技有限公司	Cell phone components	Subsidiary of ShuYang LiSheng	23.8	3.6	15.2%
JiangSu Boruitong	<b>江</b> 苏博瑞通磁业有限公司	Magnetic material (for use in electronic components)	Subsidiary of ShuYang LiSheng	13.1	3.3	25.1%

English Company Name	Employee count
SuQian QiXiang	1,000
ShuYang LiSheng	3,000
Xuan YíngTong Electronics	60
ZhongBeiTong Magnetic Materials	N.A.
LianTai Precision	1,800
ChangZhou LiSheng	100
JiangSu Boruitong	40
Total	6,000

Gotham City Research estimates:

- total exposure to these entities to be at least 1.5 billion RMB.
- Total employee count of these entities to be at least 6,000 employees.
- These entities seem to be owned, managed, and/or controlled by associates of AAC's CEO.
- None of these entities are mentioned in AAC's financial reports.

In this section we will take a closer look at:

- SuQian QiXiang 宿迁启祥电子科技有限公司
- ShuYang LiSheng 沭阳丽声电子有限公司

## SuQian QiXiang 宿迁启祥电子科技有限公司

The evidence suggests that AAC formed SuQian QiXiang at the same time that AAC entered the haptic engine market. AAC may have created this entity to offload the huge development costs that are often associated with a new smartphone launch.

Reasons we believe SuQian QiXiang might be a significant related party/supplier<sup>2</sup>:

- SuQian QiXiang generated RMB 554 million of revenue in 2015, making it one of AAC's largest component suppliers, per our estimates.
- Is estimated to employee ~1000 people.
- The unit specializes in the production of haptic motors & other mobile phone components.
- <u>The company was established in 2015</u>, the same year that AAC began selling haptic motors with anomalously high profit margins relative to its peers.
- SuQian QiXiang describes itself as a division of AAC, yet AAC has never disclosed SuQian QiXiang in AAC's annual reports.
- SuQian QiXiang is owned by 黄勇东/Huang Yong Dong, per local filings. A man by the same name is described as AAC Chairman's assistant.
- AAC hasn't disclosed that the unit seems to be owned by the assistant to AAC's chairman,
- SuQian QiXiang appears to operate within AAC's manufacturing complex.
- SuQian QiXiang reported property, plant, & equipment of RMB 52 million at the end of 2015.
- Its PP&E as % of Revenue is only 10% which is quite low when compared against 85% for AAC and 60% for Goertek. This may imply that AAC books SuQian QiXiang at the parent company level rather than at the SuQian QiXiang level. We believe that AAC's most recent earnings call validates our opinion.
- AAC posted a 50% gross profit margin on haptic motors in 2015 while SuQian QiXiang only earned a 15% gross profit margin on RMB 554 million worth of haptic motor sales to AAC in the same year.

The profit margin discrepancy is particularly surprising given that SuQian QiXiang appears to operate in the same complex as AAC's primary production site in SuYang and produces broadly the same products as AAC.

The below picture shows AAC's production complex<sup>3</sup>:



The below picture shows SuQian QiXiang's lobby inside AAC's production complex:



### In online job postings SuQian QiXiang describes itself as an AAC division

Further questions of a subsidiary-like relationship surfaced on a Jiangsu province job board posting where SuQian QiXiang was listed as a division of AAC<sup>4</sup>:



Another source shows a similar self-description<sup>5</sup>:

8同城	请输入职位名称或公司名称		找工作	发布招聘 登记简历
<b>启祥电子</b> ः₀				
同信息 招聘职位	1			8 举
基本资料				🗄分享到 💽 🙀 👩 💋
注册号:		联系人:	周先生	
法人:		联系电话:	15366933737	
公司性质:上	市公司	企业网址:	http://qy.58.com/41	040341179155/
公司規模: 10	00人以上	公司地址:	宿迁沭阳县长兴路	♀ 查看地图
公司行业: <u>百</u> 导	联网/电子商务、钢铁/机械/设备/重工、电子技/ 体/集成电路	木/半		
公司福利:五陸一金	包吃包住加班补助			
瑞声科技(沭阳)有限:				
2047 1925 10 07 1	~ ~ 公司是AAC 集团在沭阳的分公司,AAC是一家	在香港联交所挂牌上市的国	际性公司,是全球著	著名的电声器件制造商之一,主要生
产手机用微型喇叭、受i	舌器、微型马达、耳机等电声产品。目前已成N	OKIA、三星、摩托罗拉、(	OPPO、索爱、NEC	、苹果、BENQ、Dell等大型知名跨
国上市公司的合作伙伴。	. 公司拥有自己的模具加工中心、注塑车间,最	先进的流水线设备,拥有的	员工7000余人。厂区	配套设施齐全,环境优雅,车间24
	└扩大,特招收优秀人才加盟。包吃住 宿舍有	一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一一	右穴调 环接供单 日	37占购7占 市生体自1小时

SuQian QiXiang owners include 黄勇东/Huang Yong Dong, per local filings. A man by the same name is pictured below at an AAC event. He is described as the Chairman's Assistant<sup>6</sup>:



## Evidence that 黄勇东/Huang Yong Dong's ties run deeper than SuQian QiXiang

CLSA accused Gotham City Research of making "groundless accusations", a few days ago in a research note titled "No alternative facts". One of CLSA's key claims<sup>7</sup>:

In AAC's donation signing ceremony for Peking University, the University website misreported Huang Yong Dong as the assistant to the CEO. Huang was never an employee of AAC.

It is not clear to us what evidence – if any – exists to support CLSA's above assertion. To the contrary, we find the following evidence that shows Huang Yong Dong is in fact tied to  $AAC^8$ :

- 黄勇东/Huang Yong Dong's connection to SuQian QiXiang (as explained in this section).
- 黄勇东/Huang Yong Dong's connection to 连泰精密科技江苏有限公司/Lian Tai Precision, as discussed later in this report.
- 黄勇东/Huang Yong Dong is listed as the legal representative/supervisor of 瑞迅供应链管理(常州)有限公司 a subsidiary of AAC until recently, per local filings.

If Huang Yong Dong was/is not an employee of AAC, why is it that he is listed as the legal representative/supervisor of 瑞迅供应链管理(常州)有限公司, described as a subsidiary of AAC<sup>9</sup>:

股东信息 1	
境内中国公民	姜淑英 (/search/姜淑英.html) 对外投资及任职 (http://app.qixin.com/oper/20161022/index.html)
主要成员 2	
	姜淑英 (/search/姜淑英.html)
理	对外投资及任职 (http://app.qixin.com/oper/20161022/index.html)
监事	<b>黄勇</b> 东 (/search/ <b>黄勇</b> 东.html) 对外投资及任职 (http://app.qixin.com/oper/20161022/index.html)

## 瑞迅供应链管理(常州)有限公司 described as a subsidiary of AAC until October 2016

This entity – which was never disclosed by AAC in its annual reports – was described as a subsidiary of AAC until recently<sup>10</sup>:

5/16/2017	瑞迅供应链管理(常州)有降	限公司电话/地址/法人股东信息一启信宝
变更前		变更后
有限责任公司(台港澳法人)	<u>虫资</u> )	有限责任公司(自然人独资)
2016-10-28 经营范围变更		
变更前 货运代办、货物仓储服务、	货物搬运装卸;新型电子元	变更后 货运代办、货物仓储服务、货物搬运装卸 ; 自营和代理
子元器件简单加工。(不涉 配额、许可证管理商品的,	3易及其他相关配套业务、电 5及国营贸易管理商品,涉及	各类商品及技术的进出口业务,但国家限定公司经营或 禁止进出口的商品及技术除外。(依法须经批准的项 目,经相关部门批准后方可开展经营活动)。
2016-10-28 股东变更变更		
变更前 瑞声声学科技有限公司		变更后 姜淑英

Despite the apparent changes since October 2016, does AAC still exert control and/or influence? We ask this question because the contact email address for this entity is still listed as <u>AAC151@AACTECHNOLOGIES.COM</u>, which is the web domain of AAC<sup>11</sup>:

武进区阳湖西路66号

AAC151@AACTECHNOLOGIES.COM (mailto:AAC151@AACTECHNOLOGIES.COM)

## ShuYang LiSheng 沭阳丽声电子有限公司

The evidence suggests that ShuYang LiSheng, may be a significant undisclosed AAC associate<sup>12</sup>:

- ShuYang LiSheng reported ~RMB480 million of revenue, making it one of AAC's largest suppliers.
- Its operating margin of 2.4% is a tiny fraction compared to AAC's operating margin.
- With only RMB15.6 million of PPE in 2015, its PP&E as a % of revenue is only 3% versus AAC's 85%. Like in the case of SuQian QiXiang, this may imply that AAC books Shuyang Lisheng's PP&E at the parent company level rather than at the SuQian QiXiang level. We believe that AAC's most recent earnings call validates our opinion.
- This separate entity employs about 2,000-3000 people.
- Shuyang Li Sheng is owned by two shareholders. Mr. Li 李翔, a name shared by an AAC

executive, and Pan Shi Nan 潘世南, a name shared by the uncle to AAC's CEO.

- AAC has never disclosed the unit as a related party.
- The unit produces the same products from the same location as AAC and seems to recruit new employees under AAC's banner.
- ShuYang LiSheng has 4 unconsolidated subsidiaries two of which may have links to AAC. One subsidiary, 连泰精密科技江苏有限公司/Lian Tai Precision, will be discussed in detail later.

### A Mr. Li listed as an AAC high level executive in an AAC presentation<sup>13</sup>



ShuYang LiSheng, like SuQian QiXian, appears to be operating within AAC's Shuyang Economic Development Zone, as satellite images show:



LiSheng operates inside of AAC's manufacturing complex

Shuyang LiSheng recruits employees under the AAC banner and descriptions on the web state that ShuYang LiSheng is a subsidiary/division of AAC Tech:<sup>14</sup>

全国[初換城市]     招聘     租房     二手房     车筒     二手     更多 ◆     □     手机赶集     赶集可咚 <b>夏コロ()</b> 巨葉     想找什么? 输入关键字诉试     全职招聘 ~     投资	我要擔广 → 免费注册 会员登录 发布简历 发布职位
沭阳丽声电子有限公司	
联系地址: 沭阳昌南工业园区长兴路 公司简介 单位简介: 瑞声科技(沭阳)科技有限公司是AAC在沭阳的分公司 是一家上市的国际性公司,为全球著名 的电声器件制造商之一,主要生产手机用微型喇叭受话器耳机等,公司连续多年被评为中国电子元件百 强企业。 公司名称: 沭阳丽声电子有限公司 公司规模: 1000-9999人	公司信息 公司名称: 洣阳丽声电子有限公司 联系人: 梁经理(未自常/)底思 远企业管理有限公司) 联系电话: 189 -210.9-5607 公司地址: 江苏賓迁术阳县南工业 园区长兴路
公司行业:生产/制造 公司类型:股份制企业 联系人:梁经理(来自常州城思远企业管理有限公司) 联系电话: 189 -210 9-5607 公司地址:江苏宿迁沭阳县南工业园区长兴路	LiSheng ShuYang Electronics Co.

ShuYang LiSheng's second unconsolidated subsidiary ChangZhou LiSheng may also have links to AAC. A recent job listing describes ChangZhou LiSheng as part of the AAC Group. ChangZhou LiSheng recruits employees under the AAC corporate name<sup>15</sup>:



A local credit report provides further evidence that LiSheng is related to AAC<sup>16</sup>:

### Translation:

- "[LiSheng] is mainly engaged in the manufacture and sale of electronic devices business, its products include micro-speakers, receiver, headphones, vibration motors.
- The target company is an affiliated enterprise of AAC Technology (Suzhou) Co., Ltd. and has passed ISO09001, ISO14001 certification system. Its products are mainly used in mobile phones, computer manufacturing and other industries.
- Target company sells domestically, AAC Technology (Shuyang) Co., Ltd. is responsible for the company's sales activities. Final customers include Samsung, Apple and other brand enterprises.
- Target company procures raw materials domestically, generally in East China."

## Are undisclosed associated parties used to offload costs? II of II

## AAC may be using undisclosed entities to offload at least 1.5 billion RMB in costs

In this section, we continue our examination by looking at other undisclosed related parties. We focus on:

- Xuan Ying Tong 深圳市轩盈通电子有限公司
- ZhongBeiTong Magnetic Materials 沈阳中北通磁科技股份有限公司
- Lian Tai Precision 连泰精密科技江苏有限公司

## Xuan Ying Tong 深圳市轩盈通电子有限公司

We believe Xuan Ying Tong may be a significant undisclosed related party for the following reasons<sup>1</sup>:

- Xuan Ying Tong seems like an AAC distributor of cell phone speakers, receivers, microphones.
- Produces the same products as AAC and even describes itself as part of AAC in public records.
- In 2015, Xuan Ying Tong generated revenues of RMB349 million.
- The entity generated an operating loss, even while AAC generated a best-of-class 27.4% operating margin in the same year.
- Xuan Ying Tong has de minimis property plant and equipment (less than RMB 1 million).
- Pan Shi Nan, (a name coincidentally shared by the uncle to AAC's CEO and is coincidentally tied to several entities mentioned in this report) is described as the unit's general manager.
- For some reason, Xuan Ying Tong generated a loss in 2015 even though AAC simultaneously reported industry leading profit margins.

## 潘世南 Pan Shi Nan: AAC CEO's uncle or just a coincidence?

潘世南 (Pan Shi Nan) is the general manager of Xuan Ying Tong<sup>2</sup>, and as previously mentioned in this report, shares the same name as the uncle to AAC's CEO. Pan Shi Nan seems a very important figure, as evidenced by his extensive involvement in many entities with possible ties to AAC, as shown below<sup>3</sup>:

Company Name (in English)	Company Name (in Chinese)	Product (SAIC Registration Disclosure)	Possible Relationship to AAC
ShuYang LiSheng	<b>沭阳</b> 丽声电子有限公司	Cell phone components	Shareholders are AAC executive and uncle of AAC CEO
LianTai Precision	连泰精密科技江苏有限公司	Cell phone casing	Subsidiary of ShuYang LiSheng
ChangZhou LiSheng	常州丽声科技有限公司	Cell phone components	Subsidiary of ShuYang LiSheng
JiangSu Boruitong	<b>江</b> 苏博瑞通磁业有限公司	Magnetic material (for use in electronic components)	Subsidiary of ShuYang LiSheng
ChangZhou RuiNan	<b>常州瑞南</b> 电子有限公司	Electronic components	Subsidiary of ShuYang LiSheng
XuanYingTong Electronics	深圳市轩盈通电子有限公司	Distribution of cell phone components	Manager is uncle of AAC CEO
YangTai Electronics	<b>常州市祥泰</b> 电子有限公司	Electronics components	Uncle of AAC CEO is shareholder
DongGuan RuiSheng Electronics	东莞市瑞昇电子有限公司	Electronics components	Shareholders are AAC executive and uncle of AAC CEO
HeSheng Precision	江苏和声精密科技有限公司	Machine parts	Uncle of AAC CEO is shareholder

AAC's disclosed related party transactions between the company and family members of the CEO and his wife, as shown in its annual reports, would indicate that if Pan Shi Nan were AAC CEO's uncle, it would expand on a well-established pattern of behavior.

Public sources show that 深圳市轩盈通电子有限公司/Xuan Ying Tong describes itself as part of AAC, despite not being listed on AAC's official subsidiary list<sup>4</sup>:

<b>圳市轩盛电子有限公</b> <sup>新服务: 通信天线</sup>	<b>FJ</b> 产品关键字 搜全到
产品分类	您的位置:深圳市 <b>轩盛电子有限公司 &gt; 企</b> 业简介
品牌策划公司 高新技术企业 企业网站建设 企业宣传片	企业简介
企业logo设计 工业设计公司 翻译公司 音乐喷泉 企业内训 新型温室大棚 企业管理咨询 中小企业名单	深圳轩盛电子有限公司是一家通信产品的企业,与AAC是子公司,是经国家相关部门批准注册的企业。主营喇叭、受话器、咪头、麦克风、耳机、电池、振动马达、天线等,公司位于中国广东深圳市深圳南山区南海大道。轩盛本看"客户第一,诚信至上"的原则,与多家企业建立了长期的合作关系。热诚欢迎各界朋友前未参观、考察、洽谈业务。 金业宜传片 金业logo设计 金业网站建设 营销策划公司 益弊策划公司 高新技术企业认定 翻译公司 企业管理等询
潼关肉夹馍培训 新型化粪池	
	企业基本信息

## ZhongBeiTong Magnetic Materials 沈阳中北通磁科技股份有限公司

Gotham City Research has reason to believe that ZhongBeiTong Magnetic Materials is a significant undisclosed related party for the following reasons<sup>5</sup>:

- ZhongBeiTong Magnetic Materials makes magnetic components for electrical devices that are sold to AAC.
- ZhongBeiTong Magnetic Materials declared itself a related party supplier to AAC.
- Ingrid Wu, one of the unit's main shareholders and board members, shares the same name as the woman who is the wife of AAC CEO Mr. Pan and an AAC board member.
- In contrast, AAC hasn't made the same disclosure in its annual reports.
- The company estimated that it would enter into RMB 150 million worth of transactions with AAC in 2016.
- The unit, is also known as 沈阳中北通磁/Su Yang Zhong Bei.

ZhongBeiTong Magnetic Materials appears to be partly owned by Ingrid Wu, who shares the same name as the woman who is the wife of AAC's CEO and an AAC director. A woman by the name Ms. Wu is also a board member of Su Yang Zhong Bei. The unit has already declared that it's a related party to AAC, according to a local Chinese filing but AAC hasn't made a similar disclosure:

## 2、销售商品/提供劳务关联交易预计

关联人	关联交易类 型	交易内容	交易金额(元)	Related Party
爱发科中北真空(沈阳)有限公司	提供劳务	加工费	100,000.00	
GENERAL MAGNETIC MATERIAL INTERNATIONAL CORP. (台湾八锋企 业股份有限公司)	销售商品	货物	5,000,000.00	-
瑞声科技控股有限公司及其下属公 司(瑞声声学科技(苏州)有限公司、 瑞声科技(沭阳)有限公司、瑞声 光电科技(常州)有限公司、 AAC Technologies VIET NAM CO.LTD.等)	销售商品	货物	150,000,000.00	AAC Technologies Group and subsidiaries

Coincidentally, the CEO's wife's family members are listed as connected persons in AAC's most recent annual report<sup>6</sup>:

#### The Connected Relationship

The relevant parties to the above continuing connected transaction with the Group and a description of their connected relationship with the Group are as follows:

The connected person	The connected relationship
Jiangsu Yuanyu	A company indirectly owned by Mr. Pan Zhonglai, father of Mr. Pan ("Mr. Pan's Father") and Ms. Xie Yufang, mother of Mr. Pan ("Mr. Pan's Mother") as to 51.72% and Mr. Pan's Father as to 48.28%
Shenzhen Yuanyu	A company wholly-owned by Ms. Ye Huamei, mother of Ms. Wu ("Ms. Wu's Mother")
Ms. Ye Huamei	Ms. Wu's Mother
Changzhou LFY	A company owned by Mr. Pan's Father and Mr. Pan's Mother each as to 50%
Changzhou ZKLF	A wholly-owned subsidiary of Jiangsu Yuanyu
Chengdu Yindile	An indirect subsidiary of Jiangsu Yuanyu
HGCJ	A company wholly-owned by Ms. Wu's Mother
Changzhou Yousheng	A company owned by Mr. Pan's Mother as to 30% and Ms. Pan Lijun, sister of Mr. Pan as to 70%
Changzhou Model	A company wholly-owned by Mr. Pan's Father
HVPC	A subsidiary of HGCJ
Chengdu ZKLP	A subsidiary of Jiangsu Yuanyu

## Lian Tai Precision 连泰精密科技江苏有限公司

Gotham City Research has reason to believe that Lian Tai Precision is an undisclosed related party for the following reasons<sup>7</sup>:

- In 2016, Lian Tai generated revenue of RMB104 million and CNY-33.7 million of operating losses.
- Lian Tai is described as employing between 1,800-4,000 people.
- Is supposedly an independent AAC supplier-- AAC has never disclosed the unit as a related party.
- Lian Tai cites Apple as a customer.
- Lian Tai may be owned by the uncle of AAC's CEO.
- Lian Tai could be a prime example of AAC's apparent modus operandi whereby AAC may be using a parallel off balance sheet entities to produce identical products during the ramp stage of production.
- In addition to 黄勇东 Huang Yong Dong and 潘世南 Pan Shi Nan who may have ties to AAC and some of the entities mentioned earlier in this report <u>– there is a man by the name of Sun</u>
   Wenjing (孙文静) who may be connected to AAC as well.

## Remember 黄勇东 Huang Yong Dong and 潘世南 Pan Shi Nan? Coincidences?

Lian Tai is owned by a Hong Kong company called United Land Holdings which is owned by Huang Yong Dong and Pan Shi Nan. As discussed earlier, the former appears to be an employee of AAC and the latter shares the same name as the uncle of the CEO. Both men appear to play critical roles in the entities identified in this report.

Lian Tai was recently transferred by the earlier discussed LiSheng to a Hong Kong entity 裕联集团有限公司/United Land (HK), which is owned by Huang Yong Dong and Pan Shi Nan. (Source: Hong Kong Corporate Filing). United Land ownership file in Hong Kong reveals it is owned again by a person sharing the same as AAC's Assistant to the CEO and the CEO's uncle<sup>8</sup>:

股份類別 Class of S	Shares	Ordinary								
此類別股份的已發彳	行總數 Total Number of Issued	Shares in this	Class	1,00	00					
		J	投份 Share	is						
姓名/名稱 Name	地址 Address	現時持有量 Current Holding	Trai	備註 Remarks						
		Tioloung	數目 Number	日期 Date						
Huang Yong Dong 黄勇東	Room A, 7/F., Building 10, Bihai Yuntian, Qiaocheng East Road, Futian District, Shenzhen City, Shenzhen, China				Address Changed					
Zhang Zunhua 張尊華	5H, Phase 2, Tower 11, Caribbean Coast, Tung Chung, Hong Kong.		5	29.4.2016	To Huang Yong Dong					
Pan Shi Nan 潘世南	No. 30, San Jia Li, Qianjin Cun Wei Qianhuang Zhen, Wujin Qu, Changzhou Si, Jiangsu Province, China.									

## 孙文静 Sun Wenjing appears connected to AAC and Lian Tai: another coincidence?

Like 黄勇东 Huang Yong Dong and 潘世南 Pan Shi Nan, Sun Wenjing appears to be an important figure with respect to several possible undisclosed related parties. He is referred to as a representative/key member of Lian Tai per SAIC registration filings<sup>9</sup>:

法定代表。登记机关	<b>言用代码:</b> 91321322MA1MB( 人:孙文静 : 沐阳县市场监督管理局 :2015年11月26日	QU15			信息分享
基础信息	行政许可信息	行政处罚信息	列入经营异常名录信息	列入严重违法失信企业名单	1(黑名单)信息
<b>类型:</b> 有限责 注册资本:5	<ul> <li>(码: 91321322MA1MBQ1</li> <li>(台港澳法人独资)</li> <li>000.0000000万美元</li> <li>2015年11月26日</li> </ul>		<ul> <li>企业名称: 连泰精密科技江苏有限</li> <li>法定代表人: 孙文静</li> <li>成立日期: 2015年11月26日</li> <li>营业期限至: 2025年11月25日</li> </ul>	( <u>7</u> 9)	
登记状态: 存 住所: 沭阳县 经营范围: 泸		1工件研发、制造、销售;模具开发 5经批准的项目,经相关部门批准后	• 核准日期: 2016年08月02日 、制造;道路普通货物运输;自营和代 访可开展经营活动)	理各类商品及技术的进出口的业	务(国家限定企业
登记状态: 存 住所: 沭阳县 经营范围: 泸	7续(在营、开业、在册) 3经济开发区永嘉路 中压件、钣金件、注塑件、机加 口的商品和技术除外)(依法须	短轻批准的项目,经相关部门批准后	、制造;道路普通货物运输;自营和代		
登记状态: 并 住所: 沭阳县 经营范围: 沪 营或禁止进出	7续(在营、开业、在册) 3经济开发区永嘉路 中压件、钣金件、注塑件、机加 口的商品和技术除外)(依法须	短轻批准的项目,经相关部门批准后	、制造;道路普通货物运输;自营和代 访可开展经营活动)		
<b>登记状态:</b> 祥 住所: 沐阳县 经营范国: 沪 营或禁止进出。 股东及出资信	F续(在营、开业、在册) 是经济开发区永嘉路 时压件、钣金件、注塑件、机加 口的商品和技术除外)(依法刻 意息 股东及出资信息者	逐批准的项目,经相关部门批准后 成止2014年2月28日。2014年2	、制造;道路普通货物运输;自营和代 访可开展经营活动) 2月28日之后工商只公示股东姓名,	,其他出资信息由企业自行公	济.
登记状态: 并 住所: 沐阳县 经营范围: >> 营或禁止进出 股东及出资信 序号	开续(在营、开业、在册) 具经济开发区永嘉路 时压件、钣金件、注塑件、机加 口的商品和技术除外)(依法纲 。 思 股东及出资信息者 股东名称 裕联集团有限公司	延生地推的项目,经相关部门批准后 我止2014年2月28日。2014年2 股东类型	、制造;道路普通货物运输;自营和代 方可开展经营活动) 2月28日之后工商只公示股东姓名, 证照/证件类型 其他	, 其他出资信息由企业自行公 证照/证件号码	济.
登记状态: 千 住所: 沐阳 经营范目: ※ 营或禁止进出 股东及出资信 序号 1	F续(在营、开业、在册) 经济开发区永嘉路 种压件、钣金件、注塑件、机加 口的商品和技术除外)(依法须 意息 股东及出资信息者 股东名称 裕联集团有限公司 共 查询到	短光推的项目, 经相关部门批准后 就止2014年2月28日。2014年2 股东类型 外国(地区)企业	、制造;道路普通货物运输;自营和代 访可开展经营活动) 2月28日之后工商只公示股东姓名, 证照/证件类型 其他	,其他出资信息由企业自行公 证照/证件号码 2143675 下一页 末页	济.
登记状态: 并 住所: 沐阳县 经营范围: >> 营或禁止进出日 股东及出资信 <b>序号</b>	F续(在营、开业、在册) 经济开发区永嘉路 种压件、钣金件、注塑件、机加 口的商品和技术除外)(依法须 意息 股东及出资信息者 股东名称 裕联集团有限公司 共 查询到	短光推的项目, 经相关部门批准后 就止2014年2月28日。2014年2 股东类型 外国(地区)企业	、制造;道路普通货物运输;自营和代 访可开展经营活动) 2月28日之后工商只公示股东姓名, 证照/证件类型 其他	,其他出资信息由企业自行公 证照/证件号码 2143675 下一页 末页	<b>济。</b>

Sun Wenjing is also, coincidentally, referred to as a representative/key member of ShuYang LiSheng (沭阳丽声电子有限公司), a possible significant undisclosed related party we discussed earlier<sup>10</sup>:



主要人员信息		
李翔	潘世南	孙文静
监事	执行董事	总经理

Sun Wenjing is described as representing 'AAC Group' in articles that describe an award ceremony involving a vocational school and AAC Technologies<sup>11</sup>:



商洛职业技术学院院长程诗有(右)向孙文静授牌

How is Lian Tai not a related party, given 孙文静 Sun Wenjing, 黄勇东 Huang Yong Dong & 潘世南 Pan Shi Nan?



商洛职业技术学院院长程诗有(右)向孙文静授牌

**一一与瑞声集团签订校企合作协议。**10月12日,商洛职业技术学院与瑞声集团校企合作签 订暨基地授牌仪式在学院正式举行。该院院长程诗有和瑞声集团连泰公司总经理孙文静互授实习 就业基地和员工培养基地牌匾,该院副院长

郑强与孙文静签订校企合作协议。

签字授牌仪式上,该院机电系主任骞龙江回顾了双方校企合作的历程和基本情况,提出了下 一步工作思路。孙文静介绍了公司规模、生产经营、订单培养等方面具体情况,并就双方如何更 好开展合作进行了说明,表示瑞声公司将进一步发挥在资金、人才和技术上的优势,扩大与学院 校企合作的宽度和深度,走长期合作发展之路。程诗有指出,加强校企合作是学院深化教育教学 改革,走内涵建设发展道路的必然要求,通过双方合作可以起到提高学院教育教学水平、提升学 生生存技能、加快企业发展、帮助贫困户脱贫等多个积极作用,希望瑞声集团能充分发挥自身优 势,以本次校企合作为契机,探寻更为广阔的切入点和合作点,共同将校企合作做大做强。(文 图/张涛)

责任编辑: linshi2



郑强副院长 (右) 代表学院与瑞声集团签订校企合作协议

Translation: Zheng Qiang Vice President (right) on behalf of the Academy and AAC Group signed the cooperation Agreement between schools and enterprises

## More Sun Wenjing<sup>12</sup>



孙文静经理讲话

## Based on a site visit to Lian Tai Precision, Address:

江苏省沭阳县沭城镇经济开发区北园区永嘉路 40 号\_, Lian Tai's factory has the AAC logo on the outside rather than its own name<sup>13</sup>:



It is our understanding that someone in Chinese social media, as well as a Citigroup Asia employee, accused us of photoshopping and/or fabricating the above images. We did not; in fact, AAC in its responses last week seems to have validated our findings, that the AAC logo appeared on those buildings show above. We would not be surprised if more recent claims discrediting us – for example, that "Lian Tai's owner has no relationship with AAC's CEO Pan. He is not a relative, a family member nor an (ex) employee" turns out to be false, as well.

Lian Tai in employment recruiting adverts claims it is one of Apple's partners, clearly using this connection to attract recruits<sup>14</sup>:



We know based on Apple's supplier disclosures, that Apple does not purchase casing from AAC.

Based on additional field research related to Lian Tai, we found:

- All sales inquiries were directed to AAC; Lian Tai does not appear to have a sales department.
- According to the site visits, Lian Tai primarily produces cell phone casings and other cell phone components; Lian Tai began operations in March 2016.
- Local sources allege that Lian Tai may be reliant on AAC for all of its orders.

Please see the Lian Tai Precision-related appendix section for more information.

## Additional inconsistencies we see with AAC's explanations

### The company's explanation for its apparent success

Gotham City Research is skeptical of AAC's explanations as to why its margins are so high, for reasons beyond those described in prior sections.

The company's explanations seem dubious for these additional reasons:

- Free cash flow has been consistently lower than net income since 2007 (only about 24% of profits).
- Despite its highly-touted investment in automation, employee count growth actually exceeded revenue growth from 2013 to 2016.
- Capex vs automation explanation AAC completed the major phase of automation production (in 2012 AR)
- It's unclear how much of an automation edge AAC has over its peers, given that AAC's automation development has been ongoing since 2007, according to Credit Suisse.
- If AAC's margins are as high and smooth as reported, why haven't Apple, Samsung, or other handset makers entered the space and/or vertically integrated to enjoy the cost savings for themselves?
- Boasting about patents IBM has many patents, but is not seen as an innovator.
- AAC's explanations regarding its margin advantage don't explain the quarterly smoothness, even when revenues decline quarter over quarter.

### Free cash flow has been cumulatively only ~25% of net income, since 2007

Since 2007, free cash flow has been cumulatively a tiny fraction of net income. Over the long term, free cash flow is seen by many as a measure of true earnings power. Companies whose free cash flow is consistently lower than its accounting earnings tend to exhibit low earnings quality. The variance between free cash flow and net income does not seem supportive of the company's explanations regarding its "good" margins, even after accounting for growth capital spending (the variance just seems too wide)<sup>1</sup>:

AAC's free cash flow* is consistently lower than net income											
RMB '000	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2007-2016
Free cash flow	-20,552	308,066	604,194	174,025	-280,414	195,092	1,616,442	-194,489	1,402,918	867,742	4,673,024
Net income	548,042	590,603	609,800	987,477	1,032,933	1,756,573	2,571,458	2,310,401	3,110,194	4,024,435	17,541,916
FCF as a % of net income	<0%	52.2%	99.1%	17.6%	<0%	11.1%	62.9%	<0%	45.1%	21.6%	26.6%

\* - we define FCF as cash flow from operations less capex

The above may suggest aggressive accounting 101 for a highflying stock where the internal incentives for management are tied to the stock price and stock liquidity—rather than maximizing cash flow.

# If AAC has invested heavily in automation, why has cumulative employee count growth exceeded cumulative revenue growth since 2013?

Revenue nearly doubled between 2013 and 2016, while employee count more than doubled during the same time period<sup>2</sup>:

Revenue and employees - AAC										
RMB'000	2012	2013	2014	2015	2016					
Revenue	6,282,946	8,095,889	8,879,300	11,738,866	15,506,828					
Employees	26,575	23,011	32,172	35,687	46,396					
Revenue growth		29%	10%	32%	32%					
Employees		-13%	40%	11%	30%					

The company and some Wall Street Analysts have referenced automation as a driver of better margins, yet we see no evidence of improved operational efficiency as gauged by revenue growth per employee growth. In fact, the above table does not include the employee counts of the undisclosed entities we discussed earlier in this report. If we were to combine the employees of those entities, this would cast further doubts regarding the claimed margin advantage AAC enjoys.

Adding further suspicion: in 2013, AAC actually attributed its reduction in employee count (which coincided with an increase in revenue) to the success of its 'ongoing automation programme'<sup>3</sup>:

As at 31st December, 2013, the Group employed 23,011 permanent employees, a reduction from a total of 26,575 as at 31st December, 2012, brought about by the Company's ongoing automation programme.

Using AAC's own implied logic, would this not suggest that AAC's automation programme has failed in its objectives, seeing that employee growth since then has exceeded revenue growth? How did margins remain so high and smooth since 2013?

How is AAC's automation superior to its peers if SG&A + R&D spending per employee is a fraction of its peers?<sup>4</sup>

SG&A* per employee - AAC vs peers							
USD '000	2016						
ALPS Electric	23.4						
Jinlong Machinery	35.2						
Knowles Corp	14.9						
AAC Tech	6.3						
* - including R&D expense							
2016 average exchange rates:							
USD/CNY	6.64						
USD/JPY	107.76						
USD/TWD	32.25						

# If AAC's automation development began in 2007, what has kept its competitors or customers from simply replicating their "secret sauce"?

According to Credit Suisse, AAC's "proprietary automation" development began in 2007<sup>5</sup>:

CREDIT SUIS	21 May 2012			
Prop	rietary	automation	drives	
earni	ngs si	ustainability		
with AAC's M facility, as we with 95% in (Changzhou	/P of operation ell as the in-hou n-house manu , Suzhou, Shu	turing plant in Changzhou pos ns and visited three main manu- use tooling factory. AAC adopts facturing capability with four yang and Shenzhen). The ris lements) are increasing margin	ufacturing lines in its Changz s a vertically integrated appro major manufacturing facili ing cost of Chinese labour	hou mitigates rising cost pach pressure ities
AAC embar development control and s micro-acoust	ked on produ t, AAC now e software resea tic products wh	sistency of its product quality a ction automation developme mploys a professional team i rch and owns proprietary autor ich were successfully applied in on facility profile	nt since 2007. After years n structural design, automa mation equipment technology	tion
Plants	Province	Productions	Production automation	Comments
Changzhou	Jiangsu	Speakers, receivers, vibrators	Semi / lean / full - automation	Low-mix high-volume acoustic products
Shuyang	Jiangsu	Speakers / receivers	Non-automated	High-mix low-volume acoustic products
Shuyang				
Suzhou	Jiangsu	Lenses	Semi-automation	High-end optics production

Source: Company data

What has kept AAC's competitors and/or the Apple, Samsung, etc. of the world, from achieving the same margins as AAC? The margin variance, recall, is quite dramatic<sup>6</sup>:

Net Profit Margins - AAC versus Peers							
	2014	2015	2016				
Goertek	13.0%	9.2%	8.6%				
ALPS Electric	3.0%	5.8%	6.0%				
Knowles Corp	13.1%	1.9%	2.2%				
Merry Electronics	10.1%	5.2%	11.9%				
Jinlong Machinery	9.5%	10.8%	4.0%				
AAC Tech	26.0%	26.5%	26.0%				

Operating Profit Margins - AAC versus Peers			Gross Profit Margins - AAC versus Peers				
	2014	2015	2016		2014	2015	2016
Goertek	15.2%	10.6%	9.5%	Goertek	27.4%	24.9%	22.4%
ALPS Electric	4.2%	7.2%	6.8%	ALPS Electric	18.5%	20.7%	19.7%
Knowles Corp	14.7%	4.2%	5.5%	Knowles Corp	38.9%	36.8%	38.2%
Merry Electronics	11.7%	6.9%	9.7%	Merry Electronics	24.1%	19.6%	19.9%
Jinlong Machinery	8.6%	11.8%	3.0%	Jinlong Machinery	28.9%	24.6%	11.5%
AAC Tech	29.2%	29.5%	30.3%	AAC Tech	41.4%	41.5%	41.5%

## AAC's "margin advantage" explanation does not explain margin smoothness amidst seasonality

As shown below, AAC's quarterly revenue declines, quarter over quarter, from Q4 to Q1. How is that margins remain rather resilient?<sup>7</sup>

RMB '000	Q4 2013	Q1 2014
Revenue	2,181,953	1,854,007
QoQ % change		-15.0%
Gross margin	42.8%	40.2%
Operating margin	30.8%	29.6%
Net margin	27.6%	26.2%
RMB '000	Q4 2014	Q1 2015
Revenue	3,098,894	2,304,711
QoQ % change		-25.6%
Gross margin	41.1%	41.5%
Operating margin	28.6%	28.5%
Net margin	25.4%	26.2%
RMB '000	Q4 2015	Q1 2016
Revenue	3,848,260	2,544,746
QoQ % change		-33.9%
Gross margin	41.4%	40.5%
Operating margin	28.9%	26.7%
Net margin	26.3%	24.3%
RMB '000	Q4 2016	Q1 2017
Revenue	5,736,578	4,215,065
QoQ % change		-26.5%
Gross margin	41.7%	41.6%
Operating margin	32.3%	30.0%
Net margin	27.4%	25.2%

## Valuation

### Why we believe shares are worth no more than 40-50 HKD per share

We use two different methodologies for the purpose of valuation:

- 1. Free cash flow as a more accurate measure of earnings.
- 2. Adjusting AAC's earnings for possible offloading of costs via the undisclosed related parties.

### Free cash flow approach implies up to -70% downside

Free cash flow has consistently been a small fraction of reported earnings, and over a long time horizon<sup>1</sup>:

AAC's free cash flow* is consistently lower than net income											
RMB '000	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2007-2016
Free cash flow	-20,552	308,066	604,194	174,025	-280,414	195,092	1,616,442	-194,489	1,402,918	867,742	4,673,024
Net income	548,042	590,603	609,800	987,477	1,032,933	1,756,573	2,571,458	2,310,401	3,110,194	4,024,435	17,541,916
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\* - we define FCF as cash flow from operations less capex

### Assumptions:

- Let's be conservative and use 5.32 HKD per share (which is on the high end of consensus estimates) as our estimate for 2017 EPS.
- We believe that AAC's true earnings is closer to 25% of whatever earnings is reported, given the historical variances between free cash flow and earnings as shown above.
- 25% of 5.32 HKD per share implies a true earnings power of around 1.33 per share.
- If we apply a 20x-30x P/E multiple we arrive at a measure of intrinsic value closer to 27-40 HKD per share, implying significant downside (up to -70% downside) from current market prices.

## Adjusted earnings approach implies shares are worth around 40-50 HKD per share

We believe investors may have failed to take account for what appears to be suspect accounting based on our findings discussed earlier in this report; specifically, we estimate that at least RMB1.5 billion of costs might be off AAC's books. We make the following adjustments:

## Adjustments/assumptions:

- 40% of the revenues come from haptics and 60% come from acoustics & other.
- AAC's revenue will grow 24% this year.
- We applied operating margins of 12%-15% (using Goertek and Nidec's margins as proxies); this is the adjustment factor for the suspect behavior we flagged in this report.
- We use a 20x-25x P/E multiple for 2017 to arrive at a stock price of HKD 41/share based on a 0.886 Chinese yuan to Hong Kong dollar foreign exchange rate.

We do not penalize AAC for possible competitive pressures and threats, as other Apple suppliers have faced; shares would be worth meaningfully less than 40-50 HKD per share, if AAC were to face such threats.

## APPENDIX

## Lian Tai Precision Field Research

连泰精密科技江苏有限公司

江苏省宿迁市沭阳县经济开发区永嘉路 40 号

\*\*下图即为连泰精密科技江苏有限公司的工厂如图所见厂区内只有三个大的厂房(车间)

因为每个厂房的长度都超过了两百米以及工厂周围的树木遮挡我很难对其整体拍照

\*\*这里的工人告诉我这个工厂是归江苏鸿利达铝业有限公司所有的 现在连太精密科技有限公司只是租用了鸿利达的厂房几年(可能是出于节约成本的考虑)而之所以连泰会租用鸿利达的厂房是因为鸿 利达经营不善几乎倒闭

因为我无法进入厂内 所以只能绕厂一周 拍摄照片



在厂房的墙壁上你能看到"瑞声科技"四个大字也就是 AAC 集团的中文名称

我认为连泰精密之所以没有把它们的名字印在厂房墙壁上是因为现在这个工厂还不归他们所有但是我认为这也足以证明这个工厂现在是瑞声的分厂







一些远景拍摄你可以看到这只有三个车间且每个车间长度都超过了 200 米





关于为什么我可以确认这里就是连泰精密工厂

这是因为我有在网络上查看他们的招聘信息上面有写他们的详细地址

链接如下

http://qy.58.com/13599122782215/

招聘信息写到连泰精密工厂位于沭阳县经济开发区永嘉路 40 号

而下图中门卫室墙壁上的蓝色标牌也写着永嘉路 40 号

图片不是特别清晰 是因为那里门卫太多我无法太靠近

同时我也跟附近的居民以及工人确认过这个工厂就是连泰精密



## **END NOTES**

## Introduction

- 1. <u>https://www.wsj.com/articles/apple-watch-faulty-taptic-engine-slows-roll-out-1430339460</u>
- 2. Company filings, Bloomberg, and/or CapitalIQ
- 3. ""
- 4. AAC analyst reports, AAC earnings call(s).
- 5. OLP Global

## Does AAC Use Undisclosed Related Parties to Inflate Profits?

- 1. Company filings, Bloomberg, and/or CapitalIQ
- 2. ""
- 3. AAC's recent further clarification announcement
- 4. SAIC registration filings and field research
- 5. ""

### Are undisclosed associated parties used to offload costs? I of II

- 1. SAIC filings and/or other local filings, field research, and job/web postings
- 2. SuQian QiXiang SAIC filings and/or other local filings, field research, and job/web postings
- 3. Field research
- 4. <u>http://www.jsrsrc.com/jobs/jobs-show.php?id=151444</u>
- 5. <u>http://qy.58.com/41040341179155/</u>
- 6. <u>http://school.freekaoyan.com/bj/pku/dongtai/2016/05-09/1462778832588693.shtml , cached</u> <u>version</u> via baidu
- 7. CLSA research note titled, "No alternative fact"
- 8. SAIC registration filings
- 9. ""
- 10. ""
- 11. ""
- 12. ShuYang LiSheng SAIC filings and/or other local filings, field research, and job/web postings
- 13. <u>http://wenku.baidu.com/link?url=q8yrrb3mMzwM82q2d89Lvy\_YDTenWOJWBzOad\_3iE5n9RPo</u> Y2MryX0MpPdmjhFLskb1sikg\_VerajiH-VUI07KRoPKLNyg5oTxVKMJDVWdO
- 14. http://www.ganji.com/gongsi/117332/?agentCompany=34148599
- 15. http://cz.58.com/zpshengchankaifa/26340670025267x.shtml
- 16. Local filings

## Are undisclosed associated parties used to offload costs? II of II

1. Xuan Ying Tong related SAIC filings and/or other local filings, field research, and job/web postings

- <u>http://www.tianyancha.com/human/2054184456/%E6%BD%98%E4%B8%96%E5%8D%97/1459</u> 914286?hbase=gd
- 3. Various SAIC filings and/or other local filings, field research, and web postings
- 4. <u>http://scsxsdzschsxsdzscshixsdzscsxuansdz.cn.biz72.com/introduction/</u>
- 5. ZhongBeiTong Magnetic Materials related SAIC filings and/or other local filings, field research, and job/web postings
- 6. AAC Technologies Annual Report 2016
- 7. Lian Tai Precision related SAIC filings and/or other local filings, field research, and job/web postings
- 8. Hong Kong filing
- 9. Lian Tai SAIC registration filing
- 10. ShuYang LiSheng SAIC registration filing
- 11. http://www.qnr.cn/news/2016/201610/1217782.html
- 12. <u>http://www.slzyjsxy.com/show.php?id=1535&cid=86</u>
- 13. Lian Tai field research
- 14. http://www.ganji.com/gongsi/39433977/?rec\_platform=ganjicom\_pg

## Additional inconsistencies we see with AAC's explanations

- 1. AAC annual reports
- 2. ""
- 3. AAC 2013 annual report
- 4. Various company filings
- 5. Credit Suisse research report
- 6. Various company filings
- 7. AAC quarterly releases

## Valuation

1. AAC annual reports