

Pixie Dust Technologies

(NASDAQ: PXDT)

Harnessing Sound and Light Waves for Personal Care/Healthcare – Initiating Coverage

BUY

Current Price: US\$2.45

Fair Value: US\$5.21

Risk*: 4

Sector: Technology

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Highlights

- Formed in 2017, Pixie is a Japanese technology company focused on applying its **proprietary wave control technology** across a wide range of applications for consumer personal care/healthcare, and businesses.
- Wave control technology is a **proprietary innovation** capable of manipulating sound and light waves to influence objects, gather and analyze their information, and manipulate their features to achieve desired effects.
- Pixie has **six commercialized products** (all launched in the past one/two years), and several others in R&D stages. One of its flagship products **promotes hair growth** and mitigates hair loss. The company also offers products for individuals who are **deaf or hard of hearing**, and those interested in improving their **cognitive abilities**.
- The company is in the early stages of revenue generation. In H1-FY2024 (ended October 2023), revenue increased by 89% YoY to 299M yen (US\$2M), **indicating that its products are gaining traction quickly**. EBITDA has yet to turn positive.
- The company follows an **asset-light business model**, relying on third-party manufacturers. We believe Pixie's **strategic partnerships with established players** across various sectors enhance its success potential compared to typical startups.
- **Founders own 38%** of the outstanding shares, reflecting their conviction in the company's prospects.
- While Pixie's technology is a recent innovation, we believe that product distribution by major Japanese retail chains and electronic stores, coupled with strong sales growth, **suggests promising market acceptance**. In the next 12 months, as more consumers test Pixie products, we will be able to assess their efficacy through product reviews and sales traction.

Risks

- Limited operational history
- EBITDA has not yet turned positive
- **Competition**
- Need to **pursue equity financings** to fund working capital/R&D until EBITDA turns positive
- No guarantee that the company will be able to expand its products internationally

Sid Rajeev, B.Tech, CFA, MBA
Head of Research

Price Performance (1-year)



	YTD	12M
PXDT	-65%	N/A
NASDAQ	11%	38%

Company Data

52-Week Range	US\$2.30 - \$10.51
Shares O/S	15M
Market Cap.	US\$36M
Current Yield	N/A
P/E (forward)	N/A
P/B	2.5x

Key Financial Data (000s, JPY)

YE: Apr 30th

	2023	2024E	2025E
Cash	2,135,513	1,692,005	1,055,170
Working Capital	1,277,792	849,845	230,127
LT-Debt	21,113	21,113	21,113
Total Assets	3,717,654	3,312,374	2,712,723
Revenue	704,712	904,157	1,410,938
EBITDA	(1,804,428)	(1,887,221)	(1,366,273)
Net Income	(1,965,491)	(2,193,327)	(1,682,512)
EPS	-290.28	-147.55	-113.19

*See last page for important disclosures, rating, and risk definitions. All figures in JPY unless otherwise specified.

Company Overview

Headquartered in Tokyo, Pixie is focused on applying its proprietary wave control technology across a **wide range of applications** for consumers and businesses.

Formed in 2017

In 2023, Pixie completed a US\$11M IPO, and listed its shares on the NASDAQ

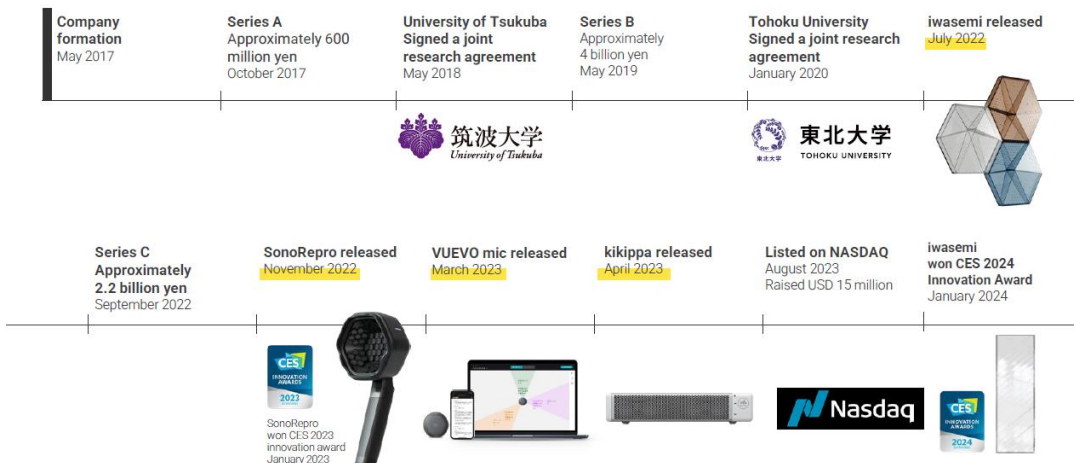
85 employees

The technology was developed in 2014 by Pixie's founders as part of an academic research project

43 registered patents, with an additional 236 pending approval

Six commercialized products, and several others in various stages of R&D

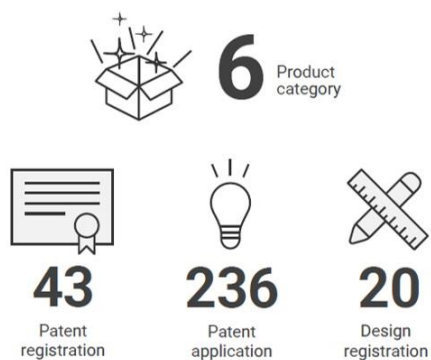
Company History



Source: Company

Wave control technology is a **proprietary innovation** capable of manipulating sound and light waves to influence objects, gather and analyze their information, and manipulate their features to achieve desired effects.

Portfolio



Winner of CES 2024 Innovation Awards



Winner of CES 2023 Innovation Awards



2022 Received the "Intellectual Property Achievement Award, Minister of Economy, Trade and Industry Award" in 2022



"Yoichi Ochiai x Japan Phil Project" Cannes Lions 2019 Winner of multiple awards including the 72nd Dentsu Advertising Award

Source: Company

Follows an asset-light business model by relying on third-party manufacturers



Commercializing applications through partnerships with industry players, and research entities

Customers, R&D Partners, and Shareholders



- A subsidiary of Toyota (TSE:7203) has installed iwasemi at one of their locations
- Dentsu Group (TSE:4324) is a shareholder, and provides marketing services for Pixie

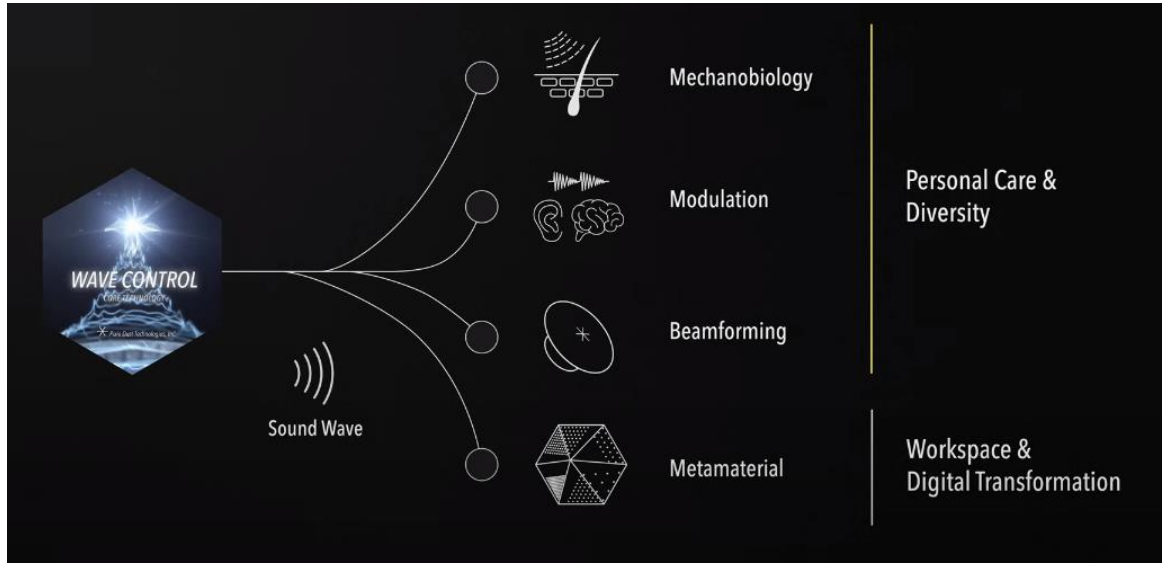
Flagship Products

The company currently focuses on two areas of product development:

Personal Care & Diversity: Harnessing wave control technology for healthcare applications including assistance in vision, hearing, and touch.






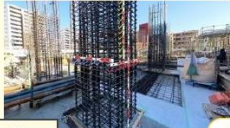
- **Workspace & Digital Transformation:** Harnessing wave control technology for designing workplaces, offices, and/or construction sites.

Product Portfolio



Three commercialized personal care products, all marketed in Japan currently

Three commercialized products for businesses, all available in Japan, with one also marketed in the U.S.

Personal Care & Diversity Area		
<p>SonoRepro™ Ultrasonic scalp care</p>  <p>CES Innovation Awards 2023</p> <p>Sound Modulation Beamforming</p>	<p>kikippa™ Gamma wave sound care</p>  <p>Sound Modulation Healthcare</p>	<p>VUEVO™ Communication visualization</p>  <p>Beamforming Sensing</p>
Workspace & Digital Transformation Area		
<p>INASEMI™ Sound absorbing metamaterial</p>  <p>CES Innovation Awards 2024</p> <p>Simulation Material</p>	<p>hackke Precise indoor location detection</p>  <p>Beamforming</p>	<p>KOTOWARI Spatial data solutions</p>  <p>Simulation Sensing</p>

Source: Company

The following sections summarize Pixie’s flagship products.

Personal Care & Diversity

Pixie does not disclose segmented results, but management has indicated to us that their two best selling products are SonoRepro and kikippa

We believe Pixie's strategic partnerships with established players enhances its success potential compared to typical startups

The company avoids regulatory implications by refraining from marketing its products as medical devices

Consequently, Pixie cannot claim that its products promote hair growth, or enhance cognitive abilities

SonoRepro is marketed as a scalp care device, while kikippa is marketed for its ability to stimulate users's auditory experience

SonoRepro (Launched in 2022)	kikippa (Launched in 2023)	VUEVO (Launched in 2023)
<p>Pixies has a non-exclusive distribution agreement with Angfa, a Japanese preventive medicine company; financial terms undisclosed</p>	<p>Developed in collaboration with Shionogi Healthcare (TSE: 4507/MCAP: US\$14B), a Japanese pharmaceutical company; financial terms undisclosed</p>	<p>Developed in collaboration with Sumitomo Pharma (TSE: 4506/MCAP: US\$1B), a Japanese pharmaceutical company; financial terms undisclosed</p>
		
		
<p>Source: Company</p>	<p>Source: Company</p>	<p>Source: Company</p>
<p>A non-contact scalp care device utilizing ultrasonic waves to stimulate the scalp, promoting hair growth and overall hair health; Intended for daily use, with each section requiring one minute of treatment.</p>	<p>An acoustic stimulation device/speaker primarily designed for seniors to enhance cognitive abilities and prevent dementia. This device uses a proprietary algorithm to transform everyday sounds (like those from TVs or computers) into frequencies associated with gamma brainwaves. Gamma waves are the fastest signals produced by the brain. Third-party studies indicate a link between gamma waves and improved cognitive functions. kikippa connects directly to audio devices.</p>	<p>A tabletop microphone transcription service designed for the deaf and hard of hearing; it displays the direction and content of a speaker's voice in real-time. Compatible with computers and tablets, it enhances conversations in group settings like meetings or lectures. Pixie is currently developing smart glasses equipped with same technology.</p>
<p>Tests conducted by Pixie and its partner revealed significant improvements in hair diameter, scalp condition, and scalp water content.</p>	<p>Number of devices sold to date – undisclosed</p>	<p>Number of devices sold to date – in early stages of commercialization</p>
<p>Number of devices sold to date – 2,600+</p>	<p>Distribution - Sold on partner Shionogi Healthcare's online platform, consumer electronics stores, and other online stores</p>	<p>Distribution – Direct sales to businesses</p>
<p>Distribution - 95+ retail and online stores/salons in Japan, including major consumer electronics retail chains, and Amazon Japan (NASDAQ: AMZN)</p>	<p>Product Reviews - <10 reviews on Amazon, and other online stores</p>	<p>Product Reviews – N/A</p>
<p>Product Reviews - <10 reviews on Amazon, and other online stores</p>	<p>Device Price - 90,000 yen (US\$590)</p>	<p>Device Price – 145,000 yen (US\$945), and monthly usage fees of 30,000 yen (US\$195) for connectivity</p>
<p>Device Price - 125,000 yen (US\$815)</p>	<p>Estimated product life – five years</p>	<p>Estimated product life – five years</p>
<p>Estimated product life – three years</p> <p>Competition – Directly competes with hair scalp massagers offered by large brands; SonoRepro's advantages lie in its ability to stimulate the scalp without direct contact, ensuring cleanliness, and scalp protection. The price range of comparable devices is 85,000 (US\$550) to 200,000 yen (US\$1,300)</p>	<p>Competition – We are not aware of any direct competitors. However, the device competes with medical products/solutions designed for dementia prevention.</p>	<p>Competition - Pixie competes with hearing aids and speech-to-text apps. Its advantages include distinguishing speakers in meetings, and value-added features such as summarized minutes. Pixie is in the process of incorporating translation services.</p>

Workspace & Digital Transformation

In January 2024, iwasemi won an innovation award at the coveted Consumer Electronics Show/CES held in Las Vegas

Pixie offers two more products for businesses: one for spatial analysis for architects and interior designers, and another for high-precision indoor location tracking; both products are in early stages of commercialization

10+ products in pipeline in various stages of R&D, all driven by Pixie's wave control technology

iwasemi (Launched in 2022 in Japan, followed by a soft launch in the U.S. in 2023, targeting architecture and interior design firms)

Pixie has developed a sound-absorbing material designed to enhance indoor sound environments by reducing room over-reflection, and sound transmission between areas. Key advantages include:

- Unlike common sound-absorbing materials such as glass and wool, which are porous and limited in design and strength, iwasemi can be **applied to a wide range of surfaces**.
- iwasemi **absorbs a broad spectrum of sound frequencies**, including those that glass and wool cannot. It can also target specific frequency ranges for absorption.
- iwasemi is **easily installable and relocatable** compared to other soundproofing materials, which usually require permanent installation. Users can easily move it from one wall to another.

Distribution – Offered by large Japanese interior design providers to their clients; In addition, Pixie has signed a distributorship agreement with Energy Spot, an interior design and construction company based in Seoul

Number of devices sold to date – 23k+ pieces (3,220 sqm)

Device Price - 300k to 500 k yen (US\$2k to US\$3k) per room

Competition – Directly competes with other sound proofing materials and office acoustic panel manufacturers. While the upfront cost for a client is comparable to other options, management believes the lifetime cost is lower due to advantages such as relocation capabilities, and wider sound absorption.

R&D PIPELINE (HEALTHCARE)

Content	Product	Research & Development	Business Development	Launched
Hair care	SonoRepro	Progressing	Progressing	Launched
Beauty care (beautiful hair encouragement, skin care)	to be decided	Progressing	Progressing	Not started
Skin disease treatment	to be decided	Progressing	Progressing	Not started
Wound treatment	to be decided	Progressing	Progressing	Not started
Gamma wave sound care speaker	kkippa	Progressing	Progressing	Launched
Gamma wave sound care (other than speakers)	to be decided	Progressing	Progressing	Not started
Dementia care by sound	to be decided	Progressing	Progressing	Not started

Source: Company

R&D PIPELINE (MATERIAL)

Content	Product	Research & Development	Business Development	Launched
Sound absorption in offices	iwasemi (HX-a / SQ-a / RC-a)			
Sound absorption outside the office	to be decided			
Sound insulation in residences (Sound insulation structure allowing air to pass through but not sound)	to be decided			
Sound insulation in non-residential areas	to be decided			

R&D PIPELINE (SENSING)

Content	Product	Research & Development	Business Development	Launched
Reduction of man-hours in reinforcement inspection process	KOTOWARI v360			
Reduction of man-hours for processes other than reinforcement inspection	to be decided			
People flow analysis	KOTOWARI FAC+			
Indoor location information measurement	hackke			
Hearing-impaired support and minutes creation	VUEVO (wireless microphone)			
Hearing-impaired support and next-generation communication	VUEVO (speech bubble glasses)			
Simultaneous translation support	VUEVO (subtitle transparent display)			

Source: Company

Management and Board

Name	Position(s)	# Shares Outstanding	% of Total
Yoichi Ochiai	Founder/CEO/Director	3,162,600	21.28%
Takayuki Hoshi	Founder/Chief Research Officer/Director	1,378,200	9.27%
Taiichiro Murakami	Founder/COO/Director	1,176,600	7.92%
Nobuhiro Takagi	Co-CFO	-	-
Nobufusa Tarumi	Co-CFO	-	-
Yusuke Murata*	Independent Director	-	-
Masayo Takahashi	Independent Director	-	-
Total		5,717,400	38.46%

*Yusuke Murata is the General Partner of Incubate Fund which owns 2.11M shares, or 14% of the outstanding shares.

Source: Company/FRC

Founders own 38% of the outstanding shares

Two of five directors are independent

Brief biographies of the founders, as provided by the company, follow:

Yoichi Ochiai – Founder/CEO/Director

Dr. Ochiai has been an assistant professor of library, information and media studies at the University of Tsukuba since 2015. Dr. Ochiai has received numerous awards and accolades, including the 2015 World Technology Award (IT Hardware) from the World Technology Network, the 2020 Innovators Under 35 Japan by MIT Technology Review and the Future 50 by Project Management Institute. Dr. Ochiai is the youngest ever keynote speaker in the 40-year history of SEMICON Japan and was also invited as a speaker at South by Southwest in 2022. Dr. Ochiai received a master's degree in Applied Computer Science from the University of Tokyo in 2013, and a Ph.D. in Applied Computer Science at the University of Tokyo in 2015.

Taiichiro Murakami - Founder/COO/Director

Mr. Murakami served as a management consultant for Accenture Japan from April 2010 to December 2016 where he focused on assisting companies with the development of business strategies, operating models, digital strategies and large-scale business transformation and organizational change. In addition, Mr. Murakami has served as an executive advisor for Mitou Foundation since January 2017 and as a director of Ippan Shadan Houjin xDiversity since November 2018. Mr. Murakami received a Bachelor of Engineering degree from University of Tokyo in 2008, and a Master of Engineering degree from University of Tokyo in 2010.

Takayuki Hoshi - Founder/Chief Research Officer/Director

Dr. Hoshi served as an assistant professor at the University of Tokyo in its Research Center for Advanced Science and Technology from June 2016 to September 2017 and in the department of information physics and computing from April 2016 to May 2016. Prior to his tenure at the University of Tokyo, Dr. Hoshi served as an assistant professor at Nagoya Institute of Technology's Center for Innovative Young Researchers, and as an assistant professor in the department of intelligent mechanical systems at the Graduate School of Science and Technology at Kumamoto University. Dr. Hoshi is considered a world-renowned expert on wave control technologies. Dr. Hoshi received a Bachelor of Engineering degree in 2003, a Master of Engineering degree in 2005 and a Ph.D. in Information Science and Technology in 2008 from the University of Tokyo.

Financials (Year-End: Apr 30th)

The company does not provide segmented results

Until FY2023, revenue mainly came from providing R&D services to partners; however, this revenue stream will diminish moving forward

As a result of new product launches in FY2023, product revenue was up 514% YoY in H1-FY2024

Yet to be profitable

Gross margins are higher than the sector average

The company does not disclose its marketing expenses; In H1-FY2024, G&A expenses (which also includes marketing expenses) were 350% of revenue

Established companies in the Healthcare Equipment/Services sector typically allocate 5%-10% of revenue to marketing expenses

Segmented Results (000s, JPY)	2021	2022	2023	YoY	2023 (6M)	2024 (6M)	YoY
Services	512,772	636,265	521,763	-18%	121,866	73,430	-40%
Products	-	-	182,949		36,773	225,709	514%
Revenue	512,772	636,265	704,712	11%	158,639	299,139	89%
Services (incl. D&A)	136,390	206,604	65,605	-68%	23,121	16,710	-28%
Products (incl. D&A)	-	-	77,035		24,053	126,820	427%
COGS (incl. D&A)	136,390	206,604	142,640	-31%	47,174	143,530	204%
Gross Profit	376,382	429,661	562,072	31%	111,465	155,609	40%
Services - GM (incl. D&A)	73%	68%	87%		81%	77%	
Products - GM (incl. D&A)	-	-	58%		35%	44%	
Gross Margin (Overall) - incl. D&A	73%	68%	80%		70%	52%	

INCOME STATEMENTS (000s, JPY)	2021	2022	2023	YoY	2023 (6M)	2024 (6M)	YoY
YE: Apr 30th							
Revenue	512,772	636,265	704,712	11%	158,639	299,139	89%
Cost of Sales	84,658	131,458	32,064	-76%	8,278	42,199	410%
Gross Profit	428,114	504,807	672,648	33%	150,361	256,940	71%
G & A	525,158	833,305	1,790,519	115%	611,124	1,048,441	72%
R & D	601,731	694,072	686,557	-1%	339,283	279,436	-18%
EBITDA	(698,775)	(1,022,570)	(1,804,428)	76%	(800,046)	(1,070,937)	34%
D&A	51,732	75,182	110,576		38,896	101,331	161%
EBIT	(750,507)	(1,097,752)	(1,915,004)	74%	(838,942)	(1,172,268)	40%
Interest	17,672	24,777	28,748	16%	13,423	15,811	18%
EBT	(768,179)	(1,122,529)	(1,943,752)	73%	(852,365)	(1,188,079)	39%
Share-Based Compensation	-	-	65,537		32,768	3,355	-90%
Unusual/Non-Recurring Expenses	(8,695)	(13,025)	(43,798)	236%	(133)	(41,407)	31033%
Income Tax							
Net Income	(759,484)	(1,109,504)	(1,965,491)	77%	(885,000)	(1,150,027)	30%
EPS	-126.58	-184.92	-290.28	57%	-147.50	-85.47	-42%

Margins	2021	2022	2023	2023 (6M)	2024 (6M)	Sector
Gross	83%	79%	95%	95%	86%	25%
EBITDA	-136%	-161%	-256%	-504%	-358%	11%
EBIT	-146%	-173%	-272%	-529%	-392%	7%
Net	-148%	-174%	-279%	-558%	-384%	5%

Expenses (% of Revenue)	2021	2022	2023	2023 (6M)	2024 (6M)	Sector
G & A	102%	131%	254%	385%	350%	16%
R & D	117%	109%	97%	214%	93%	

Summary of Cash Flows (000s, JPY)	2021	2022	2023	2023 (6M)	2024 (6M)
YE: Apr 30th					
Cash Flows from Operations	(589,065)	(1,075,326)	(1,813,442)	(861,666)	(1,385,065)
Cash Flows from Investing	779,350	(74,702)	(89,284)	(49,321)	(68,760)
Cash Flows from Financing	289,354	(120,110)	2,242,276	2,389,980	1,698,030
Net Change	479,639	(1,270,138)	339,550	1,478,993	244,205
Free Cash Flows	(607,642)	(1,145,810)	(1,893,802)	(909,017)	(1,449,862)

Source: Company Filings, FRC

Healthy balance sheet

The company maintains low CAPEX budgets due to its asset-light model

Liquidity & Capital Structure (000s, JPY)				Sector (Healthcare Equipment/Services)
YE: Apr 30th	2022	2023	Q2-2024	
Cash	1,795,963	2,135,513	2,420,667	
Working Capital	1,791,708	1,277,792	1,604,963	
Current Ratio	6.76	1.72	2.18	1.80
Total Debt	790,000	1,034,445	1,027,779	
Total Debt / Capital	33%	35%	32%	22%
LT Debt / Capital	32%	1%	0%	17%

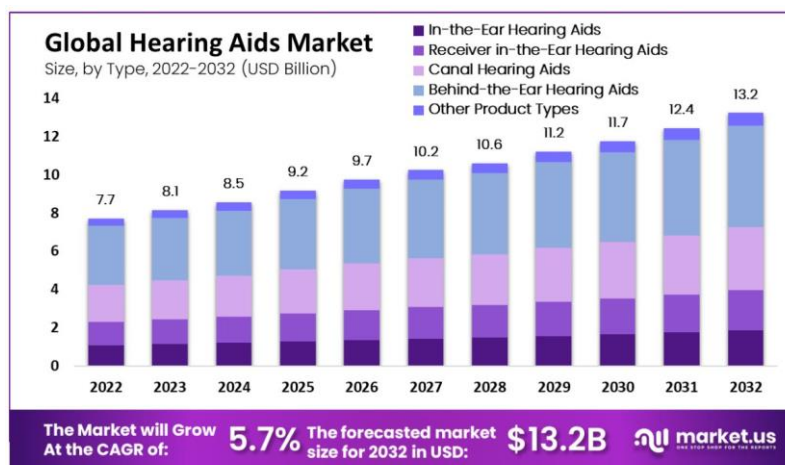
	Warrants	Strike Price	Value
	3,600	\$1.38	\$4,966
	93,000	\$0.18	\$17,186
	234,000	\$1.98	\$463,320
	30,000	\$1.99	\$59,796
	422,400	\$1.99	\$841,928
	219,600	\$1.99	\$437,707
	87,600	\$0.01	\$578
Total Outstanding	1,090,200	\$1.67	\$1,825,481
In-the-Money	1,090,200	\$1.67	1,825,481

Source: Company Filings, FRC

FRC Projections and Valuation

The global hearing aids market is anticipated to grow from US\$8.5B in 2024, to US\$13.2B by 2032, reflecting a CAGR of 5.7%

The Japanese hearing aids market is anticipated to grow from US\$138M in 2024, to US\$260M by 2033, reflecting a CAGR of 6.8% (Source: Spherical Insights)



The global hearing aids market is primarily driven by an expanding elderly population, and increasing demand for high-quality hearing aids. Though not a hearing aid, Pixie's VUEVO targets the deaf and hard of hearing, aligning with the hearing aid market.

The US\$4.24B **global hair loss treatment market** is anticipated to grow at a rate of 6.2% p.a. from 2023 to 2030 (Source: Coherent Market Insights), driven by rising incidences of alopecia and related diseases, along with increasing R&D initiatives.

Target Markets:

- a) **SonoRepro:** In Japan, there are approximately 55M adult males. Studies suggest that by the age of 50, 30%-50% of men experience visible hair loss. Based on these findings, we believe Pixie is targeting a 345B yen market (US\$2.2B) in Japan.
- b) **Kikippa:** With 36M adults in Japan aged over 65, we believe Pixie is targeting a 325B yen (US\$2B) market.

Our models are based on the assumption that Pixie's two flagship products will capture 1% of their target markets in Japan by 2030, without factoring in any international expansion

For conservatism, we are not assigning any upside from the company's other products

We anticipate marketing expenses will range between 50%-100% of revenue in the next three years, declining to a long-term average of 10%, aligning with the sector average

INCOME STATEMENTS (000s, JPY)				
YE: Apr 30th	2022	2023	2024E	2025E
Revenue	636,265	704,712	904,157	1,410,938
Cost of Sales	131,458	32,064	135,624	282,188
Gross Profit	504,807	672,648	768,533	1,128,750
G & A	833,305	1,790,519	2,096,882	1,992,038
R & D	694,072	686,557	558,872	502,985
EBITDA	(1,022,570)	(1,804,428)	(1,887,221)	(1,366,273)
D&A	75,182	110,576	202,662	212,795
EBIT	(1,097,752)	(1,915,004)	(2,089,883)	(1,579,068)
Interest	24,777	28,748	103,445	103,445
EBT	(1,122,529)	(1,943,752)	(2,193,327)	(1,682,512)
Share-Based Compensation	-	65,537		
Unusual/Non-Recurring Expenses	(13,025)	(43,798)		
Income Tax				
Net Income	(1,109,504)	(1,965,491)	(2,193,327)	(1,682,512)
EPS	-184.92	-290.28	-147.55	-113.19

	2024E	2025E	2026E	2030E	Target Markets
SonoRepro					
Unit Sales	3,750	6,563	9,844	30,429	2,760,000
Price (Yen)	125,000	125,000	125,000	125,000	125,000
Revenue (Yen)	468,750,000	820,312,500	1,230,468,750	3,803,625,000	345,000,000,000
kikippa					
Unit Sales	3,750	6,563	13,125	39,911	3,620,000
Price (Yen)	90,000	90,000	90,000	90,000	90,000
Revenue (Yen)	337,500,000	590,625,000	1,181,250,000	3,591,945,000	325,800,000,000
Service Revenue (Yen)	97,906,667	48,953,333	24,476,667	24,476,667	24,476,667
Total Revenue (Yen)	904,156,667	1,410,937,500	2,411,718,750	7,395,570,000	670,800,000,000

Source: Company / FRC

Our base-case DCF model returned a fair value estimate of US\$6.19/share

DCF Model (000s, JPY)	H2-2024E	2025E	2026E	2030E	Terminal
EBIT (1-tax)	(917,615)	(1,579,068)	(788,506)	1,919,494	
Non-Cash Expenses	133,426	212,795	223,435	271,586	
Change in Working Capital	(15,561)	(17,117)	(18,829)	(27,567)	
Cash from Operations	(799,750)	(1,383,390)	(583,900)	2,163,513	
CAPEX	(85,203)	(150,000)	(150,000)	(150,000)	
Free Cash Flow	(884,953)	(1,533,390)	(733,900)	2,013,513	
Present Value	(884,953)	(1,448,917)	(619,170)	1,079,581	12,355,205
Discount Rate	12%				
Terminal Growth	3%				
Present Value (000s, JPY)	13,094,231				
Cash - Debt (000s, JPY)	1,392,888				
Fair Value (US\$)	\$94,166,275				
Shares O/S	15,209,973				
Value per Share (US\$)	\$6.19				

Comparables Valuation

Pixie is trading at 1.4x forward revenue vs the sector average of 2.8x, implying a 49% discount

Pixie vs Major Consumer Electronics/Healthcare Equipment Companies	EV/Revenue
Intuitive Surgical	18.90
Boston Scientific	7.70
Abbott Laboratories	5.10
Johnson & Johnson	4.60
Medtronic	4.10
Cosonic Intelligent	2.70
GE HealthCare	2.50
Andon Health	2.14
InMode	2.10
Sony	1.63
Samsung	1.56
Pixie Dust (PV of 2027E)	1.42x
Koninklijke Philips	1.30
Healthcare Equipment/Services Sector	1.30x
Consumer Electronics Sector	0.90x
Average	2.79x
Pixie's Discount	-49%

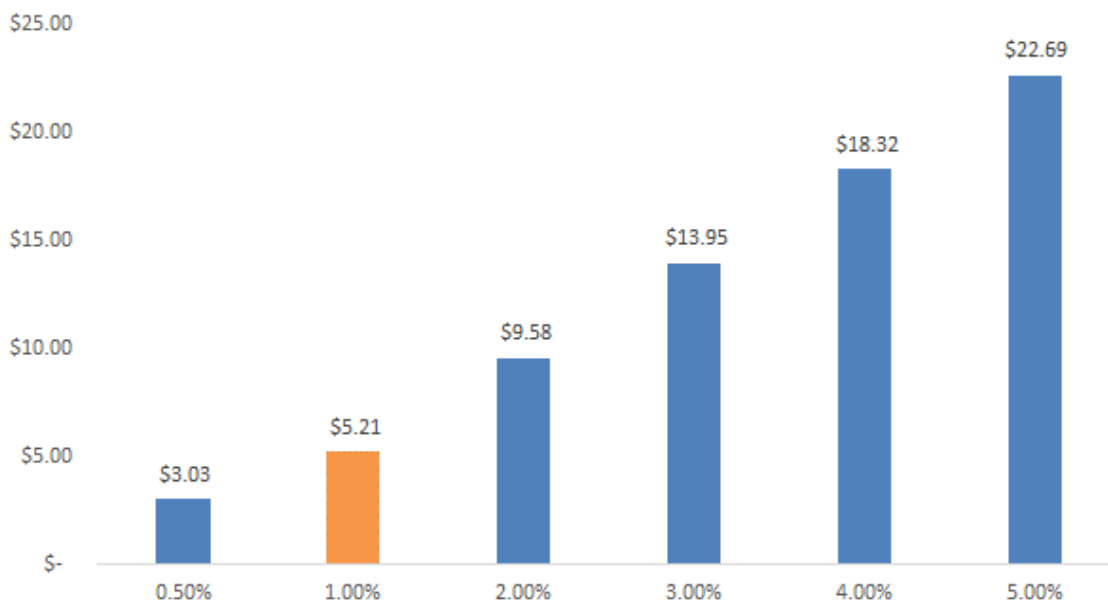
Applying 2.8x to the present value of our 2027 revenue forecast for Pixie, we arrived at a comparables valuation of US\$4.23/share

Source: FRC/S&P Capital IQ

We are initiating coverage with a BUY rating, and a fair value estimate of US\$5.21/share (the average of our DCF and comparables valuations). Our valuation hinges heavily on the success of Pixie's two flagship products.

Our valuation is highly sensitive to our market share assumptions

Market Share Assumption



Source: FRC

While ongoing research explores the utilization of sound waves in healthcare, including applications for dementia, Pixie’s wave control technology is **a relatively new innovation** in its early stages. Currently, there are insufficient customer reviews to gauge the effectiveness of Pixie’s products. However, we consider the **distribution of Pixie products** by major Japanese retail chains and electronic stores as a vote of confidence. Additionally, a positive indicator is that Pixie has already **sold 2,600+ units of SonoRepro** in a relatively short span of time. In the next 12 months, as more consumers test Pixie products, we will be able to assess their efficacy through product reviews and sales traction.

Risks

We believe the company is exposed to the following key risks (not exhaustive):

- Limited operational history
- EBITDA has not yet turned positive
- **Competition**
- Need to **pursue equity financings** to fund working capital, and R&D, until EBITDA turns positive
- No guarantee that the company will be able to expand its products internationally

We are assigning a risk rating of 4 (Speculative)

Appendix

INCOME STATEMENTS (000s, JPY)				
YE: Apr 30th	2022	2023	2024E	2025E
Revenue	636,265	704,712	904,157	1,410,938
Cost of Sales	131,458	32,064	135,624	282,188
Gross Profit	504,807	672,648	768,533	1,128,750
G & A	833,305	1,790,519	2,096,882	1,992,038
R & D	694,072	686,557	558,872	502,985
EBITDA	(1,022,570)	(1,804,428)	(1,887,221)	(1,366,273)
D&A	75,182	110,576	202,662	212,795
EBIT	(1,097,752)	(1,915,004)	(2,089,883)	(1,579,068)
Interest	24,777	28,748	103,445	103,445
EBT	(1,122,529)	(1,943,752)	(2,193,327)	(1,682,512)
Share-Based Compensation	-	65,537		
Unusual/Non-Recurring Expenses	(13,025)	(43,798)		
Income Tax				
Net Income	(1,109,504)	(1,965,491)	(2,193,327)	(1,682,512)
EPS	-184.92	-290.28	-147.55	-113.19

BALANCE SHEETS (000s, JPY)				
YE: Apr 30th	2022	2023	2024E	2025E
Cash	1,795,963	2,135,513	1,692,005	1,055,170
A/R & Others	283,545	785,783	864,361	950,797
Inventories	23,305	123,119	135,431	148,974
Current Assets	2,102,813	3,044,415	2,691,797	2,154,942
PP&E	518,824	507,778	455,116	392,321
Others	1,168,045	165,461	165,461	165,461
Total Assets	3,789,682	3,717,654	3,312,374	2,712,723
Debt	5,555	1,013,332	1,013,332	1,013,332
A/P & Others	305,550	753,291	828,620	911,482
Current Liabilities	311,105	1,766,623	1,841,952	1,924,814
Debt	784,445	21,113	21,113	21,113
Others	1,064,855	31,492	31,492	31,492
Total Liabilities	2,160,405	1,819,228	1,894,557	1,977,419
Share Capital	4,046,038	6,280,678	7,993,396	8,993,396
Retained Earnings	-2,416,761	-4,382,252	-6,575,579	-8,258,092
Total Liabilities & SE	3,789,682	3,717,654	3,312,374	2,712,723

CASH FLOW STATEMENTS (000s, JPY)		
YE: Apr 30th	2024E	2025E
Net loss for the period	-2,193,327	-1,682,512
Items not involving cash		
D&A	202,662	212,795
Share-Based Compensation		
Others		
FFO	-1,990,665	-1,469,717
Changes in WC	-15,561	-17,117
Cash From Operating Activities	-2,006,226	-1,486,834
PP&E	-150,000	-150,000
Others		
Cash For Investing Activities	-150,000	-150,000
Equity	1,712,718	1,000,000
Debt		
Others		
Cash From Financing Activities	1,712,718	1,000,000

Fundamental Research Corp. Equity Rating Scale:

Buy – Annual expected rate of return exceeds 12% or the expected return is commensurate with risk

Hold – Annual expected rate of return is between 5% and 12%

Sell – Annual expected rate of return is below 5% or the expected return is not commensurate with risk

Suspended or Rating N/A— Coverage and ratings suspended until more information can be obtained from the company regarding recent events.

Fundamental Research Corp. Risk Rating Scale:

1 (Low Risk) - The company operates in an industry where it has a strong position (for example a monopoly, high market share etc.) or operates in a regulated industry. The future outlook is stable or positive for the industry. The company generates positive free cash flow and has a history of profitability. The capital structure is conservative with little or no debt.

2 (Below Average Risk) - The company operates in an industry where the fundamentals and outlook are positive. The industry and company are relatively less sensitive to systematic risk than companies with a Risk Rating of 3. The company has a history of profitability and has demonstrated its ability to generate positive free cash flows (though current free cash flow may be negative due to capital investment). The company's capital structure is conservative with little to modest use of debt.

3 (Average Risk) - The company operates in an industry that has average sensitivity to systematic risk. The industry may be cyclical. Profits and cash flow are sensitive to economic factors although the company has demonstrated its ability to generate positive earnings and cash flow. Debt use is in line with industry averages, and coverage ratios are sufficient.

4 (Speculative) - The company has little or no history of generating earnings or cash flow. Debt use is higher. These companies may be in start-up mode or in a turnaround situation. These companies should be considered speculative.

5 (Highly Speculative) - The company has no history of generating earnings or cash flow. They may operate in a new industry with new, and unproven products. Products may be at the development stage, testing, or seeking regulatory approval. These companies may run into liquidity issues and may rely on external funding. These stocks are considered highly speculative.

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