

In good shape

Health & Fitness vertical presents near-term growth opportunity

MyFiziq (ASX: MYQ), a Perth-based technology and service company, offers a patented technology that allows users to track their body shape and dimensions while performing everyday activities. The growing adoption of smartphone apps and mHealth across varied verticals is driving the use of this technology. Currently, MyFiziq targets four verticals. Health & fitness, as well as medical & insurance sectors, are key near-term opportunities. Corporate wellness and the apparel market are likely to create long-term growth opportunities.

Investment case

By the end of 2018, two-thirds of adults across the globe are expected to own smartphones and are likely to account for 73% of internet consumption. This trend is expected to have a strong impact on the adoption of MyFiziq technology. The growth potential of all the business segments that MyFiziq targets is immensely high. Moreover, the adoption of apps that allow tracking of body shapes and dimensions is on the rise across these segments. We believe that MyFiziq's strategy to focus on these verticals is the best way to realise its potential.

Valuation range of A\$0.91–1.08 per share

We value the company using DCF approach between A\$0.91–1.08 per share based on base case and optimistic case assumptions, respectively. MyFiziq will derive revenue from Licencing & Development (L&D) fees and subscription revenue targeting B2B client channels. We have followed a conservative approach in assuming number of B2B clients signed during the fiscal year and consumer base per B2B client, across four verticals. There could be a potential upside in revenue subject to MyFiziq finalisation of the WeChat transaction currently underway and the immense potential of the China market, which is not accounted for in forecasts due to limited clarity on the deal progress.

Share Price: A\$0.26

ASX: MYQ

Sector: Software & Services

22 May 2019

Market Cap. (A\$ m)	23.4
# shares outstanding (m)	90.0
# share fully diluted	157.0
Market Cap Ful. Dil. (A\$ m)	40.8
Free Float	100%
12-month high/low	0.61 / 0.23
1 / 3 / 12-month performance	-4% / -29% / -55%
Website	myfiziq.com

Source: Company, Pitt Street Research

Share price (A\$) and avg. daily volume (k, r.h.s.)



Source: Thomson Reuters, Pitt Street Research

Valuation metrics	
DCF fair valuation range (A\$)	0.91–1.08
WACC	12.1%
Assumed terminal growth rate	0.5%

Source: Pitt Street Research

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MyFiziq has developed a body-shape-tracking technology for a number of customer verticals, including health & fitness

Introducing MyFiziq Limited (ASX: MYQ)

MyFiziq, a Perth-based technology and services company, has developed a revolutionary body-shape-tracking technology that is embedded in a partner's app to enable the app users to track body shape, total body fat and dimensional changes while they perform routine activities or supply this data to their insurers or make more informed choices when buying apparel on line. The technology uses images captured using a smartphone to create a representation of an individual in the form of a 3D avatar with accurate circumference measurements. MyFiziq offers a suite of Software Development Kits (SDKs) and white-label app's to B2B partners in various industry verticals, including health & fitness, medical & insurance, corporate wellness and apparel. Partners either embed the company's SDKs into new or existing apps or utilise one of the MyFiziq white-label offerings to customise the experience to suit their branding requirements. The combined offering is then made available to the partners' end-users for a per-avatar, per-user / per-month subscription fee, or a percentage of the gross sale price depending on the vertical and unique partner requirements.

Besides commercialising its technology, MyFiziq also focuses on its co-founder's brand, Dr Katherine, which provides a variety of science and education-based wellness products including a 20h body confidence online program, sold-out workshops, inspirational talks, private consulting and published works. The Dr Katherine focus on the mindset of individual complements MyFiziq's physical focus and contributes to the overall growth of the company.

How has MyFiziq evolved through inception?

MyFiziq's business model has evolved from B2C to B2B2C since its inception. In the initial years, MyFiziq primarily focussed on developing a technology that will allow individuals to track their body measurements while they participated in diet or workout sessions to change their physical appearance. To make its technology ready for commercial launch, it conducted several validation studies along with healthcare organisations and universities in 2016. In parallel, it launched an initial free version of the MyFiziq app through the iOS App Store to get customer feedback and refine its algorithms and machine-learning models. In late FY2017, the company developed a suite of SDKs that could be integrated into partner apps. It started off by targeting businesses in four different segments – health & fitness, medical & insurance, corporate wellness and apparel – with a high-unmet need for apps that can track an individual's overall health & fitness by measuring anthropometrical changes. To increase the app's traction in the market, the company is also making conscious efforts to market its technology by entering commercial agreements with known sporting identities, health & fitness personalities as brand ambassadors and releasing videos highlighting the use case of its technology. The focus on marketing efforts is expected to generate awareness about the potential of MyFiziq technology and pace up its adoption across verticals.

Meanwhile, the company has also strengthened its IP position across numerous geographies. MyFiziq has been awarded full patent status across countries such as Australia, the USA, Singapore, Korea and Japan. It is also accelerating patenting across other regions, including Canada, China, Europe, India, Japan and New Zealand.



How is MyFiziq positioning its technology across its customer verticals?

MyFiziq is positioning its technology to augment the features of its partner apps by offering their customers the ability to capture and track real-time body-shape, measurements and total body fat. The company opens new markets for partners, allowing for secure collection and comparison of measurements for clothing, weight management, nutrition and athletic goals and tracking of chronic illnesses such as diabetes, coronary heart disease and mortality.

Health & Fitness: Organisations such as sport and exercise brands, companies that offer online digital training, apps and devices, or gyms and personal trainers can integrate MyFiziq technology into their pre-existing offerings to allow customers to track body shape and dimensions while they follow nutrition plans, and perform routine training, exercise or workout sessions. The privacy and ease of use for the individual removes many barriers and replaces conventional equipment such as scales which only report mass changes and not the more sought-after understanding of change in the user's dimensions and physical appearance.

Medical & Insurance: Insurers and medical practitioners can use the MyFiziq technology to improve the monitoring of their patients or policy holders when assessing risk, underwriting insurance cover and perform dynamic premium adjustments by assessing policyholder's actual and predicted future health risk through regular tracking of the total body fat percentage and body circumferences. The ability to privately gather and report a user's physical condition when utilizing the technology has never been available outside of a doctor's office without expensive procedures and equipment. The technology is ideal for early detection of change, allowing early intervention and greater customer care.

Corporate Wellness: MyFiziq offers its body-shape-tracking technology to corporate wellness platform providers to allow their clientele to increase employees' productivity and engage them in physical activities for better health outcomes and reduced sick leave days. The corporate wellness market is a multibillion-dollar market which is growing rapidly with the increased loss of productivity in the work place due to illness and overall bad health. The US market is an ideal example of this growth where the employer pays for the health insurance of its employee's. The MyFiziq technology is well placed for acceptance in this market as it allows the employer and the employee to engage in a gamified environment when working towards a better health outcome for both the individual and the ROI for the employer.

Apparel: MyFiziq aims to offer a simpler suite of SDKs to online retailers to enable them to fit and design customised solutions and allow their customers to choose the correct clothing size while making online purchases. The technology allows accurate measurements of an individual to the required locations according to the apparel company specific sizing chart and measurement protocols, as the manner in which a brand cuts and sizes an individual garment is almost always different to their competitors. In the same way companies supply their sizing chart online for a consumer, MyFiziq custom codes its technology to meet the companies sizing parameters. Also, important to note is the MyFiziq technology captures the individuals shape as well as required measurements allowing for a more precise and individualized fit. With online returns reported to be as high as 40%, a lot of which ends up in landfill, the adoption of this technology can reflect heavily in the apparel companies P & L.

MyFiziq primarily operates through B2B2C model

What is MyFiziq's business model?

MyFiziq primarily operates through a B2B2C model by collaborating with businesses that require tracking of body dimensions, shape or total body fat levels of customers. It generally earns revenues in the form of development and licencing fees, as well as and subscription fees¹ paid by its partners. Partner companies can embed MyFiziq technology in various ways such that it complements their existing environment. MyFiziq can either augment existing branding or deliver a fully bespoke version with customised measurements and engagements. The entire range of services offered by the company includes the following (Figure 1):

Partner Build: MyFiziq provides the required SDK components, documentation and support to the partner; however, the partner is responsible for the development of the app and implementation of the MyFiziq SDKs.

Bespoke Build: Both the partner and the company perform customised development. Both partner and MyFiziq design and scope the full architecture of the app. In this case MyFiziq is paid by the partner for both technical input and development work.

MyFiziq Build: The partner pays MyFiziq to develop and design the application² in order to integrate MyFiziq SDKs into its existing app.

White-label Build: MyFiziq performs re-branding of the pre-existing white-label app. In this case MyFiziq is paid by the partner for both technical input and development work.

Figure 1: MyFiziq Services



Source: Company

MyFiziq offers different pricing structures based on the type of customer vertical.

For the health & fitness vertical, the company charges a base cost of US\$4.99 per user, per month on a 12-month subscription to provide partner app users with the ability to measure and track dimensional changes as a direct result

¹ Partners are charged based on the number of end-users/customers utilising their technology.

² Varies based on the number of users or type of vertical.



MyFiziq's pricing structures varies by vertical targeted

of the nutrition, training, and coaching partners provide. The pricing is based on a volume user model where the pricing is reduced on a per user/per month basis when certain pre agreed volume levels are met.

For the medical & insurance vertical, the company charges a base cost of US\$4.99 per policy, per month. It allows insurers to assess, and predict health outcomes by collecting anthropometrical data and body fat (as an indicator of health status) of policyholders. The pricing is based on a volume user model where the pricing is reduced on a per month basis when certain pre agreed volume levels are met.

For the corporate wellness vertical, the company charges a base cost of US\$4.99 per employee per month. It provides employees interventions and reward-based activity in the workplace while increasing productivity. The pricing is based on a volume user model where the pricing is reduced on a per month basis when certain pre agreed volume levels are met.

For the apparel vertical, the company charges 5% of the gross sale price per garment and a licence fee for the SDKs. It provides retailers the ability to offer online or in-store accurate body measurements to their consumers, so that they can order and fit the correct garment size. The pricing is based on 5% of the gross sales up to 5m individual units. 4% per sale up to the next 5m units and 3% per sale on sales above 10m units.

What makes MyFiziq technology unique?

MyFiziq's platform is a revolutionary technology that uses computer vision, machine-learning and patented algorithms to generate insights related to body measurements such as body fat, shape and dimensions. It processes images collected using smartphones and any other mobile digital device on a secure, enterprise-level infrastructure. The technology not only provides a simpler way to track body measurements but also removes the margin of human error associated with the traditional way of taking measurements using tools such as measuring tapes. It accurately measures anthropometrical changes through a consumer's mobile device, and allows individuals, insurers, medical practitioners or employers to keep track of their body measurements while they perform routine activities or wish to track their anthropometric data over time. We believe that this is a disruptive technology as very few players can offer something as accurate and competitive. In fact, in one of the validation studies conducted by Professor Tim Ackland from the University of Western Australia, the average accuracy of the MyFiziq technology was reported as 97.5% across the four circumference measures – chest, waist, hips and thighs – making it an important tool for individuals or organisations looking to track body changes over a period.

Ten reasons to consider MyFiziq (ASX: MYQ)

- 1) MyFiziq technology has a 'blue sky' of applications.** MyFiziq is initially focussing on four key industries that require anthropometric tools, including health & fitness apps, medical & insurance, corporate wellness and apparel. All these industries are touted to have immense future growth potential. Moreover, the technology's use can be expanded to many other industries that require tracking of fitness/body shape.
- 2) Conventional ways of taking body measurements are outdated and need serious replacement options.** MyFiziq technology is easy to use, accurate and more convenient than the traditionally used products such as scales, tapes and body scanners. Which can be expensive, hard to



MyFiziq offers multiple advantages over conventional ways to take body measurements

access and unable to be done by the end user in the privacy of their own home.

- 3) **The accuracy results are extremely promising.** The company, along with researchers from the University of Western Australia, has shown that the technology, in pre-production formats can measure dimensions of the human body with an average accuracy of 97.5% and body fat with an accuracy of 89%.
- 4) **The number of smartphone and wearable device users is expected to continue to rise.** By the end of 2018, two-thirds of adults across the globe are expected to own smartphones and are likely to account for 73% of internet consumption. This trend is expected to have a strong impact on the adoption of MyFiziq technology.
- 5) **There is significant demand for mobile health apps.** Currently, there is a high demand for mobile health apps owing to the benefits and privacy it provides to both healthcare providers as well as patients. According to a 2018 survey by Accenture, nearly half (48%) of healthcare consumers are using mHealth apps now, compared to just 16% in 2014. This bodes well for apps that track overall fitness and health of a consumer.
- 6) **MyFiziq has a potential for rapid uptake in the health & fitness segment.** It has already signed binding term sheets with fitness app developers, renowned trainers and fitness device companies to capture their user base. With the commercialisation of integrated apps, we believe MyFiziq has a significant near-term growth opportunity.
- 7) **The technology has a potential to replace the BMI calculation traditionally used by insurers to measure policyholders' health.** A study conducted by researchers from UCLA and UC Santa Barbara found that the BMI calculation is not reliable for classifying someone's health status. MyFiziq app's ability to identify the relationship between body fat and chronic disease markers makes it an ideal tool to track policyholders' health. Therefore, it has a potential to replace the BMI calculation in future.
- 8) **Corporates in industries that are at higher risk of human capital are likely to adopt MyFiziq technology.** These industries include aviation, insurance, logistics and transport to mention a few. They are likely to adopt wellness platforms, along with the MyFiziq technology, to mitigate this risk by providing a platform that will allow employees to work on improving health, engagement and productivity at their workplaces, furthermore by overlaying data sets such as incident and fatigue data, in conjunction with wearable information such as heart rate and sleep, MyFiziq data can be used to aid in preventing incidents by identifying at risk individuals due to their weight, measurements and overall total body fat.
- 9) **There is a significant opportunity for the use of technology in the apparel industry.** Garment returns due to incorrect size are increasing the cost burden on retailers and manufacturers. Additionally, much of incorrect size returns are sent to landfill. Therefore, in order to cut down return costs, and reduce environmental impacts of wrong size returns, companies are actively looking for technologies that allow their consumers to purchase clothes based on their body dimensions. We believe that MyFiziq technology can fulfil this need.
- 10) **We believe MyFiziq is currently undervalued.** We value the company using DCF approach between A\$0.91-1.08 per share based on base case and optimistic case assumptions, respectively. MyFiziq will derive



revenue from Licencing & Development (L&D) fees and subscription revenue targeting B2B client channels. We have followed a conservative approach in assuming number of B2B clients signed during the fiscal year and consumer base per B2B client, across four verticals. There could be a potential upside in revenue subject to MyFiziq finalisation of the WeChat transaction currently underway and the immense potential of the China market, which is not accounted for in forecasts due to limited clarity on the deal progress.

- 11) In an 'I want it here and now' society.** In a world of immediate access and convenience, MyFiziq has positioned itself in a mobile phone and therefore in the palm of the impatient consumers hands.

MyFiziq technology can measure body dimensions and shape

MyFiziq has developed and is now commercialising a revolutionary technology that can convert images of the human body taken via a smartphone or any other mobile digital device into a 3D image called an 'Avatar'. The Avatar is sent to the smartphone user, allowing them to view or rotate the image and measure body parts such as chest, waist, hips and thighs. The technology's primary objective is to help users track their change in body shape and dimensions over time for insurance, medical, wellness or assessing the impact of weight gain/loss or a fitness programme on their physical appearance. Additionally, the technology aims to enhance or extend the level of information available to users via mobile-based platforms and apps. It eradicates the need for traditionally used scales and tape measures that are highly prone to human error.

Image capture process using MyFiziq app is easy

A typical user-image capture process through the MyFiziq app interface involves four steps (Figure 2):

Input: The user enters details such as height, weight and gender through the app interface.

On-boarding: The user is given essential instructions/assistance to ensure that the image capturing process is seamless and the measurements returned are optimal.

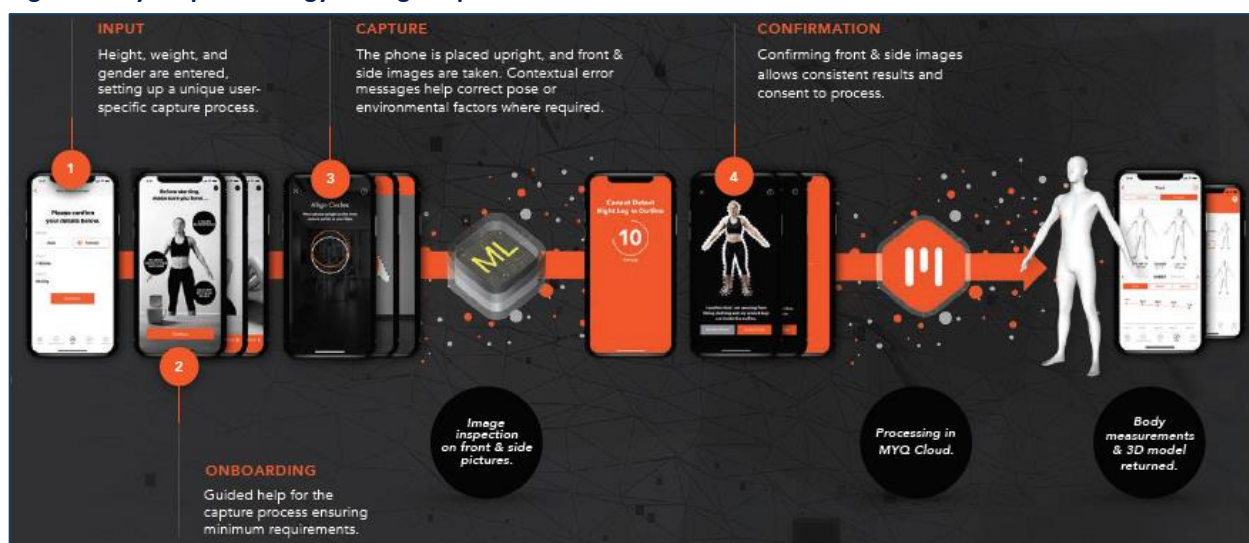
Capture: The user captures body images through the app. The smartphone is placed upright at approx. hip height, and front and side images are collected. The app notifies the user with contextual messages to help them pose correctly.

Confirmation: The user confirms front and side images and provides consent for the generation of a personal Avatar and measurements.

MyFiziq technology converts smartphone images into a 3D model called an 'Avatar' with accurate body measurements



Figure 2: MyFiziq Technology – Image Capture Process



Source: Company

Once the confirmation step is complete, MyFiziq leverages current generation smart phone machine learning technology to embed machine learning models directly into partner apps as part of the MyFiziq SDK offering to create non-personally identifiable segmented images for processing on a secure, enterprise-level cloud infrastructure.

MyFiziq has numerous advantages over traditionally used products

MyFiziq offers many benefits to the end-user over other available traditional products (Figure 3).

Accuracy: In a validation study conducted by Professor Timothy Ackland, Professor of Applied Anatomy and Biomechanics at the University of Western Australia, among ~800 participants, MyFiziq demonstrated 97.5% average accuracy across four circumference measurements –chest, waist, hips and thigh³.

Short end-to-end processing time: With the embedment of in-device processing capabilities (in January 2019), the end-to-end image processing time through the app has reduced massively (~15 seconds from the previous 60 seconds per attempt in the older version)⁴.

Automatic historical tracking: The app retains a copy of personal Avatars that are generated for a particular user. This helps users track fitness level and body changes over a period.

Cheaper: The app charges a nominal monthly subscription fee for its technology-based offerings – as opposed to the more expensive medical body scanners, home scanning equipment or scanning booths.

Mobility and convenience: The app can be imbedded on the user's mobile device and operated from home. The user does not need to visit any

MyFiziq demonstrated an accuracy of 97.5% across four circumference measurements – chest, waist, hips and thigh

³ See MyFiziq ASX announcement dated 18 October 2018 and headlined 'Accuracy validation study of MyFiziq leading technology'.

⁴ See MyFiziq ASX announcement dated 24 January 2019 and headlined 'MyFiziq To Release In-Device Processing'.



lab/hospital for body measurements. Therefore, offering far greater privacy, convenience and substantially lower cost.

Figure 3: MyFiziq vs. Other Available Products

	MY FIZIQ	Traditional scales	Standard Tape Measure	Medical Body Scanner	Home Scanning Equipment	Scanning Booths	Other Apps and Online Programs
Mobile capability	✓	Not practical	✓	✗	✗	✗	✓
Accurate circumference measurements	✓	✗	User dependent	✗	✓	✓	Depends
User can interact with avatar	✓	✗	✗	✗	✓	✗	✓
Rapid feedback (< 5 minutes)	✓	✓	✓	✗	✓	✓	✓
Automatic historical tracking	✓	✗	✗	✗	✓	✓	✓
Predictive modelling	✓	✗	✗	✗	✓	✗	✗
Low cost (< \$1)	✓	Depends	✓	✗	✗	✗	Depends

Source: Company

The company has released multiple technological updates over the past three years

MyFiziq technology's evolution over the past few years is noteworthy

MyFiziq initiated the development of its body-shape-tracking technology back in 2015 with the development of a free smartphone app created by the company's founders, Dr Katherine Iscoe and CEO Vlado Bosanac, with the technology and science led by Dr Amar El-Sallam. During the development phase, the app underwent various rounds of testing, including end-to-end load, and stress testing (by creating ~20,000 Avatars in a single instance) and user experience testing.

Post the successful completion of the testing and backend technological development, the app was submitted to the Australian iOS app store for review on 1 June 2016. On 20 June 2016, the app went live on the iOS app store and was made available for free⁵. The management's goal behind the launch of a free app was to refine algorithms and optimise it based on user experience. It also intended to track usage patterns before the company moved to monetise its technology by commercialising it through its partner apps.

Since its initial launch, the app has undergone several significant updates related to technology and functionality to improve user experience and take the technology closer to the commercialisation stage via partner apps. In October 2016, the company launched the first major update (v1.4.2) of the app. New functionalities included in-app image inspection and user-specific body contour guides thus making it far easier for the user to guide their way

⁵ See MyFiziq's ASX announcement dated 20 June 2016 and headlined 'MyFiziq Goes Live in the iOS App Store Reinventing the way health and fitness is measured'.



through the process. Through these updates, users were able to create specific body contours without environmental effects such as background colour and saturation⁶.

Following the release of a consumer facing app in FY2017, the company started conducting a number of proof-of-concept (POC) studies, data collections, and user experience testing with universities and other organisations to test its machine-learning models and optimise them before launching its app in the form of a suite of SDKs to integrate its technology into partner apps. At this time MyFiziq engaged with a German-based machine-learning expert (Senseape) to assist them in refining the following integrations:

Shifting of MyFiziq technology to a server-less, multitenancy backend infrastructure: In January 2017, MyFiziq started working with a cloud partner – ITOC Australia – who assisted MyFiziq to migrate its backend into a new server-less, multitenancy infrastructure, which in turn helped it increase app throughput and reduce the time required for the Avatar creation process and associated costs.

- By September 2017, MyFiziq completed the migration process. It moved its Avatar Creation Process to Amazon Web Services (AWS) compute service, Lambda. The service enabled MyFiziq to execute its code on a highly available computer infrastructure and run whenever required. This ultimately reduced the overhead cost of managing or provisioning servers. Additionally, it allowed MyFiziq and its partners to handle larger amounts of image creation requests without the need to provide a fleet of servers or worry about delayed processing time. The development enabled MyFiziq to rapidly deploy new tenant accounts and make production amendments with zero downtime to its customers.
- During the migration of the Avatar Creation Process to AWS, the company also started using AWS' interactive query service Amazon Athena and AWS Kinesis Firehouse for accumulating and processing large amounts of business data in real time and generating business insights. This provided MyFiziq the ability to query historical data and gain deeper analytical insights by paying compute fee to AWS.

Integration of the front camera within the MyFiziq app to support avatar creation without the need for an additional person: This was another important step in the direction of commercialisation suggested by the POC study conducted in collaboration with Senseape. Integration of the front camera was completed with the launch of v1.7.0 version of the MyFiziq app. The version became MyFiziq's first commercial-ready SDK offering, that enabled partner companies to integrate MyFiziq technology into their apps for their end-users. The version also overcame limitations of the earlier app (which required two individuals to capture images). In this version, the user needed to place the smartphone on a surface at a near-hip height and follow the instructions on screen (Figure 2) to get the avatar. It included features such as in-device normalisation and avatar object creation, which significantly reduced the cost to company and improved load time.

These new developments helped MyFiziq fast-track goals, such as partner dashboards, image processing, real-time image inspection, multimodal machine-learning and major performance optimisation⁷.

After the successful launch of the company's first iOS SDK offering for partners, MyFiziq started engaging with prospective clients across a number

Initially, MyFiziq launched its technology as a free app to understand user experience and feedback

⁶ See MyFiziq's ASX announcement dated 17 October 2016 and headlined 'MyFiziq announces Executive Changes and statistics released on App 1.4.2'.

⁷ See MyFiziq's ASX announcement dated 20 December 2017 and headlined 'MyFiziq launches front camera, single user application'.



The technology has undergone several backend updates to make it ready for commercialisation

of verticals, including health & fitness and corporate wellness, to make its body tracking solutions commercially available for end-users through partner apps.

In April 2018, MyFiziq initiated the development of its Android SDK offering. The development of the base version of the MyFiziq Android SDK suite was completed in July 2018. The base Android SDK offering has also passed third-party penetration and security testing with Diamond Cyber Security, founded by former Australian Special Forces personnel. This supports MyFiziq's IP of both iOS and Android platforms.

In May 2018, the company removed its consumer-facing MyFiziq app from the Australian iOS app store, in line with its strategy and commercialisation plans of launching its technology in the form of a partner app, which was expected to be used by partner's end-users for a subscription fee⁸. Simultaneously, the company launched its first major SDK update, which included⁹ the following:

The incorporation of a new classification machine-learning model was a result of an extensive data collection process performed by MyFiziq/BCT joint venture (JV) and a number of universities across multiple regions. This model augmented computer vision techniques, which were used as part of a 3D model creation process. The update ensured that the company continued to stay at the forefront of artificial intelligence while performing anthropometrical measurements.

The incorporation of new image-inspection machine-learning process involved the development of compute-vision-based pre-processing techniques to enable an initial predictive model to be trained via Caffe deep learning framework. The resulting model was then optimised to fit MyFiziq's current production level using Google's TensorFlow. This approach ensured that the core functionality will be available across both iOS and Android devices with limited technical overheads while converting for either of these platforms. For iOS, the model was converted into Core ML, and the image-inspection functionality was incorporated into SDKs. During use, the inspection model is called on the image capture to determine the exact location of the user's head, hands and feet. Advanced computer vision techniques were used to statistically verify the output and determine that the results correctly correlate to an expected human shape and are within expected boundaries.

The front-camera-optimised on-boarding experience was implemented as a result of analysis of customer feedback and application metrics, which identified the need for users to have a clear understanding about the prerequisites and requirements within the app while creating an avatar. Keeping this in mind, MyFiziq enhanced users' on-boarding screens by incorporating contextual visual instructions, assisting users prior to image capture, helping reduce cognitive overload to improve customer feedback and providing better user experience.

In January 2019, the company announced its plans to move its patented segmentation model from the AWS platform to Apple's iOS device platform to enhance app performance and better protect users' imaging data. This movement will enable MyFiziq to use in-device embedded machine-learning models for creating non-personally identifiable segmented images for processing, which will further help protect the anonymity of the user. In addition, in-device processing will offer other technical and cost-saving

⁸ See MyFiziq's ASX announcement dated 29 May 2018 and headlined 'MyFiziq to remove application from Apple App Store and release v18.2.1 SDK for partners'.

⁹ See MyFiziq ASX release dated 29 May 2018 and headlined 'MyFiziq to remove application from Apple App Store and release v18.2.1 SDK for partners'.



benefits. For instance, the incorporation of the in-device processing model is believed to substantially reduce and compress the current upload/return time by 95%. Additionally, it will reduce the end-to-end processing time to 15 seconds from 60 seconds (current processing time). The update will also allow MyFiziq to process up to 4,800,000 Avatars an hour without making any change to the current AWS infrastructure that the company has at the backend. The iOS version that included in-device processing was expected to be released in April 2019; however, the Android version via TensorFlow model is currently under development and nearing completion¹⁰.

It seems that MyFiziq is making considerable investments in upgrading its technology to make it more user-friendly. We believe that this would have an extremely positive impact on the technology's adoption across the four segments that it targets.

Global health & fitness market presents an overwhelming opportunity for MyFiziq

Health & fitness is one of the most lucrative segments targeted by MyFiziq. Growth in this market can be attributed to rising prevalence of lifestyle diseases, e.g., obesity, as a result of poor modern habits such as sedentary work environments, bingeing on fast food and consumption of unhealthy processed foods. According to a 2017 study published in *The New England Journal of Medicine*, over 2.2 billion people worldwide were obese or overweight in 2015¹¹. Further, according to the WHO, global obesity has nearly tripled since 1975, with 39% adults being overweight and 13% being obese in 2016. The growing number of obese individuals, especially adults aged 18–40 years, presents a significant addressable opportunity for MyFiziq as this age group represents the primary user base of smartphone apps. Moreover, according to a 2015 *Global Health and Wellness survey*¹², over 50% (~15,000) of the total surveyed respondents were trying to lose weight across 60 countries, including in APAC, Europe and North America. Therefore, MyFiziq has the potential to target a considerable population across the world^{13,14}. A 2018 report by the WHO also stated that obesity affected more women than men (15% vs. 11%) globally in 2016. Systematic review and meta-analysis conducted by the University of Lisbon demonstrated that women are more significantly trying to lose weight than men. Also, evidence suggests that 74% women are not happy with their bodies and their looks. Therefore, targeting women who intend to lose weight and attain a desirable body shape is expected to allow MyFiziq to gain significant market penetration¹⁵. Furthermore the privacy of the application provides this global segment will be a major contributor to its uptake, with a high prevalence of body image issues put to rest with images processed in the phone and then deleted.

Besides the growing end-user base, MyFiziq technology is empowered by the rising adoption of smartphones and health apps. According to estimates by Zenith Media, a UK-based ROI agency, two-thirds (~67%) of the world's adult population owned a smartphone in 2018. The increasing adoption of smartphones has resulted in an increase in the number of app downloads. According to Statista, 178.1 billion apps were downloaded in 2017, and this

Rise in obesity, along with growing adoption of smartphones and health apps, represents a lucrative opportunity for MyFiziq

¹⁰ See MyFiziq ASX release dated 24 January 2019 and headlined 'MyFiziq To Release In-Device Processing'.

¹¹ The study analysed the prevalence of overweight or obesity in children and adults between 1980 and 2015.

¹² Nielsen conducted an online Global Health and Wellness Survey among >30,000 respondents from 60 countries.

¹³ Source: Nielsen, Health Eating Trends Around The World January 2017.

¹⁴ Source: WHO, Obesity and overweight key facts 2018.

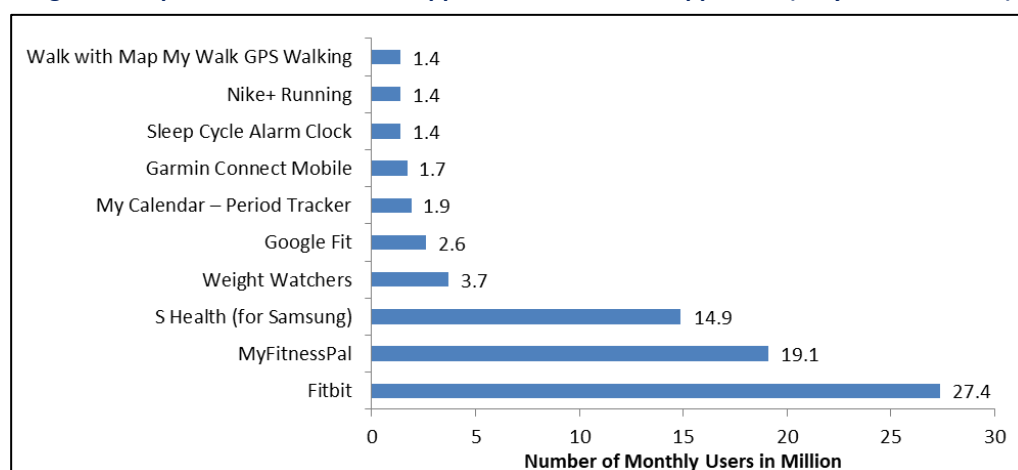
¹⁵ J. Obes Rev. 2017; (18)1:32–50.



number is anticipated to reach 258 billion by 2022. In fact, within the app industry, mobile health (mhealth) apps are gaining significant traction. In 2017, ~325,000 mhealth apps were available in the app stores, with total downloads estimated at 3.6 billion^{16,17,18}.

Within the mhealth segment, the use of health & health apps grew 330% between 2015 and 2017¹⁹. Currently, weight loss and workout apps capture 73% of the overall health & fitness app usage. ~75% of active users visit health & fitness apps at least 2 times a week, whereas 25% users visit more than 10 times a week. App and device companies recorded over 74.5 million active users of fitness apps or devices²⁰, including Fitbit, MyFitnessPal and S Health, in the US in May 2018 (Figure 4). The growing number of fitness app users – anticipated to reach 972 million by 2023 – presents mammoth future opportunity for MyFiziq within this segment^{21, 22, 23}.

Figure 4: Popular Health & Fitness Apps in US: Number of App Users (May 2018, millions)



Source: Statista

MyFiziq is targeting apps and devices, gyms and personal trainers, online digital training, and sport and exercise brands

Meanwhile, as part of its strategy to focus on the health & fitness industry, MyFiziq is currently targeting three other customer segments (besides apps and devices) within the health & fitness market – gyms and personal trainers, online digital training, and sport and exercise brands offering products and services to customers for losing or gaining weight and managing their diets effectively. These markets are also quite attractive in terms of both value and volume. For instance, health clubs, including gyms and personal-trainer-based health programmes, have recorded a significant rise in memberships over the past years. According to a 2018 report by IHRSA²⁴, over 174 million individuals globally signed up for health club memberships in 2017 (translating to ~US\$87bn in revenue for health & fitness clubs). The number of memberships is expected to reach 230 million by 2030. The US had the largest number of club members (~61 million), followed by Germany, which had ~10.6, million members. APAC also attracted a high number of club members – ~22.5 million members from 14 markets, including Singapore, Japan, China and India²⁵.

¹⁶ See *Smartphone penetration to reach 66% in 2018* by Zenith Media, 16 October 2017.

¹⁷ Source: Statista, Number of mobile app downloads worldwide in 2017, 2018 and 2022 (in billions).

¹⁸ Source: Research2Guidance, mHealth App Economics 2017.

¹⁹ According to a research by Flurry Analytics.

²⁰ Devices include smartwatches or fitness tracking bands.

²¹ See *Health & Fitness App Users Are Going the Distance with Record-High Engagement* by Flurry Analytics, 7 September 2017.

²² Source: Statista, Most popular health and fitness apps in the United States as of May 2018, by monthly active users (in millions).

²³ Source: Statista, Fitness market directory.

²⁴ International Health, Racquet & Sportsclub Association is a non-profit trade association, which represents health & fitness facilities, gyms, spas, sports clubs and suppliers worldwide.

²⁵ See *IHRSA 2018 Global Report: Health Club Industry Revenue Totalled \$87.2 Billion in 2017* by Melissa Rodriguez, IHRSA, 29 May 2018.



Growth in the number of customers across the vertical targeted by MyFiziq presents a significant opportunity for the company as it can provide its proprietary body-shape-tracking technology to end-users to track body measurements and shape while they perform routine sports, workouts, training or dieting, and in turn generate shareholder value.

MyFiziq's advantages over traditional technologies in the medical & insurance sector

With the establishment of MyFiziq/BCT JV in Singapore, MyFiziq entered the medical & insurance sector. According to the *2017 Global Insurance Market Opportunities* report by Aon, the market was estimated to be US\$9.6tn²⁶ in 2016²⁷. MyFiziq is targeting this segment to replace the outdated body mass index (BMI) scale that was found to be an unreliable tool for measuring individual's health with its body-shape-tracking technology. As per a 2016 publication released by UCLA and UC Santa Barbara, there is a good chance of misclassification of individual's health when using the BMI scale. Researchers investigated the link between BMI and health markers such as blood pressure, glucose, cholesterol and triglyceride levels by using data from the most recent National Health and Nutrition Examination Survey²⁸. They found that over 50% of individuals (n=40,420) who were earlier considered to be overweight and 29% who were considered to be obese on the BMI scale were actually metabolically healthy. On the other hand, 30% of the individuals whose weight was considered to be in the 'normal' range on the BMI scale were actually metabolically unhealthy. The study identified that health data of over 54 million Americans was misclassified as 'unhealthy' on the BMI scale. This is an enormous burden on the insurance sector with these individuals requiring medical checks prior to gaining cover from the perspective insurer. Therefore, replacing the BMI scale with another tool based on MyFiziq technology can solve the problem of misclassification of an individual's health status. Insurers can reap benefits from this technology by measuring the total body fat percentage (which is considered to be closely associated with chronic health conditions such as diabetes, cardiovascular disease or mortality) or body circumference in real time, which in turn helps them accurately track policyholder's health during their policy tenure^{29,30}.

The growth potential of MyFiziq within this vertical is further accentuated by the rise in risk of occurrence of chronic diseases such as diabetes and obesity in adults (a population also representing the primary user base of smartphones and mobile apps). According to the American Heart Association, more than two-thirds of American adults (aged >20) and 32% children are overweight or obese in the US. Moreover, 50% of the adult population in China and the US is diabetic and pre-diabetic. However, 90–95% of these populations are not aware of the category of disease (diabetic/prediabetic) in which they fall. MyFiziq technology plays a pivotal role in allowing insurers, government and healthcare organisations to rapidly, easily, accurately and non-invasively screen these individuals for primary indicators of chronic diseases and monitor at-risk individuals periodically³¹.

Growing adoption of digital technologies such as wearable devices, including smartwatches, fitness bands and smartphone apps, by insurers also creates

MyFiziq technology has the potential to predict the risk of occurrence of chronic diseases in insurance policyholders

²⁶ Includes both global insurance premium (US\$5.1tn) and global insurance capital (US\$4.5tn).

²⁷ See *Global Insurance Market Opportunities* by Aon 10 September 2017.

²⁸ National Health and Nutrition Examination Survey is a programme that assesses health and nutritional status of adults and children in the US.

²⁹ See *BMI: An unreliable scale that could alter your insurance premium* by Rebecca Plevin, UCSF, 10 February 2016.

³⁰ *Am J Prev Med.* 2011 Oct;41(4 Suppl 2):S77-86.

³¹ See MyFiziq ASX release dated 16 July 2018 and headlined 'Body Composition Technologies update'.



significant opportunity for MyFiziq in this space. These companies are adopting digital devices to track policyholder's health trends (current/future) to make informed decisions on the premium value, policy statements or claims. These technologies allow policyholders to reap financial benefits in terms of reduced premium costs, co-payments or gift cards upon achieving a certain level of health condition over an interval³². For instance, in 2015, one of the oldest and largest North American insurers, John Hancock, introduced the Vitality programme for its policyholders. The programme offered savings in terms of premium costs (up to 15% savings on annual premium costs) and rewards to policyholders upon completion of health-related activities such as exercising, getting an annual health screening or receiving flu vaccine, and providing health & fitness data to insurers through the Fitbit band offered for free by the insurer³³. Such initiatives indicate that there is a lucrative opportunity for MyFiziq to cater to fitness tracking demands from insurance companies and generate revenue for its shareholders by offering its body fat and/or circumference tracking technology to insurance companies³⁴.

Corporate wellness and online apparel are other important markets for MyFiziq

Corporate wellness market has tremendous growth potential

MyFiziq forayed into the corporate wellness market by signing a binding term sheet with a Singapore-based corporate wellness platform – WellteQ. With this collaboration, the company aims to target the growing corporate wellness market, valued at US\$47.5bn in 2017 and expected to grow at an annualised growth rate of 4.8% over 2015–2017³⁵. The Global Wellness Institute projects that 3.2 billion workers globally are increasingly falling sick – they suffer from chronic diseases, are stressed, unhappy and sometimes unsafe at work. The economic burden of unwell workers – in terms of both medical expenses and lost productivity – is tremendous, with a possibility to reach 10–15% of the global economic output. In the US alone, the costs related to chronic diseases, work-related injuries and illnesses, stress and employee disengagement amount to 12% of the GDP. Workforce unwellness may be even costlier in the rest of the world in the wake of higher rates of employee disengagement and work-related injuries and illnesses reported globally³⁶.

With a rise in adoption of wellness tools – wearables, HR analytics platforms, apps, etc. – especially by industries that are at a higher risk of human capital, including aviation, insurance, logistics and transport, bodes well for MyFiziq's future in this segment. Companies in these industries often run corporate wellness programmes to engage employees in health and risk assessment and activities such as exercise or running, and provide rewards in return. These programmes often increase employee productivity.

According to a 2018 report by the US Bureau of Labour Statistics, the current growth in employee productivity is slower than historical growth. This may be attributable to a low level of engagement among employees, sleep deprivation or excessive use of the Internet for non-office work and poor health conditions. This has led to a spike in the number of sick leave days. As

Decline in productivity and rise in sick days are driving adoption of wellness programmes by corporates

³² See *An insurance company wants you to hand over your Fitbit data so it can make more money. Should you?* By Christopher Ingraham, The Washington Post, 25 September 2018.

³³ See *How Health Insurers Are Advancing Health Tech* by Michael Rucker, Active Wellness, 5 June 2017.

³⁴ See *John Hancock Leaves Traditional Life Insurance Model Behind to Incentivize Longer, Healthier Lives* by John Hancock, 19 September 2018.

³⁵ As per a 2018 report by Global Wellness Institute.

³⁶ Source: Global Wellness Institute, *The Future of Wellness at Work* 2016.

Increasing cost of returns and need for customisation are pushing retailers to adopt apps that provide body measurements

per a 2017 report by Statista, 58% respondents (aged 18–30) took at most five leave days in 2017 due to sickness³⁷.

Meanwhile, the growing adoption of mhealth tools by health-conscious individuals has also acted as a key factor driving the adoption of wearable or app-based solutions by corporates. We believe that MyFiziq has a potential to augment corporate wellness solutions (along with partners such as WellteQ) through MyFiziq's revolutionary technology. The integration of this technology with Wellness platforms would allow corporate employees to map their anthropometric data against activity, blood pathology, stress levels and sleep patterns, and analyse their health in a robust manner. This creates a unique opportunity for MyFiziq, with a significant upside potential.

Online apparel is a relatively new but an attractive segment for MyFiziq

In September 2018, MyFiziq announced its plans to target the online apparel vertical as a strategy to expand its business reach and capture share of the growing online apparel market, which is expected to post a 21% CAGR during 2017–2021 to generate US\$4.88tn.

Within this segment, MyFiziq expects to target two important needs of the industry – cost of apparel returns and clothing customisation. The online apparel market is characterised by an increasing cost of apparel returns, resulting from incorrect sizing or over-ordering of clothes, and the environmental impact of many of these clothes being sent to landfill. According to the IHL Group, a global research and advisory firm for the retail and hospitality industries, the cost of apparel returns was valued at US\$62.4bn (in 2015) and is expected to reach US\$96.41bn by 2020. The rising cost of returns acts as a major issue (for retailers) in terms of financial returns^{38,39}.

Meanwhile, the growing need for clothing customisation also creates an opportunity for MyFiziq. A number of clothing brands, including e-commerce companies, are gradually realising the importance of custom clothing. For instance, in 2017, e-commerce giant Amazon acquired Body Labs for an estimated US\$50-70m, a company focussed on creating 3D body models to support B2B applications such as for conducting virtual clothing trials. Various sources suggest that Amazon will use Body Labs' technology to scale up its own fashion business by creating a system for customers to virtually try on clothes or shop for styles that are better fitted to their body shape⁴⁰. The increasing traction of such technologies in the e-commerce industry clearly indicates the importance of body measurement technologies – such as that of MyFiziq – for retailers to generate business value. We believe that the technology has a potential to be used as a tool for retrieving dimensional information to design custom fabric patterns that will further help retailers in creating custom garments for buyers and in turn generate revenue for their shareholders.

³⁷ Source: Statista, Number of sick leave days U.S. adults took last year as of 2017, by age.

³⁸ See ASX announcement dated 21 September 2018 and underlined 'MyFiziq leading technology to enter online apparel'.

³⁹ As per a 2018 report by Rakuten Fits Me.

⁴⁰ See Amazon has acquired 3D body model startup, Body Labs, for \$50M-\$70M by Natasha Lomas, Jordan Crook, Techcrunch, 3 October 2017.

MyFiziq has made considerable progress in its commercialisation and marketing initiatives

Since its inception, MyFiziq has been quite actively inking deals and collaboration agreements to create business awareness and enhance technology reach and customer base.

In 2015, the company invested considerable efforts in marketing and branding its technology. In September 2015, it signed an MoU with Australian swimming champion Michael Klim and fashion entrepreneur Lindy Klim to assign them as its brand ambassadors for an initial term of 12 months. Through this partnership, MyFiziq intended to increase the awareness of its solutions across its target areas, including health and wellness industry, sports professionals, sporting organisations, well-known individuals and the fashion industry. During 2016–2018, MyFiziq made limited investments in any public facing branding and marketing of its solutions and focused more extensively on its B2B approach signing binding agreements with 3 US based companies and sporting identities being Fitocracy, Mayweather Boxing & Fitness and Conor McGregor FAST. These organisations according to the company's releases will target a combined 1.15m users in the first 12 month after the product launch.

More recently the company has executed binding term sheet with Evolt360 and binding agreement with Tencent owned WeChat to work together to provide a solution to its insurance and fitness applications WeSure/WeFit. Additionally, in March 2019, it released the corporate wellness platform video along with its partner company WellteQ, depicting the use of MyFiziq technology and WellteQ's advanced analytics capabilities within the corporate wellness space. The release of this video is expected to commence the marketing of its corporate wellness solution to WellteQ corporate clientele, including both Australian multinational companies and global Fortune 500 companies such as Qantas, Bupa, Prudential, Telstra, Credit Suisse, SCOR and Toll. The company is expected to release similar videos highlighting the use cases of its technology across other customer verticals, including fitness, insurance and medical, and apparel in the near future.

MyFiziq is collaborating with multiple companies to provide its technology through partner apps

Health & Fitness Segment

During 2017–2018, MyFiziq signed binding term sheets⁴¹ with a number of health, fitness and wellness companies. Many of these agreements have been signed within North America and target a certain number of users in the already existing pool of partners' user base or followers on social media portals.

In September 2017, MyFiziq signed a strategic partnership with one of the world's leading fitness apps, Fitocracy. The collaboration aims to target Fitocracy's current user base of over 2 million paid subscribers and 12 million monthly active users. Initially, the Fitocracy aims to capture 500,000 of its current users⁴² to offer its solution via subscription-based pricing model. Although substantially delayed due to a European based acquisition, it expects to begin integration of MyFiziq iOS SDK offering into the Fitocracy app shortly.

⁴¹ Binding Term Sheet outlines the terms and conditions of a proposed joint development agreement signed between the two parties.

⁴² Includes individuals who are following Fitocracy coaching programmes.

MyFiziq has signed binding term sheets with various health & fitness companies

The company entered into a strategic partnership with FitLab – a digital media and technology company that creates solutions for the sport and fitness industries – to integrate MyFiziq technology into a revolutionary global fitness platform, Mayweather Boxing + Fitness, developed by famous boxer Floyd Mayweather. The partnership targets Mayweather’s fan base of ~41 million social media followers. Initially, Mayweather Boxing & Fitness aims to capture 1% or 400,000 followers of Mayweather’s fitness community who follow Mayweather’s fitness programmes and are expected to use the newly developed Mayweather Boxing + Fitness mobile training app, which will incorporate MyFiziq technology.

In October 2018, the company signed the third binding term sheet in North America with MVMNT – a provider of branded health and fitness solutions for iconic athletes and sports brands – to integrate its technology with partner app McGregor FAST. McGregor’s fitness system brings training and nutrition techniques to fitness enthusiasts and fans of UFC icon Conor McGregor⁴³. The partnership will benefit from promotion among Conor McGregor’s social media base, consisting ~41.5 million followers. Through this alliance, the MVMNT aims to capture 250,000 UFC community followers who follow McGregor’s training plans.

In April 2019, MyFiziq signed a binding term sheet with Evolt360 (Evolt) – a device/machine-based intelligent body scanning technology purchased by health & fitness companies (e.g., Life Fitness Distributors and Anytime Fitness). We understand the scan costs US\$30–50 per customer and current locations process 50–1,500 scans per month. MyFiziq technology aims to extend the reach of Evolt’s technology to consumers at home. It aims to allow Evolt’s current active user base, comprising over 500,000 active users, to track changes in their body dimensions more regularly and in the privacy of their own home. Evolt initially aims to achieve 100,000 subscribers who would use its technology-based solution along with the company’s technology for the first 12 months. The partnership – expected to commercialise by July 2019 – is expected to generate A\$3.6m per annum for MyFiziq once the initial target is achieved. Furthermore, Evolt has global orders for its technology of 4,000 units which in turn will expand the base of accessible users to MyFiziq.

Corporate Wellness Segment

In March 2018, MyFiziq signed a binding term sheet with an Australia-based corporate wellness platform – WellteQ – to expand its digital tracking capabilities in the global corporate wellness market. WellteQ is one of the leading digital wellness solutions for employee health engagement and HR data analytics. It is recognised as a leading B2B wearable agnostic platform that offers a suite of engagement programmes, including activity challenges, mental wellness, financial wellness, virtual coaching and telehealth for employees’ wellness. Through the collaboration, MyFiziq plans to integrate its technology with a number of existing WellteQ client solutions, which are already using its wellness analytics platform, to earn revenue in the form of subscription fees.

MyFiziq and WellteQ have agreed to offer an integrated solution – comprising MyFiziq technology and WellteQ’s analytics capabilities – to 50 initial clients, WellteQ’s existing partners. These include logistics and insurance companies – primary target companies for MyFiziq corporate wellness offering due to high human capital risk – to build an integrated solution for the benefit of corporate employees.

MyFiziq’s alliance with WellteQ is expected to create huge opportunity within the corporate wellness vertical

⁴³ Conor McGregor is an Irish mixed martial artist and boxer.



In April 2018, MyFiziq and WellteQ signed a white-label wellness contract with a life insurance company – Prudential Singapore – to build a proof-of-concept (POC) solution that will allow Prudential Singapore to facilitate health improvement and employee engagement among its workforce. As per the contract, Prudential Singapore paid MyFiziq to build the POC app for its employees and an active user fee for utilising its technology. In September 2018, MyFiziq and WellteQ launched a wellness platform, PRUedge, for the employees of Prudential Singapore. It was launched post the successful completion of necessary testing of the POC solution. Post the white-label app launch, the company extended the POC of the wellness platform to the employees of Prudential Singapore till March 2019.

In December 2018, MyFiziq and WellteQ signed another contract with Australia's largest transport and logistics provider, Toll. The contract entailed that WellteQ, along with MyFiziq, will provide an integrated wellness solution to Toll's workforce (consisting over 12,000 Australia-based staff). The app is expected to be launched on May 20th 2019 and will pay A\$5 per user per month for the initial 2,400 employees regardless of uptake seeing MyFiziq receive an initial \$12,000 of monthly app revenue (while extending usage to the remaining employees over 12 following months).

Medical & Insurance Segment

MyFiziq tapped into the medical & insurance market by executing its first commercial transaction in June 2017 with a Singapore-based financial services company, Gold Quay Capital (GQC). The joint venture was registered as Body Composition Technologies (BCT) in September 2017. As per the transaction terms, GQC, with its investor network, agreed to provide A\$5m as funding – of which MyFiziq received an initial A\$1.5m as licence fee for its technology and A\$2m capital was allocated to BCT for the development of a tool that will help insurers track policyholders' health conditions. By November 2017, GQC concluded the first licence payment of MyFiziq technology being \$1.5m with a balance of \$500,000 to be paid at the conclusion of BCT's next capital raising round.

Post the conclusion of the licence payment, BCT and MyFiziq commenced operations to develop and deliver a revolutionary tool that would allow insurers and medical practitioners to keep an up-to-date record of patients' or policyholders' body composition data (and ultimately replace the BMI scale traditionally used to measure health data). Both the companies started working along with the University of Western Australia on a project to collect image data (from 1,300 individual participants) and conduct trials for the app.

The development of the first prototype version of the BCT app was completed in January 2018. Post completion, BCT started marketing its newly created prototype app in APAC and other regions to potential insurer partners where the technology had been well received. In fact, during H1 2018, it signed multiple data collection agreements with universities and healthcare organisations across Australia, Thailand, Taiwan and Indonesia to collect imaging data from thousands of participants of major ethnicities. Currently, it is in the process of finalising data collection agreements with universities and medical institutions located across the US, Singapore, China and South Africa. Over 11 insurers across Asia, Europe and the US are also testing the company's technology with the objective to understand the app and its current functionality and user experience. All these agreements are expected to provide BCT with sufficient validation data required to optimise the app. These organisations are also conducting independent validation studies pertaining to the BCT app and outputs, which will help the company make the

app more robust. In October 2018, the company also revealed the results of one of the validation studies, conducted by a highly published and renowned professor of the University of Western Australia. The study rigorously tested/trained the BCT app model across 800 subjects and achieved an average accuracy of 89% for the percentage body fat score when compared with the criteria determined by dual-energy X-ray absorptiometry (iDXA), a body composition measurement technology and a 97.5% accuracy across body circumference measurements. The results demonstrate that the technology has the ability to not only track body circumference, but also measure and track the changes in the total body fat over a period.

The efforts paid off in March 2019, when BCT and MyFiziq signed the first framework/collaboration agreement with a China-based company Tencent's insurance platform – WeSure. Under the terms of the framework agreement, each of the companies agreed to assess the implementation and best-user engagement protocols to allow WeSure and WeFit⁴⁴ app subscribers access to the technology for fitness, wellness, and insurance-related activities. Under the terms of the agreement, WeSure has been granted the right to negotiate commercial terms for exclusivity within Mainland China. The agreement is a fantastic opportunity for MyFiziq to allow it to penetrate the Chinese market in the largest communication platform in China and be recognised globally.

Apparel Segment

Within the apparel segment, MyFiziq is currently working on using data captured from images through smartphones to accurately measure customers' dimensions and auto fit them to the right garment size while shopping online. MyFiziq is also expected to have the ability to integrate with any online retailer app with a simpler SDK. This will enable brands to design customised solutions and allow customers to choose the correct clothing size while shopping online.

The growing number of partnerships and collaborations clearly indicates the level of interest that the MyFiziq technology is generating across multiple customer verticals and regions, including North America and APAC. We believe that these agreements are likely to create a mammoth upside opportunity for MyFiziq's shareholders going forward. Moreover, when assessing the landscape of this technology and potential competitors we have found limited challenges to the company currently. With most competitors working within the confines of an additional device, rather than the convenience of a mobile phone which the consumer already owns or has access too. This accordingly may be in direct correlation to the MyFiziq patent family and its ability to block alternative methods for using a mobile device.

MyFiziq's technology seems to be generating a high level of interest across segments

⁴⁴ WeFit is a health plan and discount-rewarding scheme that incentivises WeChat's active users to live healthy lives. The benefits include reduced rates on insurance packages, free medical check-ups, and discounts on gym memberships and sports apparel.



Valuation

In the following section we attempt an initial valuation range for MyFiziq. Please note that the assumptions and end valuation pertained in this report are those of Pitt Street Research. The assumptions have been modelled from the information we have gathered from the company's announcements and the general market. MyFiziq has not played a role in the parameters Pitt Street have used nor has it supplied any financial information used to conclude the valuation.

We value MyFiziq based on a Discounted Cash Flow (DCF) model and have arrived at two intrinsic values of A\$0.91 and A\$1.08, based on base case and optimistic case (bull case) assumptions, respectively.

To value MyFiziq we made certain assumptions about growth in usage, but for conservatism's sake we only valued two income streams – subscription and licence & development income. We valued the revenue streams out to FY25 and then extended the DCF model by growing revenue at a modest 5%-7% p.a. to FY29 while maintaining EBIT margins at ~30%.

A diffusion-based model for subscriptions:

The company has already signed five clients or B2B partnerships (Fitocracy, Mayweather Boxing + Fitness, Conor McGregor – Fast, Evolt, WellteQ). We generated user models based on these five clients out to 2025 and assumed, as per company disclosures, that initial usage across this client base would be in the order of 1.3 million users by the end of 2020, growing to 2.4 million users by 2025. We assume 1.3 million represents the 'Innovators' and 'Early Adopters' across the client base but that by 2025 the MyFiziq app has mainstreamed into 'Early Majority' class of user⁴⁵. That this approach is reasonable is suggested by the speed with which fitness-type apps have diffused across comparable target audiences over the last seven or eight years⁴⁶.

Our pricing model used for MyFiziq's key customer vertical of health & fitness assumes a declining charge rate with increasing volume as per the slabs shown below.

- 0 – 100,000 active users - A\$2.99 per month per user
- 100,001 – 250,000 active users - A\$2.50 per month per user
- 250,001 – 500,000 active users - A\$1.99 per month per user
- 500,001 – 1,000,000 active users - A\$1.50 per month per user

We have not included the WeChat partnership in our forecast due to availability of limited information on the progress on the deal execution, which could also be a potential catalyst in the company's future revenue growth.

L&D revenue: Another source of revenue for MyFiziq will be L&D income based on the agreement and nature of services offered. We have assumed both average licence income per firm and average development income per firm as A\$1m. We have assumed a steady increase in the number of new firms signing up to use MyFiziq services/applications from 1 in FY19 to 5 in FY25.

⁴⁵ As per Rogers' influential Diffusion Theory, which purports to explain, using a standard adoption curve, the spread of new ideas and technology. In the standard Diffusion mode Innovators are generally considered the first 2.5% of users of a new product or service, Early Adopters are the next 13.5% and the Early majority are the next 34% of the users, that takes the total diffusion to 50%. See Diffusion of Innovations, 5th Edition by Everett M. Rogers (New York, Simon & Schuster, 2003).

⁴⁶ Witness, for example, Fitbit's rise to over 27 million active users by the end of 2018 – source: Fitbit,

The L&D revenue is expected to contribute ~11% to the total revenue over FY20-25.

Operating costs: MyFiziq is expected to achieve breakeven at 153,000 active users, which is ~15% of 1 million users. We have assumed a linear growth progression in costs with operating cost constituting ~70% of sales.

Discount rate and terminal value: We considered MyFiziq as a high-risk company and applied a market risk premium of 9.5%, which resulted in a WACC of 12.1%. We used a conservative 0.5% terminal growth rate in the DCF model.

The resulting DCF valuations and sensitivities have been summarised in Figure 5 and Figure 6, respectively. Our base case and optimistic scenario have yielded a value per share of A\$0.91 and A\$1.08, respectively, with a mid-point of A\$0.99 per share.

Figure 5: DCF valuation for MyFiziq

Valuation (A\$m unless specified otherwise)		
	Base Case	Bull Case
Present value of FCF	76.1	83.3
Present value of Terminal FCF	57.1	77.3
Enterprise Value	133.2	160.6
Net debt (cash)	(3.5)	(3.5)
Minority interest	-	-
Equity value	136.8	164.2
FY 2019 Diluted Shares (m)	151.0	151.0
Implied price (AUD cents)	90.6	108.7
Current price (AUD cents)	26.0	26.0
Upside (%)	248%	318%

Source: Pitt Street Research



Figure 6: Sensitivities of our model to WACC and Terminal Growth Rate

Sensitivity Analysis									
WACC	12.1%								
Terminal Growth Rate	0.50%	Change in WACC							
Implied Price (AUD cents)	90.6	11.3%	11.6%	11.8%	12.1%	12.3%	12.6%	12.8%	13.1%
Change in Terminal Growth Rate	-0.25%	94.9	92.5	90.2	88.0	85.9	83.9	82.0	80.2
	0.00%	95.9	93.4	91.1	88.9	86.7	84.7	82.7	80.8
	0.25%	96.9	94.4	92.0	89.7	87.5	85.4	83.4	81.5
	0.50%	98.0	95.4	93.0	90.6	88.4	86.2	84.1	82.2
	0.75%	99.1	96.5	93.9	91.5	89.2	87.0	84.9	82.9
	1.00%	100.3	97.6	95.0	92.5	90.1	87.9	85.7	83.7
	1.25%	101.6	98.7	96.1	93.5	91.1	88.8	86.6	84.4

Source: Pitt Street Research

Re-rating MyFiziq

We see a number of factors contributing to a re-rating of MyFiziq towards our valuation range:

- The ability of the company to attract more B2B clients within the health & fitness, corporate wellness and insurance segments.
- The ability of company to be able to penetrate a larger user base of its current clients with continuous technology upgrades.
- The capability of the company to commercialise a SDK offering / white-label app for the apparel market.
- The potential of MyFiziq technology to be expanded into areas other than the ones the company is already targeting.

MyFiziq has a strong management team

Vlado Bosanac, the current CEO and Co-Founder, joined MyFiziq as CEO on 17 October 2016. He replaced Dr. Katherine Iscoe, who stepped down from the CEO role to focus on MyFiziq's health and wellness business. Vlado brings more than 30 years of experience of deal origination and conducting business negotiations with potential clients, a skill set important for the company for taking its technology to the market. Since the beginning of his career (in 2001), he has held various advisory and business development roles across multiple organisations and has gained significant experience in delivering results, driving change and assessing partners' requirements for enhancing a company's value. He has successfully incubated ~10 start-ups and assisted businesses/capital market companies in adding value to their businesses. Apart from serving as the CEO of MyFiziq, he is associated with other companies, including Activistic and VB Advisory. He also serves as the Group CEO of Body Composition Technologies, a Singapore-based joint venture of MyFiziq. These combined skills were demonstrated recently when Mr Bosanac secured a \$6m investment into MyFiziq at a 110% premium to the market trading price of MyFiziq at the time.

Dr. Katherine Iscoe, Co-Founder and Director of Health and Wellness, has been associated with MyFiziq since its inception. She served as the company's CEO till 16 October 2016; however, post Vlado's appointment, she shifted her focus towards the commercialisation of Dr. Katherine – an Australian body-confidence expert consultancy – that is also part of MyFiziq. Besides this, she holds the position of Director at The School of Body Confidence and Katherine



The company's leadership team has strong background knowledge of the technology and business

Iscoe Consulting. Moreover, she recently completed her post-graduate certificate in counselling. She has a Doctorate in Exercise Physiology and Biotechnology, and a master's degree in Exercise Physiology and Health Sciences. Her extensive experience in the health & wellness domain makes her a key executive for the company. Dr Iscoe completed her PHD in type 1 diabetes and has played an integral role in the development of the BCT diabetes tool and data requirements.

David Tabb, COO, has been associated with MyFiziq since December 2015. He was appointed to assist the company in commercials and collaborate on discussions related to the MyFiziq app. David holds significant experience in project management and business development across various industries, including medical technology, mining contracting and aviation ground handling. Additionally, he possesses 15 years of experience in IT operations, training, quality and risk management, which makes him an extremely important team member who can drive operational efficiency at MyFiziq.

Amar El-Sallam, Chief Scientist, has >22 years of experience in signal and image processing, computer vision, machine-learning and biometrics. Amar has published >60 conference and journal papers, of which ~35 papers are related to MyFiziq. He is an expert coder and computer programmer with wide experience in electronics, telecommunication, signal and image processing, wave propagation and computer vision.

Terence Stupple, CTO, has been associated with MyFiziq since 2016. He is an expert in digital solutions and served Chevron – a large US-based energy company – for 3.5 years and the Government Department of Mines and Petroleum, Western Australia, for 9.5 years.

The company has a stable board, comprising the following:

Peter Wall, Non-executive Chairman, holds >19 years' experience in capital markets, corporate and strategic advice, securities law, and commercial and contract law. In addition to MyFiziq, he is associated with multiple companies such as Sharequity, MMJ Phytotech and Minbos Resources where serves as a Non-executive Director.

Mike Melby, Non-executive Director, is a fitness industry executive, currently serving as the Managing Partner of FITLAB, a US-based VC firm. Previously, he served as the VP of New Evolution Ventures, one of the leading global fitness investors/operators, and Head of Business Development and International for UFC Gym. He founded two tech start-ups – PayDivvy and TapIt – which were acquired by Higher One (a US-based financial services provider) and Phunware (a US-based software developer), respectively.

Nick Prosser, Non-executive Director, has over 15 years of experience in the Information and Communications (ICT) industry. He served as the Director for many private companies, providing compliance and training solutions to the financial industry. He is also the founder of Canberra Data Centres, which was acquired by Infratil and Commonwealth Superannuation Corporation for US\$1.16bn in 2016.

Kevin Hart, Company Secretary, is a chartered accountant and has >30 years of experience in accounting/management and administration of public-listed entities in the mining and exploration industry.



Appendix I – Glossary

Anthropometrical measurements – Systematic measurements of size, shape and composition of the human body.

Artificial intelligence – An area of computer science that emphasises on the creation of intelligent machines that work and react like humans.

Avatar – An accurate representation of a user in the form of a 3D model.

Biometrics – It is the measurement and statistical analysis of individual's physical and behavioural characteristics.

Body fat percentage – A percentage of the total mass of fat out of the total body mass.

Body mass index (BMI) – A measure of body fat on the basis of height and weight.

Computer vision – A science that allows automatic extraction, analysis and understanding of useful information from a single source of image.

Dual-energy X-ray absorptiometry (DXA) – A process that uses a small dose of ionising radiation for producing inside body pictures in order to measure bone loss.

Enterprise-level cloud infrastructure – A computing environment for businesses to enhance their performance, reduce cost and improve security of the information being processed.

Image capture process – A protocol based on which body images are collected using a mobile app and then processed to generate insights into body measurements, including dimensions, shape or fat.

In-app image inspection – A functionality that provides users with specific and instantaneous feedback about their image, rather than having to wait for the server to process their image request and identify the mistake.

In-device processing – A type of image processing that takes place in the device or app itself. The processing uses in-device embedded machine learning models to create non-personally identifiable segmented images for cloud processing.

Machine-learning model – Provides an ability to systems or apps to automatically learn and improve from the experience without being explicitly programmed to perform certain operations.

Mathematical algorithms – A description of set of steps that can be used to solve a mathematical computation.

Mobile health (mhealth) – A term commonly used to highlight the use of mobile communication devices such as wearable devices and mobile phones for health services, and information and data collection.

Multitenancy – An architecture in which a single instance of a software app serves multiple customers.

Predictive model – A process that uses data mining and probability approaches to predict outcomes.

Prototype app – The preliminary version of an app being used to develop other versions of the app.

Silhouettes – An image of an animal, object or person, which is represented as a solid shape of a single colour – preferably black – with edges matching the outline of the object.

Software development kit (SDK) – A set of software development tools used for developing certain apps. Hardware and software providers generally provide these tools.

Tenant – The customer that is being served by the single instance of a software app.

User-specific body contour – A functionality that allows individuals to create specific body contours and eliminate environmental effects such as background colour and saturation, thereby increasing the success rate of processing avatars.

Wearable devices – A type of electronic device that can be worn on body as an accessory, embedded in clothing or implanted in the user's body to send or receive data via the Internet.

White-label app – A mobile app that is generated from an original app model. The app displays buyer's branding instead of its developer's.

Appendix II – Capital structure

Class	% of fully diluted		Note
Ordinary shares, ASX Code MYQ (million)	90.0	57.3%	Exercise price 28.1 cents, average expiry date 14-May-2021
Unlisted options (million)	10.4	6.6%	
Performance shares	30.0	19.1%	
Performance rights	19.0	12.1%	Expiring 2 October 2019
Est. shares from convertible notes	7.7	4.9%	\$2.3m in notes exercisable at the higher of 30 cents or a 30% discount to VWAP by 31 December 2019
Fully diluted shares	157.0		

Current market cap: A\$23.4 million (US\$16.2 million)

Current share price \$0.260

Twelve month range \$0.23 - \$0.61

Average turnover per day (last three months) 130,600



Appendix III – IP Position

MyFiziq's intellectual property derives from the following applications:

Imaging a Body, WO/2016/086266, priority date 5 December 2014, invented by Katherine Iscoe, Vlado Bosanac and Amar El-Sallam⁴⁷.

- This application pertains to a method of generating a person's personalised digital avatar by capturing his/her image in a desired pose, segmenting it to produce silhouettes and refining the silhouettes using machine-learning algorithms; the method allows easy and quick generation of an accurate 'personalised Avatar' – for tracking or assessing physical fitness – without using specialised equipment.

Appendix IV – Major Shareholders

There are two major shareholders in MyFiziq:

- Dr Katherine Iscoe, former CEO of MyFiziq⁴⁸ (20.5%)
- Nick Prosser, one of MyFiziq's directors (5.5%)

Appendix V – Companies to Watch

Company	Location	Code	Market cap (US\$m)	Web site
Staramba	Berlin, Germany	Xetra: 99SC	24.1	staramba.com
MySize	Airport City, Israel	TASE: MYSZ	21.8	mysizeid.com
Strength Master Fitness	Changhua, Taiwan	TWSE: 4151	14.2	product.strengthmaster.com
Evitrade Health Systems	Vancouver, BC	CNSX: EVA	9.0	auxellence.com
Concepta	Sharnbrook, UK	LSE: CPY	11.8	conceptapl.com
MyFiziq	Perth, Australia		16.2	myfiziq.com

Staramba. This 3D and virtual reality company has developed a 3D Instagram scan system that can be used for creation of 3D avatars, gaming, 3D printing and virtual reality applications. The company makes advanced body scanning systems associated with ~176 camera modules, smart lock protection, open software interface and full rendering process automation to provide the best scanning experience to users. Not mobile phone based

My Size. This Israel-based company has developed multiple apps based on its patented measurement technology and algorithms. MySizeID app – one of the apps developed by the company – captures user's measurements using smartphone sensors (without the camera). External sensors are required.

Strength Master Fitness. This fitness equipment company employs Fit Plus (Fit+) App or FitPlus (BLE) app to move all treadmill/bike console functions on a phone/tablet. It allows users to track their workout progress by generating

⁴⁷ This patent application has been granted in the US as Patent No. 9,949,697 in April 2018.

⁴⁸ Her company is through Mad Scientist Pty Ltd.

results at the end of each workout session. This application does not give the individuals dimensions.

EVITRADE Health Systems. This technology company has developed software – Electro-Physiologically Interactive Computing System (EPIC) Health Care Expert System – an autonomous biomedical care system used for supervised/unsupervised medical exam/consultation. Individuals who want to normalise their blood pressure, blood glucose, BMI and skin conditions use it. No able to be utilized within a mobile phone.

Concepta PLC. This UK-based women’s healthcare company has developed myLotus Fertility app – a free downloadable app that can be used for tracking fertile days through a smartphone. The app provides important information to doctors to improve the chances of conception in case of low or high base levels of luteinising hormone. It also allows users to identify their hormone profile.

Appendix VI – Risks for MyFiziq

Risks specific to MyFiziq. We see four major risks for MyFiziq as a company and as a listed stock:

Licensing risk. MyFiziq is focussed on taking its body-shape-tracking technology to different customer verticals through licensing and subscription. This entails the risk of its technology failing to gain much interest in this segment from potential partners.

Funding risk. More capital may be needed to grow the potential of the company's technology.

Collaboration risk. MyFiziq could fail to secure a partner for exploring its technology in different business segments.

Timing risk. There is a possibility that the commercialisation of an integrated technology-based partner product may take longer than expected.

Risks related to pre-revenue life sciences companies in general. The stocks of biotechnology and medical device companies without revenue streams from product sales or ongoing service revenue should always be regarded as speculative in character. As most biotechnology and medical device companies listed on the Australian Securities Exchange fit this description, the term 'speculative' can reasonably be applied to the entire sector. The fact that the intellectual property base of most biotechnology and medical devices lies in science not generally regarded as accessible to layman adds to the risk associated with the sector.

Caveat emptor. Investors are advised to be cognizant of the abovementioned specific and general risks before buying any the stock of any biotechnology and medical device company mentioned in this report, including MyFiziq.

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