

HEARING THE FUTURE

- **Nuheara Limited (NUH)** has created a class leading wireless and noise augmenting 'smart' earbud, called the IQbuds™. The IQbuds™ are at the forefront of the growing Hearables market (smart Wearables for your ears) which has gained traction since the launch of Apple's wireless earbuds, the AirPods. The Company is fast approaching a major inflection point, with the expanded global roll-out of its hearable product suite. We believe the Company to be well-positioned to ramp up sales and revenue in the near-term, but believe that traction and a significant jump in sales is needed to justify the current market capitalisation. NUH will also likely need to return to market within the next 6 months for cash, and thus should be priced cum-raising. We initiate with a HOLD recommendation.
- **Overview of the IQbuds™:** NUH's first commercial product is a smart wireless earbud, called IQbuds™, which allows the user to 'hear what they want to hear' using processing techniques designed to blend the outside world with the ever expanding digital world. The IQbuds™ provide the consumer with a product that incorporates an assisted listening device (akin to, but not classified, as a hearing aid device), a Bluetooth earplug and a noise cancelling headset all in the one product. IQbuds™ currently sell for AS\$399 and consist of 2 IQbuds™ (ear-buds); a carrying case/charging unit; and the Nuheara app (iOS & Android platforms).
- **The Hearables Market:** As Wearables technology evolves from the wrist to clothing and other parts of the body, the Hearables segment (Wearables worn on or in the ear) has been forecast to grow at an accelerated rate. The Hearable segment is estimated to become the largest part of the Wearable market by 2020, and account for US\$16 billion (over 50%) of the Wearable market. The Hearables market is mainly made up of wired headphones that are used for health and fitness applications (eg heart rate monitors). The addition of "smart" noise augmenting capabilities, which NUH provides, is only now being introduced to the market.
- **Differentiation from the Competition:** We believe NUH is in direct competition with smart hearables companies including: Jabra Elite, Bragi (Dash) and the new Bose hearable; and in indirect competition with wireless earbud producers: Apple (Airpods) and Samsung (Gear Icon X). We believe the IQbuds™ may be a superior product given the hearing and sound augmentation capabilities, differentiating itself from its competitors. Additionally, the battery life is inline with competitors, and importantly, it has outlasted the now-deceased Here Ones (which is a direct hearables competitor) from bankrupt Doppler Labs.
- **Growing product suite:** NUH expanded its product offering by releasing IQbuds BOOST™, a world-first multifunctional hearing bud solution featuring our clinically validated proprietary Ear ID™ hearing assessment. NUH also continues to develop its third product, LiveIQ™, which is the world's first hybrid Active Noise Cancellation hearing bud. The latter will be rolled out in the upcoming quarter.
- **Further cash needed for commercialisation pipeline:** As at 30 September 2018, NUH had cash on hand of \$5.0m. Thus, given a quarterly operating cash outflow of \$2.5m and the cash received from the R&D rebate, we anticipate NUH should have c\$4.5m in cash at end December 2018. Given the current burn, NUH may need to return to market for additional funding within the next 6 months.
- **Hands on with the IQbuds™:** We have tested a pair of IQbuds™ and were very impressed by the product. They fit comfortably in the ear, and have multiple attachments to fit most ear shapes and sizes. Once in ear and calibrated, background noise was significantly muted yet Justin Miller's (CEO) voice was clear and amplified. The touch controls were simple to use, allowing me to flip between pre-set profiles and easily change the level of noise augmentation and even switch to music.

26 November 2018		
12mth Rating	HOLD	
Price	A\$	0.079
RIC: NUH.AX	BBG: NUH AU	
Shares o/s	m	891.5
Free Float	%	65.0
Market Cap.	A\$m	69.5
Net Debt (Cash)	A\$m	(5.0)
Net Debt/Equity	%	na
3m Av. D. T'over	A\$m	0.45
52wk High/Low	A\$	0.14/0.04
Analyst: Jon Scholtz		
Phone: (+61 8) 9225 2836		
Email: jscholtz@psl.com.au		

An investment in this company should be considered speculative and note assumptions employed are contingent on broader market conditions remaining supportive. These can change at short notice. Recommendations are current at the time of publication.

12 Month Share Price Performance

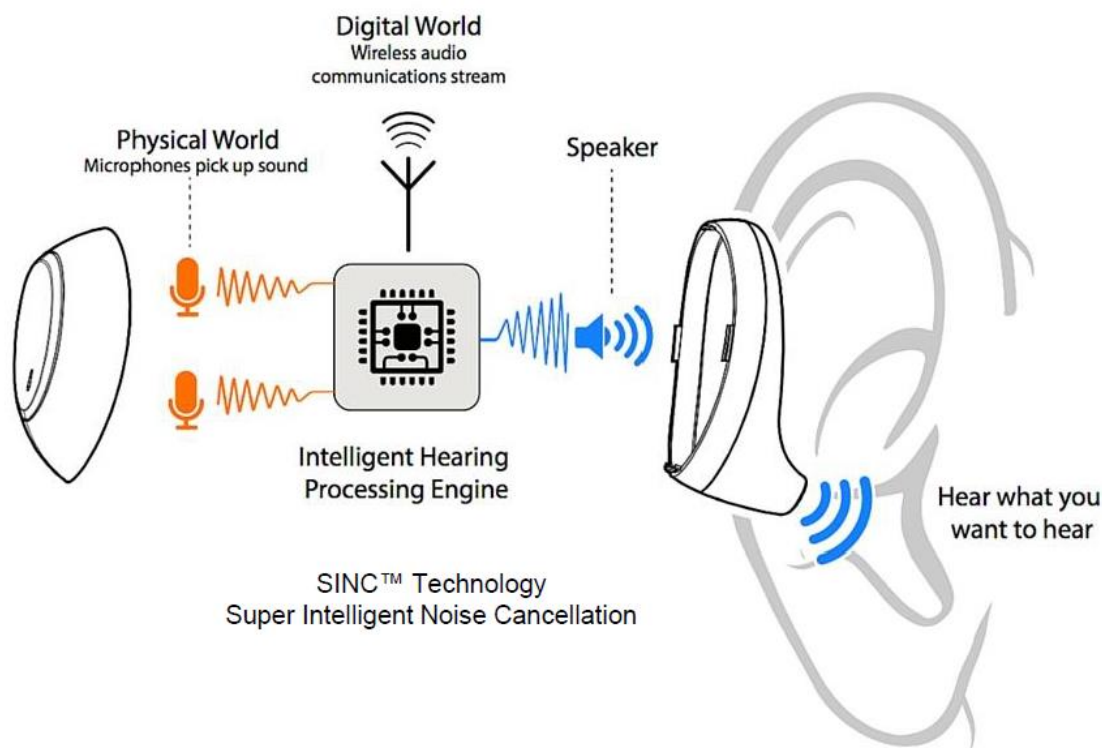


COMPANY OVERVIEW

Nuheara Limited (NUH) has developed and is in the process of commercialising its wireless 'wearable' hearing device/earbud, the IQbuds™. NUH proprietary hardware and software allows the user to augment the hearing experience between their physical and digital worlds using the wireless earbuds connected to smart devices. The Company is venturing into an emerging and rapidly growing segment of wearables technology, called Hearables.

NUH was founded in Perth, Western Australia and has its technology development headquarters at Curtin University. It has also established a presence in San Francisco, being based inside Wearable World, one of the world's largest wearables incubators.

Figure 1: IQbuds™ Augmentation of Physical and Digital Worlds



Source: Nuheara Limited

PRODUCTS

NUH's first commercial product is a smart wireless earbud, called IQbuds™, which allows the user to 'hear what they want to hear' using processing techniques designed to blend the outside world with the ever expanding digital world. This includes augmenting ambient noise in certain environments to enhance the listener's smartphone's music/hearing experience while still being aware of your external surroundings.

NUH retails its IQbuds™ for AU\$399, and started shipping to the USA, Canada, Australia and New Zealand in the June Quarter of 2017 via its online channel. NUH completed the shipping of backorders and early backers from the indiegogo crowdfunding campaign in 2017 and subsequently moved into big box retailing. NUH now sells globally online and via retailers.

NUH expanded its product offering by releasing IQbuds BOOST™, a world-first multifunctional hearing bud solution featuring the clinically validated proprietary Ear ID™ hearing assessment, utilising industry-recognised NAL-NL2 for hearing aids. This product launch was a direct result of NUH's foresight and ongoing commitment to research and development in hearing intelligence and its strategic partnership with HEARing CRC and National Acoustics Laboratory. The initial production run of 2,500 units sold out in the first six weeks of sale.

Figure 2: IQbuds™ sales



IQbuds

AU\$399.00

or 4 payments of AU\$99.75!
Choose afterpay[®] at payment.

★★★★☆ 204 reviews

IQbuds™ are intelligent, truly wireless earbuds that give you control to hear what you want to hear in the world around you and connect to your digital devices.

FEATURES

-  High Fidelity Audio
-  Dynamic Noise Control
-  Speech Amplification
-  Blended Audio Worlds

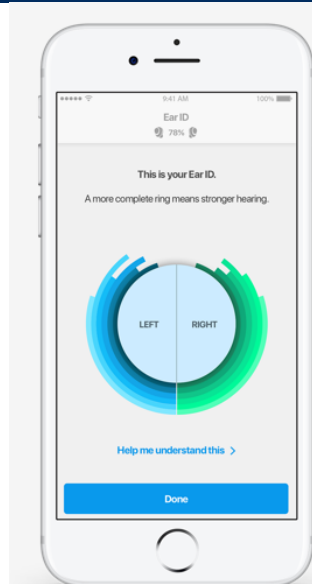


Source: Nuheara Limited

NUH also continues to develop its third product, LiveIQ™, which is the world's first hybrid Active Noise Cancellation hearing bud. LiveIQ™ has been developed in partnership with the global leader in the design and manufacture of advanced sensor solutions, ams AG.

The Company has set a new standard in upgradable truly wireless earbuds by giving customers enhanced functionality with a simple firmware upgrade, coupled with an App upgrade to their smart device. During the year NUH introduced an industry first upgrade, including Custom Tap Touch, that delivers powerful levels of personalisation and customisation features for new and existing users of IQbuds™. The upgrade also delivered improved wind noise reduction, reducing microphone thumping and improving speech clarity in windy conditions.

Figure 3: IQbuds™ pre-order



SELF FIT

Using the App, Ear ID™ measures your hearing thresholds to create your own personal profile.



SELF ASSESS

Ear ID™ analyzes your hearing thresholds using a prescription formula (NAL-NL2) used by audiologists everywhere.



AUTO CALIBRATE

Ear ID™ calibrates your IQbuds™ to accurately reflect your personal hearing profile.

Source: Nuheara Limited

NUH has developed the IQbuds™ to provide the consumer with a product that incorporates an assisted listening device (akin to, but not classified, as a hearing aid device), a Bluetooth earplug and a noise cancelling headset all in the one product. The idea of augmented audio is highly complementary to augmented and virtual reality, which is currently a hot technology movement.

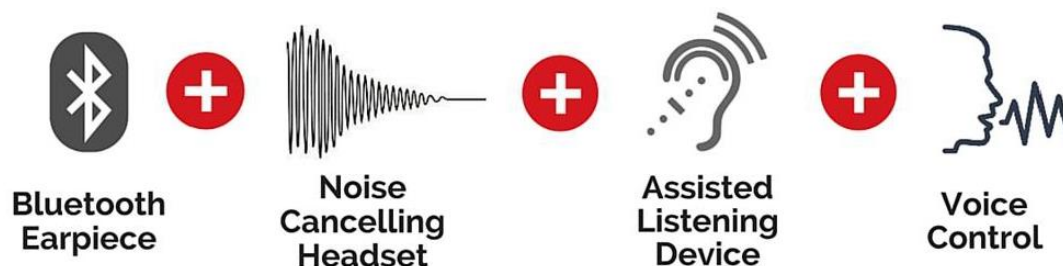
The first retail skew of NUH and its IQbuds™ will consists of the following components:

- 2 x IQbuds™ (ear-buds);
- carrying case/charging unit; and
- Nuheara app (iOS & Android platforms).

Current features of the IQbuds™ include:

- **Noise reduction:** leveraging noise reduction techniques, the ear-buds will provide the ability to switch to noise reduction to allow users to enjoy audio streams by suppressing background noise.
- **Awareness control:** utilising multiple external microphones, this feature will allow users to be aware of their external surroundings; essentially augmenting ambient sounds.
- **Tap touch control:** NUH's electronic tap touch controls will allow users to control the IQbuds™ range of features. This is designed to include such functions as: powering on/off, answering phone calls, starting/stopping noise reduction or music, and switching between physical and digital worlds.
- **Hearing boost:** leveraging audio technology and the digital signal processing experience of the Curtin and NUH teams, multiple microphones and processing techniques are used to provide the user with the ability to hear more clearly in challenging consumer environments. This augments ambient and surround sound to boost selective audio channels to allow for better hearing.
- **Hands-free calls:** utilising NUH's chosen Bluetooth processor which is incorporated from third party providers, combined with the IQbuds™ Bluetooth capabilities enables hands-free phone calls.
- **Stereo music:** stereo sound quality for music, podcasts, audiobooks and other audio streams is available utilising the same Bluetooth processor above. Each IQbuds™ can be individually tuned to provide the best hearing experience.
- **Personalised hearing:** based on pre-programmed hearing profiles, NUH has created an app to allow the user to control and save their hearing settings from their smartphone based on their individual hearing preferences.
- **Modern and comfortable design:** NUH has engaged extensive third party industrial design in the development of ear-buds. The IQbuds™ fit comfortably in almost any ear shape, and come with a wide array of earplugs, and the sleek look is set to appeal to consumers' preferences.
- **Internal battery life:** The IQbuds™ currently have a single charge battery life of up to 4 hours, and boasts a 1 hour charge time.
- **Convenient charging case:** NUH has also created a convenient storage and charging case which has been designed to be small enough to fit in a user's pocket or purse. The case has its own internal battery which allows charging of the IQbuds™ on-the-go; currently up to 4 charges, extending the life of the IQbuds™ to 16 hours.

Figure 4: IQbuds™ features



Source: Nuheara Limited

MARKET OVERVIEW

NUH operates in the smart wireless earbud/earphone market, leveraging off its augmented environment technology. This consists of a hybrid of the wireless headphone market and the hearing aid market. NUH should be able to take a segment of both these markets, while carving out a niche market for itself in the area these two markets overlap.

As Wearables technology evolves from the wrist to clothing and other parts of the body, the Hearables segment (Wearables worn on or in the ear) has been forecast to grow at an accelerated rate.

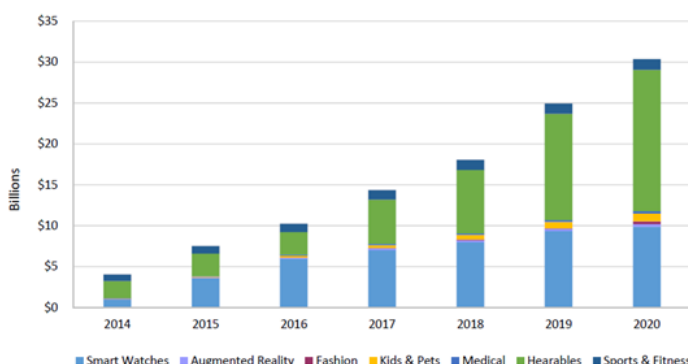
Being an early-stage business on its path to commercialisation, NUH currently holds no market share. However, NUH's intended multi-functionality has the potential to initially impact the headphone market via retail consumers, which is estimated to be worth US\$9 billion per annum.

The current size of the smart Wearables market is estimated to be US\$10 billion, and is forecast to grow to over US\$30 billion by 2020. The Hearables market is currently estimated to be 30% of this market, and is mainly made up of wired headphones that are used for health and fitness applications (eg heart rate monitors).

However, the Hearable segment of this market is estimated to become the largest part of the Wearable market by 2020, and account for US\$16 billion (over 50%) of the Wearable market. Notably, Hearables are expected to evolve to become wireless and possess an on-board processor (computer). This should allow Hearables to not be tethered to smartphones and thus be smart devices in their own right, thus becoming more than just an accessory.

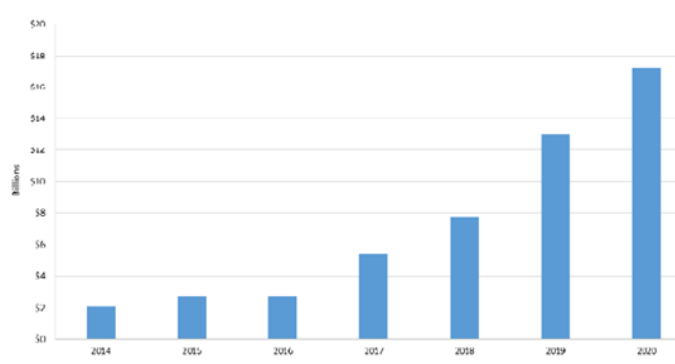
IQbuds™ are already wireless and have an on-board processor, although not nearly as powerful or capable as a smartphone yet, which should position NUH and the IQbuds™ as leaders in the evolving Hearable market.

Figure 5: Wearables Market



Source: Wearable Future Report

Figure 6: Hearable Market



Source: Hearable World

NUH intends to be a best-of-breed hearing platform in a voice-enabled world and intends to work closely with the software development community to facilitate the strong growth of voice-recognition solutions to improve people's lives. Utilising proprietary audio technology and world-class industrial design, NUH's objective is to be a leading brand in the Hearables market by enabling consumers "to hear what they want to hear" and provide a foundation for Hearables to be a significant part of the global Wearables market.

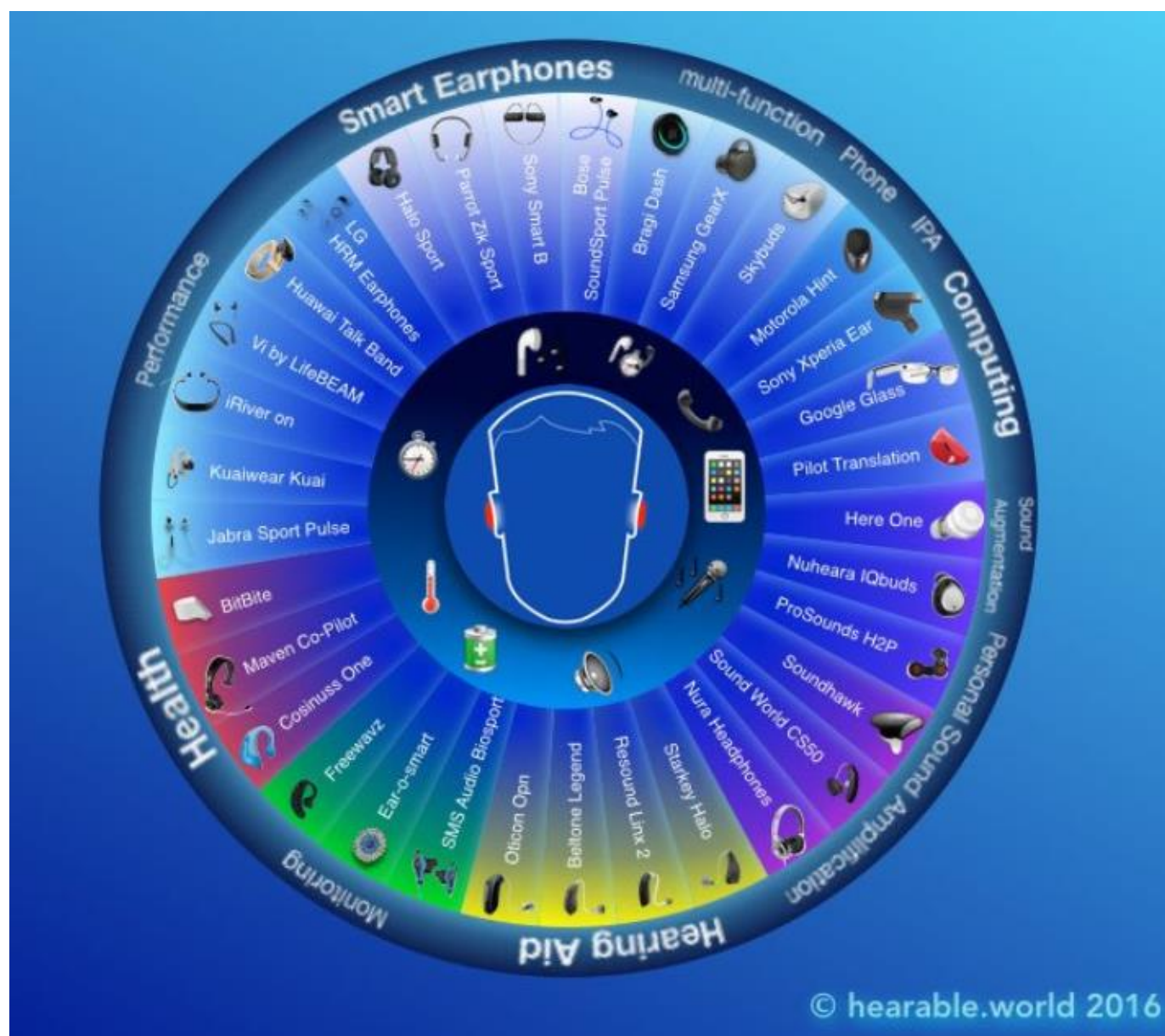
Wireless smart airbuds are expected to be premium products, however this is the segment expected to grow the most in terms of hearables and headphones and is expected to grow to shipments of over 110 million devices in 2020.

COMPETITION

NUH operates in the smart Hearables market, and is focused on the intersection between smart Wearables, wireless earbuds and hearing-aid devices. This is an emerging segment of the market, but already has numerous established headphone makers and some start-ups tussling for market share. We believe NUH is in direct competition with smart Hearables companies including: Jabra Elite, Bragi (Dash) and the new Bose hearable; and in indirect competition with wireless earbud producers: Apple (Airpods) and Samsung (Gear Icon X).

We do note that the Headphone market is very large with a long list of competitors and some very unique niches. This is shown in Figure 7 below.

Figure 7: Headphone Market



Source: Hearable World

- **Headphone and headset manufacturers:** Headphone and headset manufacturers market audio listening products to a wide range of users. These companies have broad product portfolios including consumer recreation-orientated headphone products; and consumer and enterprise headset products. These companies have broad, established distribution channels that have global reach and in the past have regularly released new products to market. These include Bose, Sennheisser and Beats.
- **Wireless earbuds:** These manufacturers include small start-up companies that have announced wireless ear bud products but have not yet completed development or commercialisation of their products; and established hardware producers expanding their hardware suite. Typically these companies market products that are not yet developed or available with the intention of developing the product if a pre-sales campaign is successful. This includes Nuheara, Jabra Elite, Bragi, Bose, Apple and Samsung.
- **Assisted listening device manufacturers and providers:** Assisted listening device companies offer products to assist hearing in specific scenarios such as watching TV or listening in a noisy social setting. These companies employ a wide range of channels and techniques to reach end users.
- **Hearing Aids:** These are the established companies which offer higher end products designed from a medical need to improve hearing. The market is dominated by only a few companies, and can afford to charge a large premium for the hearing aids as they are mostly classified as medical devices and are seen as a need by consumers.

Figure 8: Peer comparison

PRODUCT	HEARING PROCESSING?	BATTERY LIFE (SINGLE CHARGE)	BATTERY LIFE (ON-THE-GO)	BATTERY RECHARGING SPEED	INFO SOURCE:
IQbuds	Yes	4 Hours	16 Hours	1 Hour	Nuheara.com
Here One by Doppler Labs	Yes	2 Hours	8 Hours	1 Hour	HerePlus.me
Bragi Dash	No	4 Hours	24 Hours	2 Hours	Bragi.com
Jabra Elite Sport	No	3 Hours	9 Hours	2 Hours	Jabra.com (PDF download)
Samsung Gear IconX	No	1.5 Hours	3 Hours	Not verified	ZDnet.com (battery life data not found on Samsung website)
Apple AirPods	No	5 Hours	24 Hours	25 Minutes	Apple.com

Source: Nuheara Limited

As shown in Figure 8 above, NUH's IQbuds™ are superior to its direct and indirect competitors in the wireless earbud and Hearables market in terms of capabilities and battery life. The IQbuds™ are classified as a "smart" device given its hearing and sound augmentation software, differentiating itself from the likes of Apple's AirPods and Samsung's Gear Iconx. Additionally, the battery life is inline with competitors, and importantly, it has outlasted the now-deceased Here Ones (which is a direct hearables competitor) from bankrupt Doppler Labs.

We feel these points of differentiation should be appreciated by the consumer, and thus enable the IQbuds™ to be established as a leader in the new and growing Hearables segment.

RECENT ACHIEVEMENTS

NUH attended the Consumer Electronics Show (CES) in Las Vegas, where it received “Best for Innovation” and “Best of CES” awards. The CES show is the largest consumer electronics and technology trade show globally. The exposure and awards gained at the show are a positive for NUH, as some of the leading consumer electronics, like Fitbit, were in this same position when launching.

NUH continued to deliver on its commitment to establish quality global distribution and retail partnerships with aggressive growth in brick and mortar and online retail. Expansion in Europe featured deployments to retailers including Harrods, Selfridges, Elkjop and Media Markt. Dubai based GR Media Solutions was appointed as a distributor and will supply premium retail outlets in the Middle East, including Virgin Megastores, Dubai Duty Free, HMV and iStyle. Force Technology was appointed as a key distribution partner to service Australia and New Zealand, with more than 4,000 reseller partners including Telstra, Harvey Norman, Optus, Retravision, JB Hi-fi and Officeworks. Value Trade was appointed as a key distribution partner in Japan, a renowned and experienced consumer electronics distributor that currently supplies more than 5,000 consumer electronics retailers. Product continues to be sold in leading USA retailers such as Best Buy, Brookstone and Amazon.

In March 2018, NUH announced the Group’s successful registration as an approved supplier to the Australian Governments Hearing Services Program (HSP). The HSP provides eligible Australians access to free and subsidised hearing devices and services. In the 2017-18 Federal budget the HSP was allocated \$539m. The Group will place both IQbuds™ and IQbuds BOOST™ on the Device Schedule as Assisted Listening Devices (ALD). The registration of NUH as a supplier to the HSP is a significant development for the Group, demonstrating its innovated hearing solutions have been recognised as a cost-effective options by the Australian Government

NUH also recently announce the extension of its global hearing healthcare reach to the Republic of Ireland with the appointment of Hidden Hearing. Hidden Hearing is Ireland’s leading provider of hearing healthcare with a national network of 75 branches and clinics. With onboarding and training now complete, IQbuds BOOST™ will be available in 61 of these clinics by December 1, 2018.

Figure 9 IQbuds™ Retailers



Source: Patersons Securities Limited

RISKS/CATALYSTS

Risks

- **Technology:** NUH may be adversely affected by rapid macro changes in technology that renders its IQbuds™ obsolete. NUH is also exposed to issues specific to its platform, such as security and hardware issues. However, we feel the technological risk is manageable, as NUH seems to be on the forefront of the hearable market.
- **Competition:** Competition from an increased presence by other hearable companies, both new start-ups and traditional headphone companies transitioning to hearables, could negatively affect NUH's ability to capture a significant portion of its targeted markets. However, we do note NUH was one of the first to fully rollout a wireless hearable device targeted at retail customers.
- **Manufacturing and meeting demand:** Early demand, via online sales and crowdsourced backing, appeared to be significantly larger than the amount of IQbuds™ produced by NUH. The retail roll-out also increased retail demand substantially. We note NUH has outsourced manufacturing of its hardware and logistics to a reputable 3rd party, which should have the capacity to produce enough IQbuds™ to match demand. However, risk still remains that NUH may not have enough inventory on hand and thus hamper its product penetration in the market.
- **Margin Pressure:** retailing into big box format, which has lower margins (albeit on potentially higher volumes) may put pressure on margins. Thus, there is a risk NUH may not achieve profitability and positive cashflow in the near to medium term.
- **Concentrated Product Skew:** Currently NUH is targeting the retail market and has launched an additional product, the IQbuds Boost™, to market. While this shows that the technology can be used for a array of applications, the similarities of the initial skews could see cannibalisation of the base product line or a fragmentation of an already niche market.

Catalysts

- **Marketing Efforts:** NUH has previously only sold the IQbuds™ exclusively through its crowdfunding campaign and via its online store (pre-sales). This has meant the Company has not marketed its hearables extensively. We believe, in parallel to the retail roll-out, NUH will increase its marketing efforts and thus increase both the customer awareness of both its product and investor awareness of the Company.
- **Retailer Roll-out and Growth:** NUH has progressed on the mass consumer focussed roll-out of its IQbuds™ with big box retailers in the US. This includes agreements with Best Buy, Amazon and Brookstone. This both secures the largest brick & mortar and e-commerce channels in the US. We believe the Company may expand its sales footprint via additional brick & mortar channels, therefore the announcement of future big box retailers stocking IQbuds™ should be a near-term catalyst.
- **Geographic Expansion:** NUH is currently focused on retail channels in the US however we do note the online store has currently stated it is shipping to the US, Canada, Australia and New Zealand. The US focus is positive as this is a large market, which has historically been early adopters of wearables and are influencers in the technology and consumer markets. However, NUH is actively increasing its global sales footprint, and we believe it is currently in talks with retailers and affiliates in Asia and Europe. Sales in these geographies should be a major positive for NUH.
- **Hearable Market Growth:** The wearables market has grown substantially in the last few years, with the consumer success of products such as the Fitbit. We believe the entire wearables market should grow at a rapid pace in the next decade, and believe the hearables segment should be the most accelerated growth portion of this market. The introduction of wireless earbuds from the likes of Apple and Samsung are positive for consumer education. In our opinion, this should lead customers to the IQbuds™ given its increased capabilities and "smart" functionality.
- **Product Extensions:** We have previously noted NUH currently has a concentrated product skew, which is focused on the intersection between smart wearables, wireless earbuds and hearing-aid devices. We believe NUH could increase its product suite by introducing earbuds targeted at niche markets. These could include products such as "starter" hearing-aid devices and industrial IQbuds™, all of which could be built on the existing underlying Intellectual Property (IP).

FINANCIALS

Revenue from ordinary activities for the year was \$5.3m. This compared with revenue of \$2.9m for the year ended 30 June 2017, growth of 80%. Additionally, the Company reported its first positive Gross Profit of \$1.6m which was up from the Gross loss of \$0.2m the prior year. This is highly positive showing that the product suit is profitable at current prices.

NUH achieved a net loss after tax of \$7.4m. This compared with a net loss after tax of \$4.8m for the year ended 30 June 2017, a decline of 53%. The net loss after tax result represented a loss of 0.92 cents per share, compared to a loss of 0.78 cents per share last year. Employee costs and marketing expenses increased substantially in the year, which enhanced the loss reported.

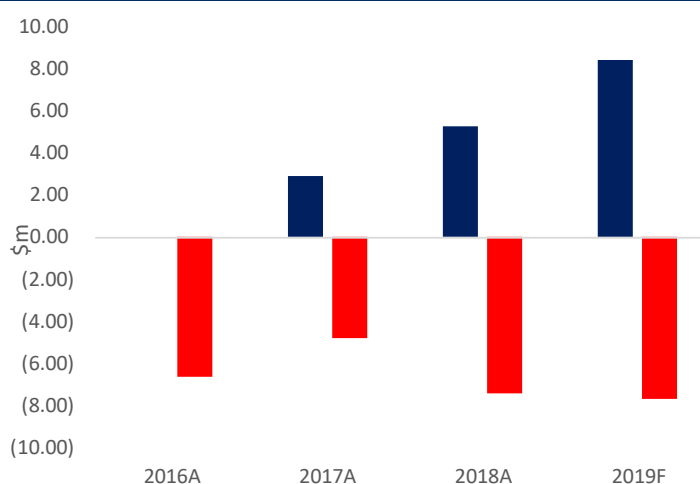
We estimate that the current operational expenses per annum are c\$10m, thus at current gross margins of 30%, the Company would need to generate revenue of \$35m per annum to break-even. This is a c600% increase on current revenues. The current global sales expansion and the fact that consumers now more inclined to buy wireless and are more aware of ear health may help the company achieve these levels of sales. However, we would need to see sales traction before assigning value.

Figure 10: Historical Financials

	2016A	2017A	2018A	2019F
Sales Revenue	0.0	2.9	5.3	8.4
Revenue Growth		100%	80%	60%
Gross Profit	0.0	-0.2	1.6	2.7
GP Margin	0%	-7%	30%	32%
EBITDA	-6.7	-4.8	-7.4	-7.7
EBITDA Margin	0%	-166%	-141%	-92%
Reported NPAT	-6.7	-4.8	-7.4	-8.1
NPAT Margin	0%	-166%	-141%	-96%
Free Cashflow	-1.4	-7.6	-10.7	-9.1

Source: Patersons Securities Limited, Nuheara Limited

Figure 11: Revenue & EBITDA



Source: Patersons Securities Limited, Nuheara Limited

CAPITAL STRUCTURE AND BALANCE SHEET

NUH has successfully completed two capital raisings recently, raising \$9 million in July 2017, and \$6 million in June 2018. Funds raised will be used to assist NUH in achieving its planned objectives of increasing sales and marketing activities of IQbuds™ and IQbuds BOOST™, increasing inventory levels of IQbuds BOOST™, and the production and launch of LiveIQ™, expected for release in the December quarter of 2018.

In October 2018, NUH also reported it had received a Research and Development Tax Incentive cash rebate from the Australian Tax Office of \$1.9m. This was for R&D spend incurred in FY18. We expect a similar rebate to be received (in October 2019) for its R&D spend in FY19.

As at 30 September 2018, NUH had cash on hand of \$5.0m. Thus, given a quarterly operating cash outflow of \$2.5m and the cash received from the R&D rebate, we anticipate NUH should have c\$4.5m in cash at end December 2018.

We note that NUH is commencing its LiveIQ roll out shortly and should start generating revenue, thus NUH is well positioned to derive revenue from three distinct avenues.

However, should further revenue growth be stagnate, the Company may need to return to market by the end of FY19 for an additional capital raising and shore up its balance sheet. We note that NUH has undertaken a capital raising every year since listing and at the current run rate, this is likely to occur again within 6 months.

BOARD OF DIRECTORS AND KEY MANAGEMENT

Justin Miller – Co-founder & Chief Executive Officer

Mr. Miller is a serial entrepreneur who has developed a thorough knowledge of the global technology and innovation marketplace during his 25-year executive career. Throughout the course of his career, Mr. Miller has successfully founded and managed the aggressive and profitable growth of technology, manufacturing and service related companies. This includes strategic acquisitions, capital raisings, research & development, product development & onshore/offshore manufacture, significant staff growth and multi-million dollar sales deals involving both direct & channel sales models. Justin founded ASX-listed IT services company, Empired, and most recently was the founder and CEO of industrial hearing and communication company, Sensear Pty Ltd, where he was responsible for growing the global business from the San Francisco Bay Area.

David Cannington – Executive Director

Mr. Cannington, who is based in San Francisco, CA, has over 25 years' global sales and marketing experience. He has held senior positions in sales and marketing for companies spanning consumer packaged goods (Cadbury Schweppes), advertising (McCann Erickson), data analytics (Neochange) and hearing technology (Sensear Pty Ltd). He has advised many startups on go-to-market and growth strategies and was the founding CEO of ANZA Technology Network, a leading cross-Pacific technology entrepreneurs network. David has been recognized as one of the most influential Australian technology executives in Silicon Valley and brings a global perspective to technology commercialization.

Kathryn Foster – Non-Executive Director

Ms. Foster served as Senior Director of e-commerce strategy in Supply Chain and managed the Sales and Marketing team at Microsoft Store online. Ms. Foster has over 20 years' experience creating and running large internet-based businesses, starting in the late 1990's on Windows Update.

Prior to becoming a professional director, Ms. Foster was Senior Director of Microsoft Store online where she managed the sales and merchandising team for Microsoft Store online across 232 geographies. As the Senior Director, she was responsible for an annual revenue budget in the low billions of dollars. Prior to that, for the inception of the Xbox Games Marketplace, Ms. Foster set business vision, strategy and drove the technical execution around digital and physical supply chain technology and operations to enable Xbox's billion-dollar business globally.

Ms. Foster has been an Independent Non-Executive Director of Class Limited since July 1, 2015. She joined the QSuper Audit and Risk committee in March 2017 and is managing director of Foster Consulting, a boutique consulting firm focusing on strategic initiatives and direction. Ms. Foster holds Bachelor of Science (BSc) in International Marketing from Oregon State University and Associate of Science (ASc) – Computer Science and Information Systems from Shoreline Community University.

Susan Hunter – Company Secretary

Ms. Hunter has over 20 years experience in the corporate finance industry. She is founder and managing director of consulting firm Hunter Corporate Pty Ltd, which specializes in the provision of corporate governance and company secretarial advice to ASX listed companies. Ms. Hunter has previously held senior management roles at Ernst & Young, PricewaterhouseCoopers and Bankwest both in Perth and Sydney. Ms. Hunter holds a Bachelor of Commerce, is a Member of the Australian Institute of Chartered Accountants, a Fellow of the Financial Services Institute of Australasia, a Graduate Member of the Australian Institute of Company Directors and an Associate of the Governance Institute of Australia Ltd.

Alan Davis – Chief Product Officer

Alan is an experienced audio product engineer who has spent more than 12 years developing and bringing to market innovative audio technologies for consumer electronics and audio communication products. He holds a PhD in Digital Signal Processing from Curtin University, Australia. Alan has held management positions at Dolby Laboratories and Sensear, an industrial communications company.

David Ward – Chief Operations Officer

David is an electronic engineer having more than 30 years of experience in the electronics industry and has been involved in the Hearing Aid and Industrial Communication industries for over 8 years. Most recently, David was Managing Director of Hearmore, an innovative hearing aid company, and before that Engineering Manager at Sensear where he managed the product development of a range of communication products.

Jean Marie Rudd - Chief Financial Officer

Jean-Marie is an accomplished senior finance executive with over 20 years' experience in the corporate sector and professional services, including almost 10 years as CFO and Company Secretary in ASX listed companies. She has held senior leadership roles at ILH Group Limited, ThinkSmart Limited, the Heytesbury Group and national law firm, Minter Ellison. Jean-Marie is a graduate of Curtin University, Perth, a Chartered Accountant and a graduate of the Australian Institute of Company Directors.

Philip Newton – Chief Sales Officer

Philip was previously the Corporate Vice President for Samsung Electronics Australia and has had extensive global business experience with BenQ and Mitsubishi Electric.

Mr. Newton was the Managing Director of BenQ Australia, a company he grew from its inception to revenue in excess of \$120Million over the course of three years. Prior to that, Mr Newton held various roles with Mitsubishi Electric Australia that culminated in his appointment to the Board of Directors whilst maintaining an executive role as Group General Manager.

Patersons Securities Limited Disclosure of Interest

Patersons Securities and its respective officers and associates may have an interest in the securities or derivatives of any entities referred to in this material

Patersons Securities does, and seeks to do, business with companies that are the subjects of its research reports.

Patersons Securities Corporate Relationship Disclosure

88E	Patersons Securities have acted for 88 Energy Limited (88E) within the past two years and have received fees for these services.
AKM	Patersons Securities have acted for Aspire Nmining Limited (AKM) within the past two years and have received fees for these services.
AXL	Patersons Securities have acted for Axesstoday Limited (AXL) within the past two years and have received fees for these services.
BOE	Patersons Securities have acted for Boss Resources Limited (BOE) within the past two years and have received fees for these services.
BRB	Patersons Securities have acted for Breaker Resources NL (BRB) within the past two years and have received fees for these services.
BSX	Patersons Securities have acted for Blackstone Minerals Limited (BSX) within the past two years and have received fees for these services.
BUX	Patersons Securities have acted for Buxton Resources Limited (BUX) within the past two years and have received fees for these services.
CSS	Patersons Securities have acted for Clean Seas Seafood Limited (CSS) within the past two years and have received fees for these services.
GLL	Patersons Securities have acted for Galilee Energy Limited (GLL) within the past two years and have received fees for these services.
IBG	Patersons Securities have acted for Ironbark Zinc Limited (IBG) within the past two years and have received fees for these services.
NUS	Patersons Securities have acted for Nusantara Resources (NUS) within the past two years and have received fees for these services.
PEX	Patersons Securities have acted for Peel Mining Limited (PEX) within the past two years and have received fees for these services.
RCL	Patersons Securities have acted for ReadCloud Limited (RCL) within the past two years and have received fees for these services.
STN	Patersons Securities have acted for Saturn Metals Limited (STN) within the past two years and have received fees for these services.
SYA	Patersons Securities have acted for Sayona Mining Limited (SYA) within the past two years and have received fees for these services.
VMY	Patersons Securities have acted for Vimy Resources Limited (VMY) within the past two years and have received fees for these services.
WKT	Patersons Securities have acted for Walkabout Resources Ltd (WKT) within the past two years and have received fees for these services.
XTE	Patersons Securities have acted for Xtek Limited (XTE) within the past two years and have received fees for these services.

Research

Cathy Moises - Head of Research
James Farr - Associate Analyst
Daniel Veasey - Research Assistant

Phone: (+61 3) 9242 4030
Phone: (+61 8) 9263 1215
Phone: (+61 8) 9225 2818

Email: cmoises@psl.com.au
Email: jfarr@psl.com.au
Email: dveasey@psl.com.au

Strategy & Economics

Tony Farnham - Economic Strategist / Analyst
Greg Galton - Director Private Wealth

Phone: (+61 2) 9258 8973
Phone: (+61 8) 9263 1612

Email: tfarnham@psl.com.au
Email: ggalton@psl.com.au

Commodities

Cathy Moises - Head of Research
Cam Hardie - Analyst
Xavier Braud - Analyst

Phone: (+61 3) 9242 4030
Phone: (+61 3) 9242 4153
Phone: (+61 8) 9225 2813

Email: cmoises@psl.com.au
Email: chardie@psl.com.au
Email: xbraud@psl.com.au

Industrials

Martyn Jacobs - Analyst
Jon Scholtz - Analyst
Phil Carter - Analyst
Allan Franklin - Analyst
Hira Sakrani - Analyst

Phone: (+61 3) 9242 4153
Phone: (+61 8) 9225 2836
Phone: (+61 8) 9225 2819
Phone: (+61 3) 9242 4155
Phone: (+61 3) 9242 4052

Email: mjacobs@psl.com.au
Email: jscholtz@psl.com.au
Email: Pcarter@psl.com.au
Email: afranklin@psl.com.au
Email: hsakrani@psl.com.au

Institutional Dealing

Dan Bahen
Michael Brindal
Tom Bahen
Artie Damaa
Paul Doherty
Chris Kelly
Jeremy Nugara
Phil Schofield
Sandy Wylie

Phone: (+61 8) 9263 1274
Phone: (+61 8) 9263 1186
Phone: (+61 8) 9263 1180
Phone: (+61 2) 8238 6215
Phone: (+61 3) 8803 0108
Phone: (+61 3) 9242 4078
Phone: (+61 3) 8803 0166
Phone: (+61 2) 8238 6223
Phone: (+61 8) 9263 1232

Email: dbahen@psl.com.au
Email: mbrindal@psl.com.au
Email: tbahen@psl.com.au
Email: adamaa@psl.com.au
Email: pdoherty@psl.com.au
Email: ckelly@psl.com.au
Email: jnugara@psl.com.au
Email: pschofield@psl.com.au
Email: swylie@psl.com.au

Disclosure: This report was prepared solely by Patersons Securities Limited. ASX did not prepare any part of the report and has not contributed in any way to its content. The role of ASX in relation to the preparation of the research reports is limited to funding their preparation, by Patersons Securities Limited, in accordance with the ASX Equity Research Scheme.

ASX does not provide financial product advice. The views expressed in this research report may not necessarily reflect the views of ASX. To the maximum extent permitted by law, no representation, warranty or undertaking, express or implied, is made and no responsibility or liability is accepted by ASX as to the adequacy, accuracy, completeness or reasonableness of the research reports.

Important Notice: Copyright 2018. The Contents contained in this report are owned by Patersons Securities Limited ('Patersons') and are protected by the Copyright Act 1968 and the copyright laws of other countries. The material contained in this report may not be copied, reproduced, republished, posted, transmitted or distributed in any way without prior written permission from Patersons. Modification of the materials for any other purpose is a violation of the copyrights and other proprietary rights of Patersons.

Disclaimer: Patersons believes that the information or advice (including any financial product advice) contained in this report has been obtained from sources that are accurate at the time of issue, but it has not independently checked or verified that information and as such does not warrant its accuracy or reliability. Except to the extent that liability cannot be excluded, Patersons accepts no liability or responsibility for any indirect loss or damage caused by any error in or omission from this report. You should make and rely on your own independent inquiries. If not specifically disclosed otherwise, investors should assume that Patersons is seeking or will seek corporate finance business from the companies disclosed in this report.

Warning: This report is intended to provide general securities advice, and does not purport to make any recommendation that any securities transaction is appropriate to your particular investment objectives, financial situation or particular needs. Prior to making any investment decision, you should assess, or seek advice from your adviser, on whether any relevant part of this report is appropriate to your financial circumstances and investment objectives.

Disclosure: Patersons, its directors and/or employees may earn brokerage, fees, commissions and other benefits as a result of a transaction arising from any advice mentioned in this report. Patersons as principal, its directors and/or employees and their associates may hold securities in the companies the subject of this report, as at the date of publication. These interests do not influence Patersons in giving the advice contained in this report. Details of any interests may be obtained from your adviser. Patersons as principal, its directors and/or employees and their associates may trade in these securities in a manner which may be contrary to recommendations given by an authorised representative of Patersons to clients. They may sell shares the subject of a general 'Buy' recommendation, or buy shares the subject of a general 'Sell' recommendation.

Stock recommendations: Investment ratings are a function of Patersons expectation of total return (forecast price appreciation plus dividend yield) within the next 12 months. The investment ratings are Buy (expected total return of 10% or more), Hold (-10% to +10% total return) and Sell (> 10% negative total return). In addition we have a Speculative Buy rating covering higher risk stocks that may not be of investment grade due to low market capitalisation, high debt levels, or significant risks in the business model. Investment ratings are determined at the time of initiation of coverage, or a change in target price. At other times the expected total return may fall outside these ranges because of price movements and/or volatility. Such interim deviations from specified ranges will be permitted but will become subject to review by Research Management. This Document is not to be passed to any third party without prior written consent.