30 March 2022

Keywords Studios PLC ("Keywords Studios", “Keywords”, the “Group”)

Full year results for the year to 31 December 2021

Strong growth supported by a buoyant video games industry

Keywords Studios, the international technical and creative services provider to the global video games industry, today announces its full year results for the year to 31 December 2021.

Financial Overview:

Results for the year to 31 December 2021	2021	2020	% change
Group revenue	**€512.2m**	**€373.5m**	**+37.1%**
Organic Revenue growth[1]	**+19.0%**	**+11.7%**	
Adjusted EBITDA[2]	**€110.1m**	**€74.2m**	**+48.4%**
Adjusted EBITDA margin	21.5%	19.9%	
EBITDA[2]	€85.7m	€66.8m	+28.3%
Adjusted profit before tax[3]	**€86.0m**	**€55.0m**	**+56.4%**
Adjusted profit before tax margin	16.8%	14.7%	
Profit before tax	€48.0m	€32.5m	+47.7%
Adjusted earnings per share[4]	**89.24c**	**60.93c**	**+46.5%**
Earnings per share	45.16c	30.32c	+48.9%
Total dividend per share	**2.15p**	**0.00p**	
Adjusted cash conversion rate[5]	**107.3%**	**97.2%**	
Net cash / (net debt)	**€105.6m**	**€102.9m**	

Highlights:

Strong revenue growth (+37.1% to €512.2m) supported by a buoyant video games industry

- Organic Revenue up 19.0% (H1 2021: 22.9%, FY 2020: 11.7%) with all service lines performing well against the comparative period, when a number were held back by COVID-19 related production delays and disruption
- Performance driven by high levels of demand, supported by a buoyant video games market refocused on new content creation and a continued trend towards external service provision

Continued profitability growth and strong cash generation provides a balance sheet able to support investment and shareholder returns

- Adjusted profit before tax up 56.4% to €86.0m, with margin up 2.1% pts to 16.8% (2020: 14.7%)
- Strong cash conversion with Adjusted Free Cash Flow[6] of €92.3m (2020: €53.4m) and an Adjusted Cash Conversion rate of 107.3% (2020: 97.2%)
- Net cash of €105.6m (2020: €102.9m), after €65.5m net cash spend on acquisitions in 2021, and a renewed €150m undrawn Revolving Credit Facility
- As part of our progressive dividend policy, the Board has recommended a final dividend of 1.45p per share, which will make the total dividend for 2021 of 2.15p per share (2020: nil)

Acquisition strategy delivering expanded geographical reach

- Completed six high quality acquisitions in Australia, UK, Romania, and the US in 2021, for a total maximum consideration of up to €126m:

    - Climax Studios, Heavy Iron Studios, Tantalus and Wicked Witch add substantial scale and capabilities to Game Development, while expanding our presence into Australia
    - AMC adds significant expertise to Art Creation and a new presence in Romania for the Group
    - Waste Creative brings player acquisition and community management expertise to Marketing
- Our near term strategy remains strengthening Game Development and Marketing Services and becoming the external provider of choice for our global client base, while selectively acquiring in other service lines
- Exited the year with Pro Forma Revenue[7] of €528.5m (2020: €409.2m)
- We continue to actively review a healthy pipeline and our strong financial resources enables Keywords to comfortably support further acquisition opportunities

Making good progress with our Responsible Business agenda

- 2021 MSCI ESG Ratings assessment improved to a rating of 'A', up from BBB previously
- Established a new partnership with Women in Games, a not-for-profit organisation that seeks a game industry, culture and community free from gender discrimination. Planning a number of initiatives to leverage our global platform and client relationships in 2022
- Developed our first Group Environmental policy covering our energy and recycling practices, which will further develop our Sustainable Studios programme
- Hardship fund available to help affected employees of the unfolding humanitarian crisis in Ukraine and Keywords Care CSR fund increased

CEO Update: Evolving our strategy

- After a rigorous selection process, Keywords appointed Bertrand Bodson as the Group's new CEO, with effect from 1 December 2021
- Together with 60 leaders from across every service line, five workstreams have been put in place to kick-start the process for taking Keywords to the next level in the following areas:
    - Developing strategic partnerships; harnessing technology; addressing adjacent markets; supporting our "One Keywords" culture; and attracting and nurturing talent
- A further update on these strategic workstreams will be provided at our Capital Markets Day in London on 8 June

Current trading and outlook

- Trading in the first quarter has started well with strong demand across all of our service lines
- Expect to continue to benefit from an underlying video games market that remains buoyant, with 2022 expected to be a particularly strong year for new game launches
- While we are not immune to the inflationary pressures and competition for talent, we continue to enhance our position as an attractive employer and to take account of our costs as we agree projects with our clients, who are well aware of the industry-wide talent challenge
- We are monitoring the situation in Russia, where our teams continue to work but entirely focused on critical work for non-Russian clients. In parallel, and in close partnership with our clients, we have been actively looking at relocating work to other locations across the Group, benefiting from our global footprint
- We are confident of delivering a performance for the full year towards the top end of current market expectations[8], notwithstanding the situation in Russia, given the strong underlying trading across the Group aided, in part, by favourable currency movements
- Well-funded to continue to invest in our platform and people and actively reviewing acquisitions that would add expertise, particularly in Game Development and Marketing, whilst retaining an interest in adjacent markets such as media and entertainment

Bertrand Bodson, Chief Executive Officer of Keywords Studios, commented:

"I am delighted to have joined Keywords at a time when the business is performing so well. The Group has delivered strong organic growth, driven by high levels of demand for our services, and further extended our capabilities, reach and scale through selective acquisitions.

"The underlying video games market remains buoyant, with 2022 expected to be a particularly strong year for new game launches, as developers and publishers look to capitalise on higher player numbers and create ever more sophisticated content to engage players in their games for longer.

"Trading in the first quarter has started well, and we continue to see strong demand across all of our service lines, underpinning our confidence in delivering a performance for the full year towards the top end of current market expectations[8]. We expect the Group's trading momentum to continue through 2022, with the increased flow of content to our later stage service lines seen in the second half of 2021 continuing into this year, alongside further strong demand for our earlier stage services such as Game Development, Art Creation and Marketing.

"We are confident Keywords remains well placed to continue its rapid growth and in its long-term success thanks to its strong position in a buoyant video games market, its increasingly sought after 10,000-people strong resource base, its robust business model with a diversified range of services that are well balanced across the video games development cycle, and the financial strength to invest in our platform and people to build further on the Group's successful organic and acquisitive growth track record."

A presentation of the full year results will be made to analysts at 9.30am this morning and the live webcast can be accessed via this link: https://webcasting.brrmedia.co.uk/broadcast/6227906361bd9a4d10286ff6. To register for dial in access, or for any enquiries, please contact MHP Communications on keywords@mhpc.com.

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About Keywords Studios (www.keywordsstudios.com)

Keywords Studios is an international technical services provider to the global video games industry. Established in 1998, and now with over 70 facilities in 23 countries strategically located in Asia, Australia, the Americas and Europe, it provides integrated art creation, marketing services, game development, testing, localization, audio and player support services across more than 50 languages and 16 games platforms to a blue-chip client base of over 950 clients across the globe.

Keywords Studios has a strong market position, providing services to 23 of the top 25 most prominent games companies. Across the games and entertainment industry, clients include Activision Blizzard, Bandai Namco, Bethesda, Electronic Arts, Epic Games, Konami, Microsoft, Netflix, Riot Games, Square Enix, Supercell, TakeTwo, Tencent and Ubisoft. Recent titles worked on include Anthem, Star Wars Jedi: Fallen Order, Valorant, League of Legends, Fortnite, Clash Royale and Doom Eternal. Keywords Studios is listed on AIM, the London Stock Exchange regulated market (KWS.L).

The Group reports a number of alternative performance measures (APMs) to present the financial performance of the business which are not GAAP measures as defined by International Financial Reporting Standards (IFRS). The

Directors believe these measures provide valuable additional information for the users of the financial information to understand the underlying trading performance of the business. In particular, adjusted profit measures are used to provide the users of the accounts a clear understanding of the underlying profitability of the business over time. For full definitions and explanations of these measures and a reconciliation to the most directly referenceable IFRS line item, please refer to the APMs section at end of the statement.

[1] *Organic Revenue at constant exchange rates is calculated by adjusting the prior year revenues, adding pre-acquisition revenues for the corresponding period of ownership, and applying the prior year foreign exchange rates to both years.*

[2] *EBITDA comprises Operating profit as reported in the Consolidated statement of comprehensive income, adjusted for amortisation and impairment of intangible assets, depreciation, and deducting bank charges. Adjusted EBITDA comprises EBITDA, adjusted for share option expense, costs of acquisition and integration and non-controlling interest. In order to present the measure consistently year-on-year, the impact of COVID-19 government subsidies claimed and investment income are also excluded.*

[3] *Adjusted profit before tax comprises Profit before taxation as reported in the Consolidated statement of comprehensive income, adjusted for share option expense, costs of acquisition and integration, amortisation and impairment of intangible assets, non-controlling interest, foreign exchange gains and losses, and unwinding of discounted liabilities. In order to present the measure consistently year-on-year, the impact of COVID-19 government subsidies claimed and investment income are also excluded.*

[4] *Adjusted earnings per share comprises the adjusted profit after tax divided by the non-diluted weighted average number of shares as reported. The adjusted profit after tax comprises the adjusted profit before tax, less the tax expense as reported in the Consolidated statement of comprehensive income, adjusted for the tax impact of the adjusting items in arriving at adjusted profit before tax.*

[5] *Adjusted cash conversion rate is the adjusted free cash flow as a percentage of the adjusted profit before tax.*

[6] *Adjusted free cash flow is a measure of cash flow adjusting for capital expenditure that is supporting growth in future periods (as measured by capital expenditure in excess of maintenance capital expenditure). In order to present the measure consistently year-on-year, the impact of COVID-19 government subsidies claimed is also excluded.*

[7] *Pro Forma Revenue is calculated by adding pre-acquisition revenues of current year acquisitions to the current year revenue numbers, to illustrate the size of the Group had the acquisitions been included for a full financial year.*

[8] *As at 28 March 2022, company compiled analysts' forecasts gave a consensus for FY 2022 of €597m of revenue (range: €587-610m) and €92m of adjusted profit before tax (range: €90-95m).*

Chairman's Statement 2021

This, my ninth Chairman's statement since Keywords' IPO in July 2013, looks back on another year of strong results and delivery on our strategy, and looks forward to one of re-energisation with new ambition.

The increase in revenues to €512.2m represented actual growth of 37.1% and Organic Revenue growth of 19.0%. Adjusted EBITDA grew 48.4% versus 2020, albeit assisted by a low level of costs as a result of COVID-19. While the final Adjusted PBT margin of 16.8% benefitted from these reduced costs, it nonetheless evidences our medium to long-term margin expectations of c.15% is very achievable.

The Group completed six high quality acquisitions in Australia, UK, Romania, and the US in 2021, extending its scale and capabilities to Game Development, Art Creation and Marketing, in line with our strategy to become the external provider of choice across all our service lines for our global client base and giving the Group Pro Forma Revenue[7] of €528.5m as it exited 2021 (2020: €409.2m).

In the context of the Group's ongoing strong financial performance we are recommending a final dividend of 1.45p, giving a total dividend of 2.15p for the full year (having suspended our dividend programme in 2020).

Following the early retirement for health reasons of Andrew Day, I would like to express the Board's gratitude to all of Keywords' Senior Management Team for ensuring that the Group continued to deliver exceptional results in 2021 and for enabling a smooth transition to the appointment of Bertrand Bodson as the Group's new CEO in December 2021. In Bertrand, the Group has a new CEO whose talents, expertise and leadership skills are uniquely tailored to take Keywords forward for the next phase of its remarkable journey. Indeed, it is testimony to the unparalleled positioning of Keywords in the video games world that we have been able to attract someone of Bertrand's calibre.

My fellow Non-Executive Directors also deserve my thanks for their support in directing the business during the transition to a new CEO, and ensuring we had an effective CEO recruitment process. In addition, we have recruited two new Non-Executive Directors in anticipation of the retirements of David Reeves (Senior Independent Director and Chair of the Remuneration Committee) at the next AGM and of Giorgio Guastalla, the Keywords founder, as announced recently. In Marion Sears, who is going to take over the role of Chairman of the Remuneration Committee, and Neil Thompson we have, I believe, found two exceptional Directors who will be well able to provide the necessary support to the Executives. When David Reeves stands down at the next AGM, Charlotta Ginman will be appointed as Senior Independent Director; she has served with distinction on the Keywords Board for four years and is Chair of the Audit Committee. On behalf of the Board, I would like to thank David for his considerable contributions to the Group and to Giorgio; without him and his wife Teresa there would not be a Keywords. Given the changes to the Board during the year, the Board has requested, and I have agreed, that I extend my chairmanship by a year beyond a nine-year term, with the view to retiring at the 2023 AGM.

In a year when we have seen the transition of CEOs, the Keywords staff of some 10,000 have also very much put their collective "shoulder to the wheel". My thanks go to each and every Keywordian who has supported the business in the last 12 months.

In October 2021, an Executive Summit took place which was designed to act as a celebration of the achievements of Keywords over the last few years and to re-calibrate the strategic direction of the business. We were fortunate that Bertrand was able to attend the Summit and have his first taste of the culture, talent and ambition within the Senior Management Team. A further strategy conference is planned in the near future to build on the actions from the Executive Summit and to act as a springboard for Bertrand's vision on how the business should evolve.

As the Group continues to grow, Bertrand and the executive team will be focussed on driving operational efficiency, making better use of technology in the way services are delivered, and establishing a more strategic relationship with the major publishers, our clients.

Having completed his first 100 days at the helm of Keywords, Bertrand has already earned the respect of staff and customers alike. He is incredibly excited and enthused by the prospects for, and opportunities available to, the business and I share that enthusiasm. These opportunities are not limited to the video games industry, where Keywords now has a pivotal role in the way services are delivered, but also in adjacent markets where "gamification" know-how and expertise in effectively delivering content to multiple markets can have a real influence. Indeed, I believe that Keywords has really only just started its remarkable story and will continue to go from strength to strength as it builds on its strong platform to grow organically and by acquisition.

Since the year end Sonia Sedler, our COO, has left the business and her role on the Board for personal reasons. Having joined the business as COO during the COVID-19 pandemic, Sonia became joint interim CEO with Jon Hauck at short notice when Andrew Day retired early. We are grateful for her contribution and she leaves with our best wishes for the future.

Summary

We have a strong and energized leadership team in place and are well positioned to continue to execute on our clear opportunities in the buoyant video games market, as we capitalize on the Group's unique full service platform, powered by our incredibly talented team of Keywordians. Our strong balance sheet will enable us to continue to execute on a healthy pipeline of acquisition opportunities, complementing our ongoing organic growth.

Ross Graham

Chairman

CEO Review

I am delighted to have joined Keywords at a time when the business is performing so well. The Group has delivered strong organic growth, driven by high levels of demand for our services, and further extended our capabilities, reach and scale through selective acquisitions.

While it is early days for me as a Keywordian, I have spent a great deal of my time meeting people across the business, visiting studios around the world and speaking to our clients and it has made a few things abundantly clear.

First, Keywords is full of incredibly talented, experienced and entrepreneurial leaders who have a serious passion for video games and a clear desire to take the business forward.

Second, the Group is in an enviable market leading position, in a high growth industry that continues to move towards external service provision and for which access to talent is becoming ever more critical. Keywords is proud to count almost all the leading publishers and developers as its clients and proud also that these longstanding clients put their trust in Keywords to get their ever-advancing content to market and to meet and exceed the exacting standards of video gamers today.

Third, while Keywords already has scale with over 10,000 talented people across the business there are clear opportunities to capitalise on the Group's unique full service platform to continue to drive significant and sustainable growth.

I'll come on to set out some initial thoughts on ways in which we can continue to deliver an ever-more compelling proposition globally for our partners in the buoyant video games market, and adjacent content industries, and to invest in the platform and our people to build further on the Group's successful organic and acquisitive growth track record.

We are very mindful of the tragic events in Ukraine, which we are deeply saddened by and our thoughts are with all those affected. While we have no operations in Ukraine, our US Game Development business, Sperasoft, continues to operate from Russia but entirely focused on critical work for non-Russian clients. In parallel, and in close partnership with our clients, we have been actively looking at relocating work to other locations across the Group, benefiting from our global footprint (including in Poland, across Europe, and the KWS network more broadly). We are monitoring the situation very closely, and I will come on to provide more detail on our support for both our people and others that have been affected in the region. Our colleagues across the region are all valued members of Keywords and our priority is to do all that we can to support our people, and freelancers, wherever they are located, while contributing to wider humanitarian efforts in the region.

The Group has started 2022 well, with strong demand across all of our service lines. We are very confident in the Group's opportunity for growth as we continue to capitalise on our clients' focus on selecting the right external services provider, increased expenditure on content creation in a growing video games market, and our ability to increase our market share both through organic growth and the execution of our acquisition strategy.

Excellent growth supported by a buoyant video games market

Keywords delivered a strong performance in FY2021, with revenues up by 37.1% to €512.2m. Organic Revenue for the Group, which excludes the impact of acquisitions and currency movements, grew by 19.0% in 2021 (FY 2020: 11.7%), with all service lines performing well against the comparative period. This strong performance reflects the high levels of demand for all service lines, driven by the buoyant video games market, the industry's focus on new content creation, the continued trend in the industry towards external service provision supported by a softer comparative in the first half of 2020 when the Group experienced disruption to our services at the earlier stages of the COVID-19 pandemic. The Group's strong organic growth was complemented by contributions from the six acquisitions we completed through the year.

While all of our service lines experienced growth, our Marketing and Game Development service lines delivered exceptional growth, of 151.1% and 73.6% respectively, reflecting strong organic performances (33.7% and 16.0% respectively) complemented by contributions from acquisitions. These service lines have been a particular focus of our acquisition strategy in recent years and, as they have a significant role at the earlier stages of a video game's development cycle, have benefitted through the year from the industry returning to focus on creating new content to keep its expanding player base engaged in exciting new games. The performance by each service line is set out in more detail later in this review.

The Group's Adjusted PBT increased by 56.4% to €86.0m, representing a 2.1% pts improvement in margin to 16.8%. This reflected operational leverage and continued good cost control, and the benefit of reduced costs due to COVID-19, primarily relating to remote working and reduced property, travel and business development costs, which we expect to return with the anticipated easing of restrictions in 2022, alongside further investment in our platform and people.

Our robust business model has ensured this profit performance translated into strong cash generation, with €92.3m of Adjusted Free Cash Flow (FY 2020: €53.4m) representing a 107.3% Adjusted Cash Conversion rate in the period (FY 2020: 97.2%). This demonstrates the strong cash-generating characteristics of the business and provides the Group with further resources to continue to invest in the business and fund our acquisition strategy.

We are exceptionally proud of the efforts of our talented Keywordians who have worked tirelessly throughout this period to support our clients while continuing to deliver the excellent quality of service for which we are known.

Delivering on our strategy

The continued buoyant demand for video games, our clients' renewed focus on content creation and the impetus for external service provision have only accentuated the opportunities afforded by our strategy.

In a fragmented market characterised by predominantly local, single-service providers, Keywords continues to build its market-leading services platform and cement its position as the partner of choice for games publishers and developers when looking for global reach and deep expertise in video games. This, together with the scale to deliver the quality, flexibility and security of service required to meet high levels of demand for ever more sophisticated and immersive content, differentiates Keywords from its competitors. We continue to leverage the unique breadth of our platform by bringing the right combination of capabilities to support customers' individual objectives, enabling us to cross-sell a broader range of our services.

The strength and breadth of our platform is enabling us to capitalise on increased demand for our services due to a number of key trends in our market:

- The industry's focus returning to content creation in 2021, having had to concentrate on the monetisation of existing content due to production constraints across the industry in the earlier stages of the pandemic

- The number of players and amount of game play having expanded during the pandemic

- The shift towards "Games as a service", which requires ongoing content expansion to continuously deepen the gaming experience and extend the lifespan of a game, creating higher levels of continuous activity

- The launch and subsequent maturing of the next generation games consoles, PlayStation 5 and Xbox Series X/S. While the launch of the new consoles has been held back by supply constraints, we are seeing a refresh of the entire console-based gaming sector after a seven-year run of the PS4 and Xbox One console generation, which we expect to result in an enlarged market for video games content over the coming years and an associated demand for new content creation

- Further development of new and existing video games streaming platforms increasing demand for both content generation and ongoing in game support

We continue to invest in the business, both organically and through targeted acquisitions to position the Group as an increasingly strategic partner to our clients and as the "go to" provider to the video games industry across our service lines and key geographies.

During the year, we have invested in new studios in Bangalore and Manila, as well as in two new studios in second-tier cities in China, and refurbished some of our sites while the studios have been quieter, to support our growth today and into the future. We have upgraded and expanded studios in a number of locations including Quebec, Austin, Los Angeles and Tokyo and brought together certain studios where consolidation into one, larger space made sense, in Los Angeles and Milan. We also agreed leases for new, expanded facilities in Katowice, Warsaw and Ottawa that will support expansion in the current financial year.

We are also delighted to have welcomed six new businesses to the Keywords family in 2021. Heavy Iron Studios, Tantalus, Climax Studios and Wicked Witch add substantial scale and capabilities to our Game Development service line as well as reach into, and access to talent in, the US West Coast and Australia. AMC adds significant expertise to Art Creation and a new presence in Romania for the Group, from which we can access a new talent pool and build out our other service lines. We have also continued to enhance our Marketing service line, which we split out as a standalone service line for the first time at the interim results in September, having completed the acquisition of Waste Creative, a London-based studio, at the end of the year. Waste Creative brings expertise in strategy and creative production services, including player community management, for mobile video game creators, which will help us meet the growing demand from our clients for games as a service marketing support with a focus on community growth and fan retention. We continue to actively review a healthy pipeline of further acquisition opportunities.

Evolving our strategy

One of the things that attracted me to Keywords was the Board's vision for the business; I share its plan to grow the platform on a global scale and I believe Keywords has huge potential in the video games industry, and that it can also operate just as effectively in many adjacent content sectors.

I am privileged to have joined a business that has such strong foundations in that it is already a proven market leader with unrivalled scale, reach and range of capabilities across its 74 studios in 23 countries. It also already supplies almost all of the major developers in a sector that has huge growth potential.

The quality of the platform that has been built, and its attractiveness to potential partners and acquisition targets, provides the Group with a clear opportunity to continue to grow its services and scale in a global market for which service provision remains highly fragmented.

I'm looking forward to leading the Group's ambitious team to deliver an ever more compelling proposition for the buoyant video games market, and beyond.

As part of my first 100 days programme in the business, I have been looking at how we build on the Group’s incredibly strong foundations to take it forward to new levels of scale and success.

Right at the start of this process, I brought 60 leaders from across the business together as part of my induction, to ensure we drive the evolution of the strategy together. Working closely with them, we have launched five workstreams across the business to kickstart the process for taking Keywords to the next level, as follows:

1. **Strategic partnerships**: As we enter 2022, Keywords has over 900 clients and 23 of the top 25 publishers are our customers. Moving forward, we will look to build on these relationships so we can create and capture more value together. To do this, we will ascertain the areas in our service line offering that are currently missing so we can continue to build the platform of choice for our clients and learn how Keywords can be an increasingly attractive strategic partner which should in turn enable us to capture more value. Also, we are re-examining our various “customer propositions” to ensure a proper correspondence between the services we can provide and the value customers should expect.

2. **Technology**: We will explore how to deploy the right tools and technology to enable our studios to continue to enhance their performance so that they can bring more value to our clients, while at the same time ensuring our internal operational structures can scale to support Keywords’ growth ambitions.

3. **Adjacent markets:** We continue to examine opportunities in adjacent sectors and our work in the broader media and entertainment sector with Netflix and others has increased accordingly. We will continue to review opportunities that supplement our growth in video games to ensure we take advantage of the increasing convergence of content and leverage our mastery of this most interactive of all mediums, as gamification is increasingly seen as a route to delivering content in a more engaging way for a whole range of applications including education, retail and construction, and, of course, for the many potential applications in the metaverse.

4. **One Keywords**: Keywords has a unique and entrepreneurial culture and is full of highly talented, driven people across many different geographies. It remains vital that we retain this core of “One Keywords” that will help us to keep growing. So, we are looking at how we can preserve this entrepreneurial culture, while continuing to build an operational backbone that supports the growth of the business into the future thereby enabling us to take advantage of all the different skill sets across the business.

5. **Talent**: In 2021, we grew the number of people in this business to over 10,000 at the end of the year, which makes it clear that this business is able to attract talented people. Our employee net promoter score (eNPS) increased to 42 last year (from 22 in 2020), demonstrating high levels of engagement and satisfaction. Despite this, there has never been demand like there is today for talent in this industry. As such, we are looking at how we can continue to be an attractive destination for talent, what we can do to enhance career journeys at Keywords and how we can elevate the right people across our service lines to help propel us forward.

We will provide a further update on our progress with these five strategic work streams, as well as some of the outcomes, at our Capital Markets Day in London this Summer.

Evolving our ways of working

Our remote working capabilities remain highly effective, enabling us to support customers for as long as remote working is needed, and where returning to studios is not feasible. As restrictions lift around our geographies and, having consulted those who really matter– our Keywordians – we are now adopting a hybrid model of offering vibrant, engaging and safe studio space, while also enabling our people to work securely and constructively from home.

There remains a clear role for physical studios for the Group, particularly to support a strong, collaborative culture and enhance the exchange of creative ideas, for training, and in our Testing and Audio service lines, where certain clients continue, for reasons of security, to prefer a studio-based service. We have, therefore, continued to invest in new studios and to refurbish some of our sites while the studios have been quieter, to ensure our studios remain attractive places for our people to come together.

Responsible Business

We remain committed to conducting our business responsibly and operating to the highest levels of honesty, integrity and ethical conduct.

Having set out in 2020 our five priority areas of People (including DE&I), Customer Centricity & Innovation, Communities and the Planet, underlined by Corporate Governance and Business Ethics, we have continued to make progress with these in 2021.

We have received a rating of 'A' (on a scale of AAA-CCC) in our 2021 MSCI ESG Ratings assessment, which has improved from BBB previously. This rating, which analyses our resilience to long-term, industry material environmental, social and governance risks, was pleasing but clearly shows there is more we can do if we are to become a leader within the industry.

Leading this work is our ESG Committee and we were pleased to announce in 2021 that in addition to Bertrand Bodson, both of our most recently appointed Non-Executive Directors, Marion Sears and Neil Thompson, have joined the Committee, bringing strong expertise and experience to this important area of focus for the Group.

The gender diversity of our business is a focus for the Board and we monitor appointments by gender. The diversity of our Board changed in 2022 due to changes to the Board's composition. Following the departure of Sonia Sedler, female directors now represent 25% of the Board but this percentage will rise to 29% when David Reeves retires at the forthcoming AGM and we will continue to consider diversity as part of our decision making in any future appointments.

We have also shown our commitment to improving diversity across the video games industry by entering into a partnership with Women in Games in 2021, which sees Keywords help power their 500 strong Ambassador programme across 52 countries, allowing us to be more active in addressing the underrepresentation of women in our industry. Women in Games is a not-for-profit organisation founded in 2009, with the mission to identify and effect the lasting change needed to bring about full gender equality, equity and parity of opportunity within the gaming sector and to encourage more women to consider games and eSports as a career.

With this partnership now established, we have a number of planned initiatives to leverage our global platform and client relationships in 2022 and beyond to enhance and accelerate the popular ambassador initiative, enabling it to scale through additional projects and research, events, exclusive materials and services for Women in Games ambassadors.

Following the quantification of our greenhouse gas emissions for the first time in 2020, in 2021 we have developed the Group's first Environmental Policy covering our energy and recycling practices. The policy will help further develop our Sustainable Studios programme and support our studios in their efforts to minimise energy usage and to reduce, recycle and reuse wherever possible.

As we look to achieve net zero, we recognise these initiatives for Sustainable Studios will take time. Therefore, we will initially offset our carbon impact with credits towards the Ntakata Mountains REDD+ project, which protects forests. The revenue earned from the sale of certified carbon credits is paid directly to forest communities in Tanzania, empowering them to manage their own development needs.

We continue to work hard to make Keywords a great place to work, with some of our initiatives recognised through accolades such as Manila having been certified by Great Place To Work® Philippines, Keywords being named among Ireland's 150 Best Employers for 2021 and a number of our UK studios winning UK GamesIndustry.biz Best Places To Work Awards during the year. Since the year end, we were delighted that Keywords Studios in Mexico has been awarded the Socially Responsible Company (SRC) badge.

We also launched various initiatives to help support colleagues, including through COVID-19 vaccine clinics which, for instance, have provided vaccines for colleagues and their families in India, support for colleagues impacted by the hurricane in New Orleans, including re-housing some of our colleagues, and through the hardship fund that we launched at the beginning of the pandemic to support colleagues experiencing financial hardship as a result of COVID-19.

Following recent events, supporting our people as the humanitarian crisis unfolds in Ukraine is our top priority. We have established an employee hardship fund to provide support to the small number of colleagues directly impacted by this crisis.

We are also doing all that we can to provide broader support to those affected by the tragic situation in Ukraine. We have boosted our corporate social responsibility (CSR) fund to €250k, which we will dedicate to humanitarian causes in support of Ukraine. We are also creating jobs for refugees as they move into neighbouring countries, and we are providing support at the Ukrainian border through the donations of essential items.

Further updates will be made on the progress we are making against our six priority areas at our Capital Markets Day later this year.

Service line review

All our service lines grew well during 2021, despite the ongoing impact of the pandemic and the operational challenges it continues to present. The following table provides a summary of our revenues by service line, with growth rates on a reported and Organic Revenue growth basis.

Revenue	% of 2021 Group revenue	2021 Revenue €m	2020 Revenue €m	Change from 2020 %	2021 Organic Revenue growth %	2021 Pro Forma Revenue €m	2021 Average number of operational staff by service line
Art Creation*	**9.6%**	49.3	38.9	**26.7%**	**24.4%**	**50.9**	1,309
Marketing*	**9.0%**	46.2	18.4	**151.1%**	**33.7%**	**52.4**	189
Game Development	**27.1%**	138.9	80.0	**73.6%**	**16.0%**	**147.4**	1,396

Audio	**12.0%**	61.3	47.2	**29.9%**	**27.4%**	**61.3**	245
Functional Testing	**18.1%**	92.7	78.5	**18.1%**	**17.2%**	**92.7**	2,996
Localization	**9.9%**	50.8	45.4	**11.9%**	**12.2%**	**50.8**	382
Localization Testing	**5.3%**	27.1	23.3	**16.3%**	**16.7%**	**27.1**	646
Player Support	**9.0%**	45.9	41.8	**9.8%**	**12.7%**	**45.9**	1,702
Total	**100.0%**	512.2	**373.5**	**37.1%**	**19.0%**	**528.5**	

*The prior year comparatives have been re-classified to separately report Marketing services, previously reported within the Art Creation service line.

Art Creation (9.6% of Group revenue for the year)

Our Art Creation service line creates graphical art assets for video games including concept art creation, 2D and 3D art asset production and animation.

FY 2021 performance

Art Creation performed well with revenues up by 26.7% to €49.3m (FY 2020: €38.9m). Organic Revenue, which excludes the impact of currency movements and acquisitions, grew by 24.4% for Art Creation, following a continuation of strong underlying client demand across all art studios.

This strong performance was driven by exceptional growth in India where the studios were able to effectively manage the increased demand by rapidly hiring new talent, something that is not as easily replicated in other markets. In other territories, our North American studios also benefitted from remote working and the ability to extend remote teams through freelancers and sister studios, which enabled studios to meet the increased demand in the market.

We have continued to expand this service line, with the addition of two new studios in second-tier cities in China and new studios in Bangalore and Manila, which provide us with additional access to talent to support the work for our clients.

In August, we added the Group's first presence in Romania through the acquisition of AMC. AMC is a long-established, high-quality specialist art studio servicing both US and European clients and we believe it will add significant expertise and experience to this service line, as well as access to an attractive market for talent in Romania.

The market opportunity and outlook

Art Creation operates in a large addressable market, which remains highly fragmented. Increasingly, clients seek partners who are able to deliver higher value solutions through more creative, technical, and managed services.

Our clients' needs also continue to evolve and we expect the demand for real-time 3D art to grow through the year ahead and beyond. While it is very early days we expect that the development of the metaverse will drive even more demand for digital and related content and we are committed to helping our clients navigate through this opportunity.

This year, we have already seen many more cross studio and cross-service line collaborations and we expect Art Creation to continue to deliver strong growth in 2022 with our global platform positioning Keywords in a strong position to scale up to meet continued buoyant client demand.

Marketing (9.0% of Group revenue for the year)

Following its recent growth and scale within the Group, Marketing was reported as a standalone service line for the first time at the interim results in September 2021, so this represents its maiden year as a separately reported service line.

Marketing services includes PR and full brand campaign strategies, game trailers and marketing art and materials, which we are building through acquisitions, and subsequent organic growth.

FY 2021 performance

FY 2021 was a transformational year for our Marketing service line. Revenues grew by 151.1% to €46.2m (FY 2020: €18.4m) in 2021 following a period of fantastic growth. On an organic basis, which excludes the impact of currency movements and acquisitions, revenues were up 33.7% during the year.

The service line performed exceptionally well despite the absence of in-person events and a more limited number of game launches due to delays. In 2021, Marketing also benefited from the successful integration of the acquisitions of Maverick Media and g-Net, now the two largest studios in the service line, and Indigo Pearl, which was completed in the second half of 2020.

During the year, we continued to add scale to our Marketing services line through the acquisition of Waste Creative, a digital creative marketing agency based in London. The studio expands our mobile marketing capabilities in player acquisition and retention, community management and rapid, high quality content creation.

The market opportunity and outlook

Having transformed the scale of our Marketing services business, it has already become the provider of choice for games publishers and developers looking for a partner with deep specialist expertise in the sector, a broad range of the services that will enable the success of their games, and the global reach to execute across different time zones and cultures.

In a highly fragmented industry, this scale and reach will provide real competitive advantage as we bring together more of our services to meet our client's objectives. As many of the marketing services help clients at the very early stages of game development, when concepts are being developed and positioned for greenlighting, our marketing colleagues also have the opportunity to offer and cross-sell other Keywords' services, as appropriate, at the outset for new titles.

An extensive range of marketing services are currently provided in this fragmented market both internally and externally from key art, trailer creation, advertising, PR, branding, campaign management, influencer marketing and social media management through to marketing analytics and community management. So, while 2021 represented a transformational year in building out our Marketing services platform, there is a substantial opportunity to build further, so we will continue to seek to grow the business through selective acquisitions in order to enable us to provide a full suite of services at scale and across different time zones.

We expect Marketing will continue to grow strongly in FY 2022, albeit with growth rates moderating from the exceptionally high levels of growth seen in 2021.

Game Development (27.1% of Group revenue for the year)

Our largest service line, Game Development, provides external development services to game developers and publishers including full game development, co-development, porting and general software engineering consultancy.

FY 2021 performance

Game Development increased revenues by 73.6% to €138.9m (FY 2020: €80.0m). This increase partly reflected contributions from acquisitions made in 2021, including Heavy Iron, Tantalus, and Climax, with Wicked Witch having been acquired at the very end of the year. Game Development remains our largest service line with 16 studios in nine countries and over 1,500 developers.

Organic Revenue (which excludes the impact of currency movements and acquisitions) grew by 16.0% driven by the renewed focus on content creation, meaning strong demand for our services around the world despite the curtailment of our usual tradeshow-centric, business development activities. With game lifecycles now extending through downloadable content and live- ops and the next generation of consoles now maturing following the late 2020 release, there is an ever-increasing variety of opportunities for our Game Development studios.

While our ability to meet demand is constrained by a challenging recruitment climate, we were able to continue to recruit skilled professionals who are attracted to the range of high profile, exciting projects we work on for our clients.

In FY 2021, we completed the acquisition of four high quality businesses to grow and diversify our Game Development offering further:

- Heavy Iron - based in Los Angeles, California, the industry veteran's team of 43 developers has provided full game development, co-development, live operations and porting services for the video games industry since 1999.

- Tantalus - a leading and prolific developer of high quality, multi-platform titles based in Melbourne, Australia which provides us with access to a new talent pool and offers an excellent entry point into the Australian market for further expansion in the Pacific region, both organically and through acquisitions.

- Climax - one of the longest established game development businesses in the UK, offering full game development, co-development, porting and technical consulting services to some of the world's largest games publishers through a team of 109 talented developers.

- Wicked Witch - our second acquisition in Melbourne, Australia, Wicked Witch is a 73-person video game development studio which has an established track record in video game and graphic application development on a range of platforms including PC, mobile, PlayStation, Xbox and Switch.

The market opportunity and outlook

Game Development is our largest addressable market. The market is growing strongly and, of all of the Group's service lines, this market has the lowest proportion of external service provision. There is a high level of demand for talented developers and our studios will remain focused on recruitment and retention throughout 2022.

We remain a highly attractive prospect for game developer talent, who recognise the opportunities that Keywords provides for a sustainable variety of exciting work, as well as good career advancement, including the option to work across our expanding international footprint, and to be part of a strong culture amongst like-minded, games-passionate colleagues. Given the strong demand for talent, we expect to see some wage inflation and we will continue to take account of our cost structure as we agree each project with our clients, who are only too aware of the talent challenge themselves.

Our US Game Development business, Sperasoft, is the only studio within Keywords to operate in Russia with locations in St Petersburg, Volgograd and Moscow. Revenues from these studios are entirely from non-Russian clients. We continue to monitor the situation closely and in close partnership with our clients, we have been actively looking at relocating work to other locations across the Group, benefiting from our global footprint (including in Poland, across Europe, and the KWS network more broadly).

Demand remains very strong and we entered 2022 with a higher than normal level of confirmed revenue, so we expect continued growth for Game Development during the year as we use our global platform to enable the business to service as much of that demand as possible.

As previously communicated, Game Development remains an area of particular focus in our M&A programme, where we continue to assess companies that provide access to strong pools of talent to help support the fast pace of organic growth.

Audio (12.0% of Group revenue for the year)

Our Audio service line provides multi language voice-over, original language voice recording, music, sound design, accessibility and related services to the video games and film and TV industries.

FY 2021 performance

Audio revenues rose by 29.9% in the period to €61.3m (FY 2020: €47.2m), with Organic Revenue, which excludes the impact of currency movements and acquisitions, increasing by 27.4% compared to FY 2020.

Despite the challenges presented by the global pandemic and the need for our studios to adapt to various lockdowns and changes in local health and safety guidelines, our Audio services business saw a strong performance in 2021. This performance was delivered across all the studios and the business was able to expand through the addition of new clients and the growth of all its core services (subtitling, accessibility, dubbing, voice over, audio post and music).

Our music management services, sound design and sound effects businesses have continued to grow, as did our work in subtitling and dubbing of film and TV content where we serve clients such as Netflix, as well as many of the other key streaming providers, which have invested heavily in their original content strategy which helped to drive higher demand for our services.

The market opportunity and outlook

Our Audio services business has started 2022 well, with high levels of demand for our studios continuing into the first quarter. Our ability to produce industry leading quality for our clients means Keywords remains the partner of choice for video games clients seeking partners who can support them on all of their audio needs. We expect the streaming platforms to continue to drive strong demand for our Audio services line too.

Beyond the near term, we expect our Audio business to continue to be in high demand and the market remains highly fragmented in terms of service provision, with clients and voice actors favouring professional, high quality sound studios for optimal voice recording. This represents an opportunity for us to grow our market share organically, as well as make select acquisitions over time, as we seek to expand into new geographies to meet the growing demand, as audio content increases for both console and mobile games.

Functional Testing (18.1% of Group revenue for the year)

Functional Testing is our second largest service line and provides quality assurance, including discovery and documentation of game defects and testing to verify the game's compliance with hardware manufacturers' and distribution platforms' specifications, as well as test automation tools and services, crowd-based and focus group testing solutions.

FY 2021 performance

Functional Testing revenues increased by 18.1% to €92.7m (FY 2020: €78.5m) and Organic Revenue, which excludes the impact of currency movements and acquisitions, increased by 17.2%. The growth was supported by a weaker comparative in H1 2020 which was particularly disrupted at the early stages of the COVID-19 pandemic. Demand for our Functional Testing services improved as we moved through the year, as this service line started to benefit more fully from content flowing to the later stage service lines in the second half of 2021, following the industry's return to focus on new content creation in the first half of 2021.

We have built out our Functional Testing operations over time, beyond Montreal, to include Tokyo, New Delhi, Singapore, Katowice, Saint Jerome (Canada), Mexico City and Seattle, giving us a well-diversified production base, with "follow the sun" time zones and some lower cost production sites.

Our strong relationships with clients and the optimisation of capacity across these studios enabled the Functional Testing business to meet growing demand and it was pleasing to see volumes in studios across Poland, India and Mexico double in 2021.

The market opportunity and outlook

As the newer generation of consoles mature, the industry's drive to create new content for this generation is expected to increase further, something that will continue to benefit our Functional Testing business which operates at the later stages of the game development cycle.

In 2022, we expect our global footprint with studios in the key locations for talent around the world will continue to appeal to our clients, as we are able to offer flexible solutions depending on our customer needs, timelines and budgets.

We remain a leading player in this large and growing area of the market that is seeing an accelerating trend towards external service provision. Our scale, flexibility, geographical spread and proven robustness, even in the most challenging of circumstances, positions us well as games companies continue to increase the proportion of functional testing that they work with external providers on.

We expect to deliver continued growth into 2022 as more content flows to our later stage service lines following the return to new content creation in 2021 and as we see more new content being launched during the year.

Localization (9.9% of Group revenue for the year)

Our Localization service line provides translation of in-game text, audio scripts, cultural and local adaptation, accreditation, packaging and marketing materials in over 50 languages. It includes our proprietary technologies for content management, machine translation, crowd sourcing and workflow management.

FY 2021 performance

Localization revenues were up 11.9% to €50.8m (FY 2020: €45.4m) and Organic Revenue, which excludes the impact of currency movements and acquisitions, was up by 12.2%. This reflected a higher level of demand for our Localization services as we moved through the year, as this service line started to benefit more fully from content flowing to the later stage service lines in the second half of 2021, following the industry's return to focus on new content creation in the first half of 2021.

In October, we announced that Romina Franceschina joined Keywords to lead our Localization service line, bringing more than 20 years' experience in the localization industry and in delivering operational excellence and innovation, across a number of industries.

In 2021, Localization launched KantanStream, a crowd-sourced machine translation management platform that combines artificial intelligence and our global community of professional translators to deliver the speed and flexibility of machine translation with the quality only native speakers can deliver.

Localization's strong relationships with clients and exceptional output saw it receive awards from Tencent and Yozoo for being the best audio services provider and the business also won the Best Localization and QA Provider at Star Awards 2021.

The market opportunity and outlook

The Localization market remains highly fragmented and characterized by most competitors being single language providers without the scale to deliver simultaneous multi-jurisdictional localization projects for our global video games customer base.

Our clients are increasingly looking to Keywords for a more streamlined and distributed production process so internal innovation to introduce workflow efficiencies and automation will be a key area of focus for Localization.

Clients are already adopting our game asset management system, XLoc, which in turn ensures we are ever more integrated into their workflows. Combining the market leading expertise we have built up in localization over the past 20 years, with proprietary software tools, like XLoc, and artificial intelligence (AI) and machine learning (ML) technology from Kantan, will enable us to effectively manage a greater volume of content for our clients, at a greater speed, and in more languages.

We expect to deliver continued growth into 2022 as more content flows to our later stage service lines following the return to new content creation in 2021, alongside the underlying momentum in a video games market that is producing an ever increasing level of content, that is localised to a greater degree, for communities of video game players that reside in every corner of the world.

Localization Testing (5.3% of Group revenue for the year)

Our Localization Testing service line identifies out of context translations, truncations, overlaps, spelling, grammar, age rating issues, geopolitical and cultural sensitivities, and console manufacturer compliance requirements in over 30 languages using native speakers.

FY 2021 performance

Localization Testing revenue increased by 16.3% to €27.1m (FY 2020: €23.3m). On an organic basis, which excludes the impact of currency movements, Localization Testing was 16.7% higher compared to FY 2020.

As in the case of Functional Testing, Localisation Testing started to benefit more fully from content flowing into our later stage services in H2 2021, following the industry's return to focusing on new content generation in H1 2021 after the disruption to game production cycles caused by the pandemic in 2020.

Localization Testing benefitted from improvements to its global resourcing market, an increasingly flexible team structure and a higher proportion of work being shared across multiple studios in different geographies, which aided capacity and enabled the service line to meet heightened demand in a timely, flexible manner.

The market opportunity and outlook

In this service line, we continue to develop our operations in Tokyo, Singapore, Katowice, Milan, Dublin, Montreal and Ottawa, which gives us the scale, breadth of languages, multi-location and time zone operations, and resourcing agility to enable it to offer a flexible, high quality and cost-effective service which is difficult for competitors to replicate.

With our offering well established as a leading global player, we expect the Localization Testing service line to benefit from the strong underlying market, a continued rise in external service provision, and an increased flow of content to our later stage services in 2022. We are already receiving ever larger opportunities from our clients who recognise Keywords as a global partner of choice.

Player Support (9.0% of Group revenue for the year)

Our Player Support service line provides multi-lingual, cost effective and flexible customer care services, including managing communities of gamers across all forms of social media, within the games themselves and on the official game forums, ensuring our customers have a safe player environment.

FY 2021 performance

Player Support increased revenue by 9.8% to €45.9m (FY 2020: €41.8m) and Organic Revenue, which is on a constant currency basis, by 12.7%.

Player Support brought on a significant number of new clients and continued to strengthen its services in areas such as social media, quality control and consulting. It has continued to grow revenues from its social media services in particular, which have a high level of synergy with the Group's Marketing Studios. For instance, our acquisition of Waste Creative in December 2021 provides particular opportunities for synergies with Player Support due to its focus on player community management and retention for mobile video game creators. Together, our services offer a compelling and highly differentiated proposition to our clients who are ever more focused on keeping gamers happy and engaged with their games.

Our remote working arrangements have continued to prove highly effective, enabling us to seamlessly support clients across the world without any disruption, and Player Support has above industry average levels of employee retention, with the strength of its culture also borne out in a strong employee net promoter score.

The market opportunity and outlook

Player Support growth is expected to continue in 2022, with the benefit of an expanded client base and more diverse services.

As gaming becomes ever more social, our capacity to moderate user generated content is becoming critical for our clients. In this context, social media is expected to continue its progression in 2022, while adding trust & safety services to our unique offer will address increasing demand from our clients.

Having launched consulting services in 2021, we plan to support more of our clients with this, to help them shape how customer support can be better integrated to their upcoming games and be supported by the most relevant tools available.

Keywords' deep games knowledge and focus, combined with its global footprint, means we remain the most appropriate cultural fit for our clients for these services.

Our capacity to recruit from more countries will improve our recruitment pipeline and enable us to help our clients scale in their desired languages, while our machine translation engine, Kantan, provides an effective and efficient tool to support people-driven services.

Outlook

Trading in the first quarter has started well, and we continue to see strong demand across all of our service lines. We expect the Group's trading momentum in the second half of 2021 to continue through 2022, with the increased flow of content to our later stage service lines alongside further strong demand for our earlier stage services such as Game Development, Art Creation and Marketing.
The underlying video games market remains buoyant, with 2022 expected to be a particularly strong year for new game launches, as developers and publishers look to capitalise on higher player numbers and create ever more sophisticated content to engage players in their games for longer.

While we are not immune to the inflationary pressures and competition for talent being seen in some of our earlier stage services lines, we are well positioned to continue to attract skilled professionals due to the unrivalled, sustained variety of exciting work we do for our clients and the opportunities for career advancement and working internationally we are able to offer, and we will continue to take account of our costs as we agree projects with our clients, who are well aware of the industry-wide talent challenge.

Our flexible hybrid working model is now well established across all of our service lines and 70+ locations, and with the lifting of restrictions around the world, we will see studios reopen and the previously experienced limitations in some service lines removed. We are encouraged by the number of Keywordians returning to studios around the world and look forward to seeing levels increase in the months to come.

Notwithstanding the situation in Russia, given the strong underlying trading across the Group aided, in part, by favourable currency movements, we are confident of delivering a performance for the full year towards the top end of current market expectations.

As we continue to build our platform, we are actively reviewing acquisitions that would add expertise, particularly in Game Development and Marketing, access to talent or technology, while retaining an interest in adjacent markets such as media and entertainment, which are increasingly converging with video game development technology and marketing strategies.

The Board is confident Keywords remains well placed to continue its rapid growth and in its long-term success thanks to its strong position in a buoyant video games market, its increasingly sought after 10,000-people strong resource base, its robust business model with a diversified range of services that are well balanced across the video games development cycle, and the financial strength to invest in our platform and people to build further on the Group's successful organic and acquisitive growth track record.

Bertrand Bodson
Chief Executive Officer

Financial and Operating Review

Resilient performance in a period of significant disruption

Revenue

Revenue for 2021 increased by 37.1% to €512.2m (2020: €373.5m). This growth was supplemented by the full year impact of acquisitions in 2020 and the acquisitions made in 2021, but offset by the impact of currency movements, particularly the weakening of the US dollar in the second half of the year.

Organic Revenue growth (which adjusts for the impact of currency movements and acquisitions) was up 19.0% (H1: 22.9%, H2: 15.5%, 2020: 11.7%). This was driven by a robust performance across all service lines, against a comparative period where, in H1 2020, certain service lines were more severely held back at the early stages of COVID-19, particularly in our Testing and Audio businesses. Further details of the trading performances of each of the service lines are provided in the CEO Review.

Gross margin

Gross margin in 2021 was €200.1m (2020: €141.8m) representing an increase of 41.1%. The gross margin improved by 1.1% pts to 39.1% (2020: 38.0%) driven by certain cost savings as a result of working from home measures and the revenue shortfalls in the early stages of the pandemic in the prior year, particularly in our Testing, Audio and Localization service lines that held back margins in 2020.

Operating costs

Adjusted operating costs increased by 33.1% to €90.0m (2020: €67.6m), reflecting a larger Group, but reduced to 17.6% of revenue versus 18.1% in 2020. This reduction was driven by continued good cost control, together with reductions in certain costs due to COVID-19, primarily resulting from remote working and lower travel, business development and marketing costs.

Adjusted EBITDA

Adjusted EBITDA increased 48.4% to €110.1m compared with €74.2m for 2020. The Adjusted EBITDA margin in 2021 reflects the improved revenue noted above and this, combined with the benefit of ongoing reduction in certain costs due to COVID-19, resulted in an improvement in Adjusted EBITDA margin of 1.6% pts to 21.5% (2020: 19.9%).

Net finance costs

Net finance costs reduced by €6.2m to €2.4m (2020: €8.6m), largely driven by a €8.1m swing in the net foreign exchange loss which is described in more detail below. Underlying interest costs on bank debt (excluding IFRS 16 interest, deferred consideration discount unwind, bank charges and foreign exchange) remained in line with the prior year at €1.0m (2020: €1.0m).

Alternative performance measures (APMs)

The Group reports a number of APMs to present the financial performance of the business which are not GAAP measures as defined by IFRS. The Directors believe these measures provide valuable additional information for the users of the financial information to understand the underlying trading performance of the business. In particular, adjusted profit measures are used to provide the users of the accounts a clear understanding of the underlying profitability of the business over time. A breakdown of the adjusting factors is provided in the table below:

	2021 €m	**2020 €m**
Share option expense	16.4	15.4
Acquisition and integration costs	8.0	2.6
Amortisation and impairment of intangible assets	13.7	8.8
COVID-19 government subsidies claimed	-	(9.2)
Foreign exchange and other items	-	4.9
	38.1	**22.5**

1.58m of options were granted under the Share Option Scheme and Long-Term Incentive Plan in 2021. This, together with grants from previous years, has resulted in a non-cash share option expense of €16.4m in 2021 (2020: €15.4m). The increase is largely due to an increase in the fair value charge for the more recent grants compared to previous years reflecting the increase in the share price.

One-off costs associated with the acquisition and integration of businesses amounted to €8.0m (2020: €2.6m). This includes a one-off charge for fair value movements in respect of deferred consideration of €5.6m that is required to be taken through the profit and loss account (and therefore the cash outlay is €2.4m). Amortisation and impairment of intangible assets charge increased by €4.9m to €13.7m (2020: €8.8m), reflecting the recent increased levels of acquisition activity.

Foreign exchange and other items amounted to a net charge of zero (2020: €4.9m). This includes €1.9m for the unwinding of discount liabilities on deferred consideration (2020: €0.1m) offset by a net foreign exchange gain of €2.0m (2020: €6.1m loss). Keywords does not hedge foreign currency exposures. The effect on the Group's results of movements in exchange rates and the foreign exchange gains and losses incurred during the year mainly relate to the effect of translating net current assets held in foreign currencies.

A more detailed explanation of the measures used together with a reconciliation to the corresponding GAAP measures is provided in the APMs section at the end of the statement.

Profit before taxation

Profit before tax increased by €15.5m (+47.7% year on year) to €48.0m (2020: €32.5m). Adjusted Profit Before Tax, which adjusts for the items described in the APMs section above increased by €31.0m (+56.4% year on year) to €86.0m compared with €55.0m in 2020. This represents an improvement in Adjusted profit before tax margin of 2.1% pts to 16.8% (2020: 14.7%). This is above the Group's historical margin delivery of between 14% and 15% and partly reflects the short-term benefit from certain costs savings as a result of COVID-19 noted earlier that are not expected to continue.

Taxation

The tax charge increased by €2.9m to €13.9m (2020: €11.0m), largely reflecting the increase in the profit before tax of the business. After adjusting for the items noted in the APMs section above and the tax impact arising on the bridging items, the Adjusted Effective Tax Rate for 2021 was 21.6% compared with the rate of 21.5% in 2020.

Earnings per share

Basic earnings per share increased by 48.9% to 45.16c (2020: 30.32c), reflecting the increase in the statutory profit after tax of 58.9%, partially offset by an 6.7% increase in the weighted average number of shares reflecting the full year impact of the 10.5% equity placing in May of 2020. Fully diluted earnings per share, reflecting the impact of unvested share options, increased by 49.7% to 42.98c (2020: 28.71c).

Adjusted earnings per share, which adjusts for the items noted in the APMs section and the tax impact arising on the bridging items above, was 89.24c, representing an increase of 46.5% (2020: 60.93c).

Cash flow and net debt

	2021	2020	Change
Cash flow statement	**€m**	**€m**	**€m**
Adjusted EBITDA	**110.1**	**74.2**	**35.9**
MMTC and VGTR	(4.5)	0.6	(5.1)
Working capital and other items	11.3	(2.2)	13.5
Capex - property, plant and equipment (PPE)	(19.4)	(13.9)	(5.5)
Capex - intangible assets	(0.3)	(0.3)	0.0
Payments of principal on lease liabilities	(10.0)	(8.2)	(1.8)
COVID-19 employment support subsidies	-	9.2	(9.2)
Operating cash flows	**87.2**	**59.4**	**27.8**
Net Interest paid	(2.7)	(1.6)	(1.1)
Free cash flow before tax	**84.5**	**57.8**	**26.7**
Tax	(23.9)	(4.5)	(19.4)
Free cash flow	**60.6**	**53.3**	**7.3**
M&A - acquisition spend	(63.1)	(39.9)	(23.2)
M&A - acquisition and integration costs	(2.4)	(2.3)	(0.1)
Investment income	-	1.4	(1.4)
Dividends paid	(0.6)	-	(0.6)
Shares issued for cash	5.3	111.7	(106.4)
Underlying increase / (decrease) in net cash / (debt)	**(0.2)**	**124.2**	**(124.4)**
FX and other items	2.9	(3.4)	6.3

Increase in net cash / (debt)	**2.7**	**120.8**	**(118.1)**
Opening net cash / (debt)	102.9	(17.9)	
Closing net cash / (debt)	**105.6**	**102.9**	

The Group generated Adjusted EBITDA of €110.1m in 2021, an increase of €35.9m from €74.2m in 2020. There was a €5.1m decrease in respect of the amounts due for Multi-Media Tax Credits (MMTC) that are earned in the year of production and are collected a year in arrears, and Video Games Tax Relief (VGTR). Working capital and other items resulted in an increase of €13.5m compared to 2020 with working capital increasing by €6.7m, mainly due to lower accrued income, while other items improved by €6.8m from phasing differences.

Investment in property, plant and equipment amounted to €19.4m (2020: €13.9m), reflecting a 39.60% increase and reflecting a return to more normal levels of spending following the COVID-19 disruption in the prior period that resulted in a reduction in both the level of equipment expenditure and expansionary capex. Property lease payments of principal of €10.0m were 22.0% higher than the prior period (2020: €8.2m), mainly related to acquisitions in the period.

The Group received no COVID-19 government employment retention subsidies in 2021, resulting in operating cash flows of €87.2m (2020: €59.4m), and an increase of €27.8m on 2020.

Net interest payments were €2.7m, an increase of €1.1m on 2020 as a result of the fees associated with the refinancing of the Revolving Credit Facility which is discussed further below. Tax payments amounted to €23.9m (2020: €4.5m) an increase of €19.4m on the same period when the Group benefitted from timing differences that resulted in fewer payments in the period in respect of the 2020 tax payable which were subsequently settled in 2021.

This resulted in Free Cash Flow of €60.6m (2020: €53.3m), an increase of €7.3m on the prior period. Adjusted Free Cash Flow before tax, which adjusts for capital expenditure that is supporting growth in future periods and the COVID-19 government employment retention subsidies in the prior year, was €92.3m in 2021, an increase of €38.9m (+72.8%) on the levels delivered in 2020. This resulted in an Adjusted Cash Conversion rate of 107.3% (2020: 97.2%). A reconciliation of Free Cash Flow to Adjusted Free Cash flow before tax is provided in the Alternative Performance Measures (APMs) note.

Cash spent on acquisitions totalled €65.5m of which €63.1m was in respect of the cash component of both current and prior year acquisitions and €2.4m was in relation to acquisition and integration costs.

These items, together with foreign exchange movements of €2.9m resulted in an increase of net cash of €2.7m in 2021 (2020: increase in net cash: €120.8m) and a closing net cash of €105.6m (2020: net cash €102.9m).

Balance sheet and liquidity

The Group funds itself primarily through cash generation and a Revolving Credit Facility (RCF). In December 2021, the Group entered into a new €150m unsecured multicurrency RCF with a syndicate of four lenders, which replaces the Company's previous €100 million secured RCF. The lender group is made up of Citi Commercial Bank, Fifth Third Bank, National Association, HSBC Continental Europe and ING Bank N.V., Dublin Branch. The new facility is for an initial three-year tenor to December 2024, with an option to extend the term by two further one-year periods at the Company's request, subject to lender consent. The new RCF has financial covenants that are consistent with the previous facility and has an accordion feature that allows it to be increased by a further €50 million again subject to lender consent. The RCF is subject to two financial covenants that are calculated in accordance with the facility agreement:

Leverage: Maximum Total Net Borrowings to Adjusted EBITDA ratio of 3 times; and
Interest cover: Minimum Adjusted Operating Profit to Net Finance Costs ratio of 4 times.

The Group entered the year with a strong balance sheet, with net cash (excluding IFRS 16 leases) of €102.9m as at 31 December 2020. Following €65.5m of cash deployed in the period to support the Group's value accretive M&A programme, at the end of 2021, the Group had net cash (excluding IFRS 16 leases) of €105.6m and undrawn committed facilities of €150m.

Dividend

The Board's progressive dividend policy seeks to reflect the Group's continued growth in earnings and strong cash generation, balanced with the need to retain the resources to fund growth opportunities, in line with our strategy.

Following the interim dividend payment of 0.70p per share in October 2021, the Board has recommended a final dividend of 1.45p per share, which will make the total dividend for the year ending 31 December 2021, 2.15p per share, an increase of 10% per annum over the 2018 full year dividend (2018: 1.61p per share). Subject to shareholder approval at the Annual General Meeting, the final dividend will be paid on 17 June 2022 to all shareholders on the register at 27 May 2022 and the shares will trade ex-dividend on 26 May 2022. The cash cost of the final proposed dividend will be an estimated €1.3m, subject to currency fluctuations.

Guidance for 2022

We have made a good start to the year with the Organic Revenue growth momentum in the second half of 2021 flowing into 2022, and total revenue benefitting from favourable currency movements compared to 2021.

2021 Adjusted profit before tax margins have benefitted from certain COVID-19 costs savings that are not sustainable and are hence expected to move back towards the 14–15% historical range during 2022 and the Adjusted Effective Tax rate is expected to be in line with the 2021 rate of ~21%.

We are anticipating capex in line with 2021 relative to revenue, reflecting continued expansionary capex and investment in equipment to support the new console cycle and an overall Adjusted Cash Conversion rate of ~80%, representing a reduction on 2021 as some of the phasing benefits in 2021 unwind.

Notwithstanding the situation in Russia, given the strong underlying trading across the Group aided, in part, by favourable currency movements, we are confident of delivering a performance for the full year towards the top end of current market expectations*.

Jon Hauck
Chief Financial Officer

* As at 28 March 2022, company compiled analysts' forecasts gave a consensus for FY 2022 of €597m of revenue (range: €587-610m) and €92m of adjusted profit before tax (range: €90-95m).

Consolidated statement of comprehensive income

		Years ended 31 December	
		2021	2020
	Note	**€'000**	€'000
Revenue from contracts with customers	4	**512,200**	373,538
Cost of sales	5	**(312,086)**	(231,766)
Gross profit		**200,114**	141,772
Investment income	5	**-**	1,437
Share-based payments expense	23	**(16,394)**	(15,350)

Costs of acquisition and integration	5	**(7,972)**	(2,650)
Amortisation and impairment of intangible assets	11	**(13,688)**	(8,808)
COVID-19 government subsidies claimed		**-**	9,231
Total of items excluded from adjusted profit measures		**(38,054)**	(17,577)
Other administration expenses		**(111,695)**	(84,513)
Administrative expenses		**(149,749)**	(102,090)
Operating profit		**50,365**	41,119
Financing income	6	**2,045**	76
Financing cost	6	**(4,427)**	(8,701)
Profit before taxation		**47,983**	32,494
Taxation	7	**(13,875)**	(11,027)
Profit after taxation		**34,108**	21,467
Other comprehensive income:			
Items that will not be reclassified subsequently to profit or loss			
Actuarial gain / (loss) on defined benefit plans	20	**27**	(421)
Items that may be reclassified subsequently to profit or loss			
Exchange gain / (loss) in net investment in foreign operations		**8,228**	(4,909)
Exchange gain / (loss) on translation of foreign operations		**14,581**	(10,843)
Total comprehensive income / (expense)		**56,944**	5,294
Profit / (loss) for the period attributable to:			
Owners of the parent		**34,175**	21,552
Non-controlling interest		**(67)**	(85)
		34,108	21,467
Total comprehensive income / (expense) attributable to:			
Owners of the parent		**57,011**	5,379
Non-controlling interest		**(67)**	(85)
		56,944	5,294
Earnings per share		**€ cent**	€ cent
Basic earnings per ordinary share	8	**45.16**	30.32
Diluted earnings per ordinary share	8	**42.98**	28.71

The notes form an integral part of these consolidated financial statements.

On behalf of the Board

Bertrand Bodson
Director
30 March 2022

Jon Hauck
Director

Consolidated statement of financial position

		At 31 December	
		2021	2020
	Note	**€'000**	€'000
Non-current assets			

Intangible assets	11	**353,943**	240,810
Right of use assets	12	**35,991**	27,807
Property, plant and equipment	13	**36,018**	26,419
Deferred tax assets	21	**21,468**	14,649
Investments	14	**175**	-
		447,595	309,685
Current assets			
Cash and cash equivalents		**105,710**	103,070
Trade receivables	15	**68,067**	47,832
Other receivables	16	**49,110**	38,665
Corporation tax recoverable		**6,764**	-
		229,651	189,567
Current liabilities			
Trade payables		**11,122**	8,170
Other payables	17	**108,423**	62,958
Loans and borrowings	18	**81**	73
Corporation tax liabilities		**12,635**	12,568
Lease liabilities	19	**11,217**	7,361
		143,478	91,130
Net current assets / (liabilities)		**86,173**	98,437
Non-current liabilities			
Other payables	17	**18,254**	1,994
Employee defined benefit plans	20	**3,088**	2,693
Loans and borrowings	18	**48**	122
Deferred tax liabilities	21	**13,840**	10,575
Lease liabilities	19	**26,418**	21,503
		61,648	36,887
Net assets		**472,120**	371,235
Equity			
Share capital	22	**904**	879
Share capital - to be issued	22	**2,185**	13,047
Share premium	22	**38,549**	22,951
Merger reserve	22	**273,677**	250,276
Foreign exchange reserve		**12,821**	(9,988)
Shares held in Employee Benefit Trust ("EBT")	22	**(1,997)**	(1,997)
Share-based payment reserve		**48,193**	31,799
Retained earnings		**97,905**	64,318
		472,237	371,285
Non-controlling interest		**(117)**	(50)
Total equity		**472,120**	371,235

The notes form an integral part of these consolidated financial statements. The financial statements were approved and authorised for issue by the Board on 30 March 2022.

On behalf of the Board

Bertrand Bodson
Director
30 March 2022

Jon Hauck
Director

Consolidated statement of changes in equity

	Share capital	Share capital - to be issued	Share premium	Merger reserve	Foreign exchange reserve	Shares held in EBT	Share-based payments reserve	Retained earnings	Total attributable to owners of parent	Non-controlling interest	Total equity
	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000	€'000
At 01 January 2020	780	5,310	20,718	132,712	5,764	(1,997)	16,449	43,187	222,923	35	222,958
Profit / (loss) for the period	-	-	-	-	-	-	-	21,552	21,552	(85)	21,467
Other comprehensive income	-	-	-	-	(15,752)	-	-	(421)	(16,173)	-	(16,173)
Total comprehensive income for the period	-	-	-	-	(15,752)	-	-	21,131	5,379	(85)	5,294
Contributions by and contributions to the owners:											
Shares issued for cash	77	-	-	109,372	-	-	-	-	109,449	-	109,449
Share-based payments expense	-	-	-	-	-	-	15,350	-	15,350	-	15,350
Share options exercised	16	-	2,233	-	-	-	-	-	2,249	-	2,249
Acquisition-related issuance of shares	6	7,737	-	8,192	-	-	-	-	15,935	-	15,935
Contributions by and contributions to the owners	99	7,737	2,233	117,564	-	-	15,350	-	142,983	-	142,983
At 31 December 2020	**879**	**13,047**	**22,951**	**250,276**	**(9,988)**	**(1,997)**	**31,799**	**64,318**	**371,285**	**(50)**	**371,235**
Profit / (loss) for the period	-	-	-	-	-	-	-	34,175	34,175	(67)	**34,108**
Other comprehensive income	-	-	-	-	22,809	-	-	27	22,836	-	**22,836**
Total comprehensive income for the period	-	-	-	-	22,809	-	-	34,202	57,011	(67)	**56,944**
Contributions by and contributions to the owners:											
Share-based payments expense	-	-	-	-	-	-	16,394	-	16,394	-	**16,394**
Share options exercised	11	-	4,929	-	-	-	-	-	4,940	-	**4,940**
Employee Share Purchase Plan	-	-	398	-	-	-	-	-	398	-	**398**
Dividends	-	-	-	-	-	-	-	(615)	(615)	-	**(615)**
Acquisition-related issuance of shares	14	(10,862)	10,271	23,401	-	-	-	-	22,824	-	**22,824**
Contributions by and contributions to the owners	25	(10,862)	15,598	23,401	-	-	16,394	(615)	43,941	-	**43,941**
At 31 December 2021	**904**	**2,185**	**38,549**	**273,677**	**12,821**	**(1,997)**	**48,193**	**97,905**	**472,237**	**(117)**	**472,120**

Consolidated statement of cash flows

		Years ended 31 December	
		2021	2020
	Note	**€'000**	€'000
Cash flows from operating activities			
Profit after taxation		**34,108**	21,467
Income and expenses not affecting operating cash flows			
Depreciation - property, plant and equipment	13	**11,661**	8,983
Depreciation - right of use assets	12	**10,473**	8,402
Amortisation and impairment of intangible assets	11	**13,688**	8,808
Taxation	7	**13,875**	11,027
Share-based payments expense	23	**16,394**	15,350
Fair value adjustments to contingent consideration	5	**5,567**	(66)
Fair value adjustments to right of use assets	12	**-**	434
Unwinding of discounted liabilities - deferred consideration	6	**1,882**	132
Unwinding of discounted liabilities - lease liabilities	6	**985**	843
Interest receivable	6	**(62)**	(76)
Fair value adjustments to employee defined benefit plans	20	**419**	354
Interest expense	6	**1,040**	1,071
Unrealised foreign exchange (gain) / loss		**583**	1,874
		76,505	57,136

Changes in operating assets and liabilities			
Decrease / (increase) in trade receivables		**(15,117)**	(4,255)
Decrease / (increase) in MMTC and VGTR receivable		**(4,502)**	555
Decrease / (increase) in other receivables		**3,341**	(3,902)
(Decrease) / increase in accruals, trade and other payables		**20,158**	9,878
		3,880	2,276
Taxation paid		**(23,948)**	(4,459)
Net cash generated by / (used in) operating activities		**90,545**	76,420
Cash flows from investing activities			
Current year acquisition of subsidiaries net of cash acquired	27	**(48,697)**	(37,447)
Settlement of deferred liabilities on acquisitions	17	**(14,393)**	(2,489)
Acquisition of property, plant and equipment	13	**(19,360)**	(13,908)
Investment in intangible assets	11	**(315)**	(259)
Other investment		**(175)**	-
Interest received		**62**	76
Net cash generated by / (used in) investing activities		**(82,878)**	(54,027)
Cash flows from financing activities			
Repayment of loans	18	**(80)**	(64,030)
Drawdown of loans	18	**-**	4,500
Payments of principal on lease liabilities		**(9,953)**	(8,170)
Interest paid on principal of lease liabilities	6	**(985)**	(843)
Dividends paid		**(615)**	-
Shares issued for cash	22	**5,338**	111,698
Interest paid		**(1,753)**	(879)
Net cash generated by / (used in) financing activities		**(8,048)**	42,276
Increase / (decrease) in cash and cash equivalents		**(381)**	64,669
Exchange gain / (loss) on cash and cash equivalents		**3,021**	(3,426)
Cash and cash equivalents at beginning of the period		**103,070**	41,827
Cash and cash equivalents at end of the period		**105,710**	103,070

Notes forming part of the consolidated financial statements

1 Basis of Preparation

Keywords Studios plc (the "Company") is a company incorporated in the United Kingdom. The consolidated financial statements include the financial statements of the Company and its subsidiaries (the "Group") made up to 31 December 2021.

The consolidated financial statements have been prepared in accordance with UK-adopted international accounting standards, and in conformity with the requirements of the Companies Act 2006.

Unless otherwise stated, the financial statements have been prepared in thousands ('000) and the financial statements are presented in euro (€) which is the functional currency of the Group.

Going Concern Basis of Accounting

After making enquiries, the Directors consider it appropriate to continue to adopt the going concern basis in preparing the Consolidated and Company financial statements. In doing so, the Directors have considered the uncertain nature of the Ukranian crisis and the COVID-19 pandemic, but have noted:

- The net cash position of the Group
- The strong cash flow performance of the Group through the year;
- The continued demand for the Group's services;

- The ability to operate most of its services in a work from home model and to move work to other locations where studios are temporarily closed;
- The historical resilience of the broader video games industry in times of economic downturn; and
- The ability of the Group to flex its cost base in response to a reduction in trading activity.

The Directors have also considered the Group's strong liquidity position with net cash of €105.6m as at 31 December 2021, and committed undrawn facilities of €150m under the Revolving Credit Facility ("RCF").

The Directors have applied downside sensitivities to the Group's cash flow projections to evaluate the Group's ability to withstand a further prolonged period of studio closures as a result of the COVID-19 pandemic, leading to a reduction in production capability and a worst case scenario where all Russian production capacity was excluded from the projections. Under this severe case, the Group would have sufficient liquidity and remain within its banking covenants. The Directors have a reasonable expectation that the Company and the Group have adequate resources to continue to operate and meet liabilities as they fall due for the foreseeable future, a period considered to be at least twelve months from the date of these financial statements and therefore the going concern basis of preparation continues to be appropriate.

New Standards, Interpretations and Amendments effective 01 January 2021

A number of new amendments and interpretations to accounting standards are effective from 01 January 2021, including:

- COVID-19-Related Rent Concessions - further amendment to IFRS 16;
- Interest Rate Benchmark Reform - further amendments to IFRS 9, IAS 39 and IFRS 7.

These amendments and interpretations have not resulted in any Group accounting policy changes, and have not had a material effect on the Group's financial statements.

New Standards, Interpretations and Amendments not yet effective

There are a number of standards, amendments to standards, and interpretations which have been issued by the IASB that are effective in future accounting periods that the Group has decided not to adopt early.

The following amendments are effective for the period beginning 01 January 2022:

- Onerous Contracts - Cost of Fulfilling a Contract - amendments to IAS 37;
- Property, Plant and Equipment: Proceeds before Intended Use - amendments to IAS 16;
- Annual Improvements to IFRS Standards 2018-2020 - amendments to IFRS 1, IFRS 9, IFRS 16 and IAS 41; and
- References to Conceptual Framework - amendments to IFRS 3.

The Group does not expect these amendments or any other standards issued by the IASB, but not yet effective, to have a material impact on the Group.

2 Significant Accounting Policies

Basis of Consolidation

Where the Company has control over an investee, it is classified as a subsidiary. The Company controls an investee if all three of the following elements are present: power over the investee, exposure to variable returns from the investee, and the ability of the investor to use its power to affect those variable returns. Control is reassessed whenever facts and circumstances indicate that there may be a change in any of these elements of control.

De-facto control exists in situations where the Company has the practical ability to direct the relevant activities of the investee without holding the majority of the voting rights. In determining whether de-facto control exists, the Company considers all relevant facts and circumstances, including:

- The size of the Company's voting rights relative to both the size and dispersion of other parties who hold voting rights;
- Substantive potential voting rights held by the Company and by other parties;
- Other contractual arrangements; and
- Historic patterns in voting attendance.

The consolidated financial statements present the results of the Company and its subsidiaries ("the Group") as if they formed a single entity. Intercompany transactions and balances between Group companies are eliminated in full.

Business Combinations
The consolidated financial statements incorporate the results of business combinations using the purchase method. The results of acquired operations are included in the consolidated financial statements from the date on which control is obtained. They are consolidated until the date on which control ceases. In the Consolidated statement of financial position, the acquired identifiable assets, liabilities and contingent liabilities are initially recognised at their fair values at the acquisition date. If the initial accounting for a business combination is incomplete by the end of the reporting period in which the combination occurs, the Group reports provisional amounts for the items for which the valuation of the fair value of assets and liabilities acquired is still in progress. Those provisional amounts are adjusted when additional information is obtained about facts and circumstances which would have affected the amounts recognised as of that date, and any adjustments to the provisional values allocated to the consideration, identifiable assets or liabilities (and contingent liabilities, if relevant) are made within the measurement period, a period of no more than one year from the acquisition date.

Any contingent consideration payable is recognised at fair value at the acquisition date and is split between current liabilities and long-term liabilities depending on when it is due. The fair value of contingent consideration at acquisition date is arrived at through discounting the expected payment (based on scenario modelling) to present value. In general, in order for contingent consideration to become payable, pre-defined profit and / or revenue targets must be exceeded. At each balance sheet date, the fair value of the contingent consideration is revalued, with the expected pay-out determined separately in respect of each individual acquisition and any change recognised in the statement of comprehensive income.

For deferred consideration which is to be provided for by the issue of a fixed number of shares at a future defined date, where there is no obligation on Keywords to offer a variable number of shares, the deferred consideration is classified as an equity arrangement and the value of the shares is fixed at the date of the acquisition. Deferred consideration may also be in the form of cash consideration payable at a future defined date. Such consideration is recognised at fair value at the acquisition date and is split between current liabilities and non-current liabilities depending on when it is due.

Intangible Assets
The Group's Intangible Assets comprise Goodwill, Customer Relationships and Other Intangible Assets.

Goodwill
Goodwill represents the excess of the cost of a business combination over the total acquisition date fair value of the identifiable assets, liabilities and contingent liabilities acquired. The cost comprises the fair value of assets given, liabilities assumed and equity instruments issued, plus the amount of any non-controlling interests in the acquiree plus, if the business combination is achieved in stages, the fair value of the existing equity interest in the acquiree. Contingent consideration is included at fair value on the acquisition date and, in the case of contingent consideration classified as a financial liability, re-measured subsequently through the profit and loss. Acquisition-related costs are recognised immediately as an expense in the periods in which the costs are incurred and the services are received. Goodwill is capitalised as an intangible asset with any impairment in carrying value being charged to the consolidated statement of comprehensive income.

Customer Relationships
Intangible assets, separately identified from goodwill acquired as part of a business combination (mainly Customer Relationships), are initially stated at fair value. The fair value attributed is determined by discounting the expected future cash flows generated from the net margin of the business from the main customers taken on at acquisition. The assets are amortised on a straight-line basis (to administration expenses) over their useful economic lives (typically five years is deemed appropriate, however, this is re-examined for each acquisition).

Other Intangible Assets
Other intangible assets include Intellectual Property and Music Licences, both acquired and internally developed. Other intangible assets are recognised as assets where it is probable that the use of the asset will generate future economic benefits and where the costs of the asset can be determined reliably. Other intangible assets that are acquired by the Group are stated at cost less accumulated amortization (see below) and impairment losses, if any. Subsequent expenditures on capitalised intangible assets are capitalised only when they increase the future economic benefits embodied in the specific assets to which they relate. All other expenditure is expensed as incurred. Other intangible assets with definite useful lives are amortised from the date they are available for use on a straight-line basis over their useful lives, being the estimated period over which the Group will use the assets. Residual amounts, useful lives and the amortization methods are reviewed at the end of every accounting period.

Development costs are capitalised as an intangible asset if all of the following criteria are met:

- The technical feasibility of completing the intangible asset so that it will be available for use or sale;
- The intention to complete the intangible asset and use or sell it;
- The ability to use or sell the intangible asset;
- The asset will generate probable future economic benefits and demonstrate the existence of a market or the usefulness of the intangible asset if it is to be used internally;
- The availability of adequate technical, financial and other resources to complete the development and to use or sell it; and
- The ability to measure reliably the expenditure attributable to the intangible asset during its development.

Following initial recognition of the development expenditure as an intangible asset, the cost model is applied requiring the intangible asset to be carried at cost, less any accumulated amortization and accumulated impairment losses. The intangible asset is amortised on a straight-line basis over the period of its expected benefit, starting from the date of full commercial use of the product. During the period of development, the asset is tested for impairment annually. If specific events indicate that impairment of an item of intangible asset may have taken place, the item's recoverability is assessed by comparing its carrying amount with its recoverable amount. The recoverable amount is the higher of the fair value net of disposal costs and the value in use.

Impairment

Impairment tests on goodwill and other intangible assets with indefinite useful economic lives are undertaken annually at the financial year end. Other non-financial assets are subject to impairment tests whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Where the carrying value of an asset exceeds its recoverable amount (i.e. the higher of value in use and fair value less costs to sell), the asset is written down accordingly.

Where it is not possible to estimate the recoverable amount of an individual asset, the impairment test is carried out on the smallest group of assets to which it belongs for which there are separately identifiable cash flows; its cash generating units ("CGUs"). Goodwill is allocated on initial recognition to each of the Group's CGUs that are expected to benefit from a business combination that gives rise to the goodwill.

The Group has one CGU. This CGU represents the lowest level at which goodwill is monitored by the Group and the lowest level at which management captures information for internal management reporting purposes about the benefits of the goodwill. Impairment charges are included in profit or loss, except to the extent they reverse gains previously recognised in other comprehensive income. An impairment loss recognised for goodwill is not reversed.

Investments

Investments are held at cost where the Group does not have control and is not able to exercise significant influence over the investee.

Cash and Cash Equivalents

For the purpose of presentation in the Statements of financial position and on the Statements of cash flows, cash and cash equivalents include cash on hand and on call deposits with financial institutions.

Foreign Currency

The consolidated financial statements are presented in euro, which is the presentation currency of the Group and the functional currency of the Parent Company.

Transactions entered into by Group entities in a currency other than the currency of the primary economic environment in which they operate (their "functional currency") are recorded at the rates ruling when the transactions occur. Foreign currency monetary assets and liabilities are translated at the rates ruling at the reporting date. Exchange differences arising on the retranslation of unsettled monetary assets and liabilities are recognised immediately in profit or loss.

On consolidation, the results of overseas operations are translated into euro at rates approximating when the transactions took place. All assets and liabilities of overseas operations, including goodwill arising on the acquisition of those operations, are translated at the rate ruling at the reporting date. Exchange differences arising on translating the opening net assets at opening rate and the results of overseas operations at actual rate are recognised in other comprehensive income and accumulated in the foreign exchange reserve.

Exchange differences recognised in profit or loss in Group entities' separate financial statements on the translation of long-term items forming part of the Group's net investment in the overseas operation concerned are classified to other comprehensive income and accumulated in the foreign exchange reserve on consolidation. On disposal of a foreign operation, the cumulative exchange differences recognised in the foreign exchange reserve relating to that operation up to the date of disposal are transferred to the consolidated statement of comprehensive income as part of the profit or loss on disposal.

Revenue from Contracts with Customers

Contracts are typically for services, performing agreed-upon tasks for a customer and can be time-and-materials or milestone based. Most contracts are short term in duration (generally less than one month); however, milestone based contracts can be longer term and extend to several months (or in some cases over a year). Where there are multiple performance obligations outlined in a contract, each performance obligation is separately assessed, the transaction price is allocated to each obligation, and related revenues are recognised as services or assets are transferred to the customer. Performance obligations are typically satisfied over time, as the majority of contracts meet the criteria outlined in IFRS 15 paragraph 35 (a) and (c).

Due to the nature of the services provided and the competitive nature of the market, contracts generally allocate specific transaction prices to separate performance obligations. Individual services or individual milestones generally involve extensive commercial negotiation to arrive at the specific agreed-upon tasks, and the related pricing outlined in the contract. Such negotiations extend further for milestone based contracts to also include the criteria involved in the periodic and regular process of milestone acceptance by the customer. Such criteria may involve qualitative, as well as quantitative measures and judgements.

In measuring progress towards complete satisfaction of performance obligations, the input method is considered to be the most appropriate method to depict the underlying nature of the contracts with customers, the interactive way the service is delivered and projects are managed with the customer. For time-and-materials contracts, other than tracking and valuing time expended, significant judgement is not normally involved. For milestone based contracts, progress is generally measured based on the proportion of contract costs incurred at the balance sheet date, (e.g. worked days) relative to the total estimated costs of the contract, involving estimates of the cost to completion etc. Added to this, significant judgement can be involved in measuring progress towards customer acceptance of the milestone. Significant judgement may also be involved where circumstances arise that may change the original estimates of revenues, costs or extent of progress towards complete satisfaction of the performance obligations. In such circumstances estimates are revised. These revisions may result in increases or decreases in revenue or costs and are reflected in income in the period in which the circumstances that give rise to the revision became known. When the outcome of a contract cannot be measured reliably, contract revenue is recognised only to the extent that milestones have been accepted by the customer. Contract costs are recognised as incurred. When it is probable that total contract costs will exceed total contract revenue, the expected loss is recognised immediately.

Revenue recognised represents the consideration received or receivable, net of sales taxes, rebates discounts and after eliminating intercompany sales. Revenue is recognised only where it is probable that consideration will be received. Where consideration is received and the related revenue has not been recognised, the consideration received is recognised as a contract liability (Deferred Revenue), until either revenue is recognised or the consideration is refunded.

Revenue is derived from eight main service groupings:

- Art Creation – Art Creation services relate to the production of graphical art assets for inclusion in the video game, including concept art creation along with 2D and 3D art asset production and animation. Contracts can be either time-and-materials based or milestone based, with performance obligations satisfied over time. Contracts are generally short term in duration; however, for longer contracts the input method is used to measure progress (e.g. worked days relative to the total expected inputs). Time-and-materials based contract revenue is recognised as the related services are rendered. For milestone based contracts where progress can be measured reliably towards complete satisfaction of the performance obligation, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, revenue is recognised on milestone acceptance.
- Marketing – Marketing services include game trailers, marketing art and materials, PR and full brand campaign strategies. Contracts can be either time-and-materials based or milestone based, with performance obligations satisfied over time. Contracts are generally short term in duration; however, for longer contracts the input method is used to measure progress. Time-and-materials based contract revenue is recognised as the related services are rendered. For milestone based contracts where progress can be measured reliably towards complete satisfaction of the performance obligation, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, revenue is recognised on milestone acceptance.
- Game Development – Game Development relates to software engineering services which are integrated with client processes to develop video games. Contracts can be either time-and-materials based or milestone based, with performance obligations satisfied over time. Contracts are generally longer term in duration. Time-and-materials based contract revenue is recognised as the related services are rendered. For milestone based contracts where progress can be measured reliably towards complete satisfaction of the performance obligation, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, revenue is recognised on milestone acceptance.
- Audio – Audio services relate to the audio production process for computer games and includes script translation, actor selection and talent management through pre-production, audio direction, recording, and post-production, including native language quality assurance of the recordings. Audio contracts may also involve music licensing or selling music soundtracks. Audio service contracts are typically milestone based, with performance obligations satisfied over time. Audio services contracts are generally short term in duration; however, for longer contracts where progress towards complete satisfaction of the performance obligation can be measured reliably, revenue is recognised using the input method to measure progress. Where progress cannot be measured reliably, audio services revenue is recognised on milestone acceptance. Music licensing and music soundtracks performance obligations are assessed separately, and related revenue is recognised on licence inception and on delivery of the soundtracks, respectively.

- Functional Testing – Functional Testing relates to quality assurance services provided to game producers to ensure games function as required. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally short term in duration. Revenue is recognised as the related services are rendered.
- Localization – Localization services relate to translation and cultural adaptation of in-game text and audio scripts across multiple game platforms and genres. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally short term in duration; however, for longer contracts the input method is used to measure progress. Localization contracts may also involve licensing translation software as a service. Such revenue is assessed separately. Revenue is recognised as the related services are rendered.
- Localization Testing – Localization Testing involves testing the linguistic correctness and cultural acceptability of computer games. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally short term in duration. Revenue is recognised as the related services are rendered.
- Player Support – Player Support relates to the live operations support services such as community management, player support and associated services provided to producers of games to ensure that consumers have a positive user experience. Contracts are typically time-and-materials based and performance obligations are satisfied over time. Contracts are generally long term in duration. Revenue is recognised as the related services are rendered.

Multimedia Tax Credits / Video Game Tax Relief

The multimedia tax credits ("MMTC") received in Canada and video games tax relief ("VGTR") in the UK are tax credits related to staff costs. Tax credits are recognised as income over the periods necessary to match the credit on a systematic basis with the costs that it is intended to compensate. Thus, credits are taken as a deduction against direct costs each period, but typically paid in the following financial year once the claims have been submitted and agreed. The nature of the grants is such that they are not dependent on taxable profits, and are recognised (under IAS 20), at their fair value when there is a reasonable assurance that the grant will be received and all attaching conditions have been complied with.

Share-based Payments

The Company issues equity-settled share-based payments to certain employees and Directors under a share options plan and a Long-Term Incentive Plan ("LTIP"). In 2022, a number of Executive Directors also received conditional awards under the rules of the LTIP Plan ("Salary Shares").

The fair value determined at the grant date is expensed on a straight-line basis over the vesting period. Other than continuous service, grants do not have non-market-based vesting conditions. At each reporting date the Company adjusts for unvested forfeitures and the impact is recognised in profit or loss, with a corresponding adjustment to equity reserves. The Company has no legal or constructive obligation to repurchase or settle the options in cash.

Additional employer costs, including social security taxes, in respect of options and awards are expensed over the vesting period with a corresponding liability recognised. The liability recognised depends on the number of options that are expected to be exercised, and the liability is adjusted by reference to the fair value of the options at the end of each reporting period.

Where share-based payments are issued to employees of subsidiary companies, the annual cost of the options are recharged to the subsidiary company through an inter-company recharge.

Employee Share Purchase Plan

In 2021, the Group introduced an Employee Share Purchase Plan ("ESPP"). The ESPP allows individual employees the possibility to save up to €500 monthly and acquire KWS shares discounted by 10% on the market price at the date of purchase. The plan has bi-annual purchase periods, with share-based benefits expensed within the period.

Share Option Plan

These are measured at fair value on the grant date using a Black-Scholes option pricing model which calculates the fair value of an option by using the vesting period, the expected volatility of the share price, the current share price, the exercise price and the risk-free interest rate. The fair value of the option is amortised over the vesting period, with one-third of the options vesting after two years, one-third after three years, and the balance vesting after four years. The only vesting condition is continuous service. There is no requirement to revalue the option at any subsequent date.

LTIP

The exercise of LTIP awards is subject to the Company's share price (stock symbol: KWS) performance versus the designated Share Index in terms of shareholder return over a three-year period. For the awards granted up to 2015, one-third of the share options vested if the Company exceeded the Total Shareholder Returns ("TSR") of the Numis Small Cap Index (excluding Investment Trusts) by 10%, two-thirds if the TSR exceeded the Index by 20% and full vesting if the TSR exceeded the Index by 30%. This was amended for the 2016 and 2017 awards to 100% vesting if the shareholder return exceeds the Index by 45%, and a pro-rated return between 10% if the TSR matches the Index, to 100% if the TSR exceeds the Index by 45%. The scheme was further amended in 2018 to 100% vesting if the TSR exceeds the Index by 20%, and a pro-rated return between 10% and 100% if the TSR exceeds the Index by between 0% and 20%. In 2019, the benchmark Index was amended for future grants to be the FTSE Small Cap Index, with the same performance conditions as 2018. In

2021, the benchmark Index was amended to be the FTSE250 Index (excluding investment trusts) and threshold vesting (25% of the award) will be earned for TSR in line with the Index and full vesting will be earned for exceeding the Index TSR by 20% over the performance period. A pro-rated return will be earned between 25% and 100% if the TSR exceeds the Index by between 0% and 20%.

These are measured at fair value, taking into account market vesting conditions but not non-market vesting conditions, at the date of grant, measured by using the Monte Carlo binomial model.

Salary Shares

Salary shares are measured at fair value on the grant date. As the only vesting condition is continuous service, the fair value of the shares is amortised over the vesting period.

Dividend Distribution

Final dividends are recorded in the Group's financial statements in the period in which they are approved by the Group's shareholders. Interim dividends are recognised when paid.

Income Taxes and Deferred Taxation

Provision for income taxes is calculated in accordance with the tax legislations and applicable tax rates in force at the reporting date in the countries in which the Group companies have been incorporated.

Deferred tax assets and liabilities are recognised where the carrying amount of an asset or liability in the consolidated statement of financial position differs from its tax base, except for differences arising on:

- The initial recognition of an asset or liability in a transaction which is not a business combination and at the time of the transaction affects neither accounting or taxable profit; and
- Investments in subsidiaries and jointly controlled entities where the Group is able to control the timing of the reversal of the difference and it is probable that the difference will not reverse in the foreseeable future.

The amount of the asset or liability is determined using tax rates that have been enacted or substantively enacted by the reporting date and are expected to apply when the deferred tax liabilities / (assets) are settled / (recovered).

Deferred tax assets and liabilities are offset when the Group has a legally enforceable right to offset current tax assets and liabilities and the deferred tax assets and liabilities relate to taxes levied by the same tax authority on either:

- The same taxable Group company; or
- Different Group entities which intend either to settle current tax assets and liabilities on a net basis, or to realise the assets and settle the liabilities simultaneously, in each future period in which significant amounts of deferred tax assets or liabilities are expected to be settled or recovered.

Government Subsidies

Government subsidies are recognised at their fair value when there is a reasonable assurance that the subsidy will be received and all attaching conditions have been complied with. Subsidies are recognised in the period the subsidy is designated to compensate.

Property, Plant and Equipment

Property, plant and equipment comprise computers, leasehold improvements, and office furniture and equipment, and are stated at cost less accumulated depreciation. Carrying amounts are reviewed for impairment whenever events or changes in circumstances indicate that their carrying amount may not be recoverable. Where the carrying amount of an asset is greater than its estimated recoverable amount, it is written down immediately to its recoverable amount.

Property, plant and equipment acquired through business combinations are valued at fair value on the date of acquisition.

Depreciation is calculated to write off the cost of fixed assets on a straight-line basis over the expected useful lives of the assets concerned. The principal annual rates used for this purpose are:

Computers and software	3 - 5 years
Office furniture and equipment	10 years
Leasehold improvements	over the length of the lease

Gains and losses on disposals are determined by comparing proceeds with carrying amount and are included in the Consolidated statement of comprehensive income.

Financial Assets

The Group's most significant financial assets comprise trade and other receivables and cash and cash equivalents in the Consolidated statement of financial position, whereas the Company's most significant financial assets comprise inter-group receivables.

Trade Receivables

Trade receivables, which principally represent amounts due from customers, are recognised at amortised cost as they meet the IFRS 9 classification test of being held to collect, and the cash flow characteristics represent solely payments of principal and interest. The Group's impairment methodology is in line with the requirements of IFRS 9. The simplified approach to providing for expected credit losses has been applied to trade receivables, which requires the use of a lifetime expected loss provision.

Cash and Cash Equivalents

Cash and cash equivalents comprise cash in hand, deposits held on call with banks and other short-term highly liquid investments. Where cash is on deposit with maturity dates greater than three months, it is disclosed as short-term investments.

Accrued Income from Contracts with Customers

Accrued income from contracts with customers, arising from Revenue from Contracts with Customers, is recognised in accordance with our Revenue Recognition policy, as discussed separately in this note. The Group applies the simplified approach to assessing expected credit losses in relation to such assets, as their maturities are less than twelve months. Based upon the recoverability of contract assets at year end, no significant expected credit loss provision has been applied.

Share Capital

Financial instruments issued by the Group are treated as equity only to the extent that they do not meet the definition of a financial liability. The Group's ordinary shares are classified as equity instruments.

Financial Liabilities

Contingent consideration is initially recognised at fair value and subsequently re-measured through the profit and loss. Trade payables, bank borrowings and other monetary liabilities are initially recognised at fair value and subsequently carried at amortised cost using the effective interest rate method.

Leased Assets

A lease is defined as 'a contract, or part of a contract, that conveys the right to use an asset (the underlying asset) for a period of time in exchange for consideration'.

At lease commencement date, the Group recognises a right of use asset and a lease liability on the balance sheet. The right of use asset is measured at cost, which is made up of the initial measurement of the lease liability, any initial direct costs incurred by the Group, an estimate of any costs to dismantle and remove the asset at the end of the lease, and any lease payments made in advance of the lease commencement date (net of any incentives received).

The Group depreciates the right of use assets on a straight-line basis from the lease commencement date to the earlier of the end of the useful life of the right of use asset or the end of the lease term. The Group also assesses the right of use asset for impairment when such indicators exist. At the commencement date, the Group measures the lease liability at the present value of the lease payments unpaid at that date, discounted using the interest rate implicit in the lease if that rate is readily available or at the Group's incremental borrowing rate.

Lease payments included in the measurement of the lease liability are made up of fixed payments (including in-substance fixed), variable payments based on an index or rate, amounts expected to be payable under a residual value guarantee, and payments arising from purchase and extension options reasonably certain to be exercised.

Subsequent to initial measurement, the liability will be reduced for payments made and increased for interest. It is remeasured to reflect any reassessment or modification, or if there are changes to in-substance fixed payments. When the lease liability is remeasured, the corresponding adjustment is reflected in the right of use asset, or profit and loss if the right of use asset is already reduced to zero.

The Group has elected to account for short-term leases and leases of low-value assets using the practical expedients. Instead of recognising a right of use asset and lease liability, the payments in relation to these are recognised as an expense in profit or loss on a straight-line basis over the lease term.

The Group has applied judgement to determine the lease term for contracts in which it is a lessee that include renewal options. The assessment of whether the Group is reasonably certain to exercise such options impacts the lease term, which significantly affects the lease liabilities and right of use assets recognised.

Employee Benefit Trust

Ordinary shares purchased by the Employee Benefit Trust on behalf of the parent company under the Terms of the Share Option Plan are deducted from equity on the face of the Consolidated statement of financial position. No gain or loss is recognised in relation to the purchase, sale, issue or cancellation of the parent company's ordinary shares.

3 Critical Accounting Estimates and Judgements

The Group makes certain estimates and assumptions regarding the future. Estimates and judgements are continually evaluated based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. In the future, actual experience may differ from these estimates and assumptions.

Judgements

The judgements, apart from those involving estimations, that management have made in the process of applying the Group's accounting policies and that have the most significant effect on the amounts recognised in the financial statements, are outlined below.

- **Group**
  - **Functional Currency**: The Directors have considered the requirements of IAS 21 in determining the currency that most faithfully represents the economic effects of the underlying transactions, events and conditions to determine the Group's functional currency. Detailed consideration has been given to both the Primary and Secondary Indicators in forming this conclusion. The Primary Indicators relate to revenues, regulation, competitive forces and costs, while the Secondary Indicators are primarily concerned with financing the business and the currency in which receipts from operating activities are usually retained. With a mix of currencies dominating the indicators, there is no clear single currency that influences the Group; however, the euro remains marginally the most dominant when all factors are considered. Therefore, the Directors consider the euro as the currency that most faithfully represents the economic effects of the underlying transactions, events and conditions.
  - **Business Combinations (Customer relationships)**: When acquiring a business, the Group is required to identify and recognise intangible assets, the determination of which requires a significant degree of judgement. Acquisitions may also result in intangible benefits being brought into the Group, some of which qualify for recognition as intangible assets while other such benefits do not meet the recognition requirements of IFRS and therefore form part of goodwill. Customer relationships are recognised as separate assets where revenues are recurring in nature and material revenues have been generated with the customer for a continuous period of three years. For the Game Development service line, the key asset acquired is typically "know-how", an asset that is not readily measurable and thus intrinsically linked to goodwill. Relationships are typically fixed term contract based rather than relationship based. Therefore, neither customer contracts nor customer relationships are typically recognised on the acquisition of a Game Development business.
  - **IFRS 16 Leases:** The Group has determined that the Group's incremental borrowing rate is the appropriate rate to use to discount lease liabilities. The Group has applied judgement to determine the lease term for contracts in which it is a lessee that include renewal options. The assessment of whether the Group is reasonably certain to exercise such options impacts the lease term, which significantly affects the lease liabilities and right of use assets recognised.
  - **Business Combinations (Put and call options over Non-controlling interest):** The Group acquired an 85% interest in Tantalus in March 2021, with the sellers retaining a minority shareholding. The shareholder agreement (signed with the purchase agreement) includes put and call options ("the Forward") that require the sellers to sell, or require the Group to buy, the remaining 15% shareholding in three years using a pre-determined valuation methodology linked to post-acquisition performance. IFRS 3 does not provide specific guidance on how such contracts should be accounted for in a business combination. The Board determined, taking into consideration all the contracts' terms and conditions, that the impact of the Forward put the Group in a similar position as if the Group had acquired a 100% interest in the subsidiary on the acquisition date, with deferred contingent consideration payable at a future date. In doing so, the Board considered whether the risks and rewards of ownership reside with the Non-controlling interest or had effectively transferred to the Group, and concluded that the Non-

controlling interest arising on the acquisition had been extinguished by a combination of the Forward and other conditions in the agreements. Therefore, the Group has accounted for the acquisition as if a 100% interest was acquired on acquisition, accounting for the initial investment and the Forward as a single linked transaction in which 100% control is gained, with the Forward recognised at fair value, as a financial liability within Deferred and contingent consideration (note 17), and no Non-controlling interest recognised on the acquisition. Any subsequent re-measurement required due to changes in the fair value of the liability will be recognised in the Consolidated statement of comprehensive income.

Estimates and Assumptions

The Group makes certain estimates and assumptions regarding the future. Estimates and judgements are continually evaluated based on historical experience and other factors, including expectations of future events that are believed to be reasonable under the circumstances. In the future, actual experience may differ from these estimates and assumptions.

A number of areas requiring the use of estimates and critical judgements impact the Group's earnings and financial position. These include revenue recognition, the computation of income taxes, the value of goodwill and intangible assets arising on acquisitions, the valuation of multimedia tax credits / video game tax relief, leasing and the valuation of defined retirement benefits. The Directors consider that no reasonably possible changes to any of the assumptions used in the estimates would in the view of the Directors give rise to significant risk of a material adjustment to the carrying value of the associated balances in the subsequent financial year.

4 Revenue from Contracts with Customers and Segmental Analysis

Revenue from Contracts with Customers

Revenue recognised in the reporting period arises from contracts with customers, and is predominantly recognised over time. There were no significant amounts of revenue recognised in the reporting period that were included in a contract liability balance at the beginning of the reporting period, or from performance obligations satisfied in the previous reporting period.

Revenue by line of business

	2021	2020
	€'000	€'000
Art Creation*	**49,326**	38,903
Marketing*	**46,183**	18,421
Game Development	**138,852**	80,017
Audio	**61,333**	47,232
Functional Testing	**92,686**	78,479
Localization	**50,791**	45,357
Localization Testing	**27,091**	23,323
Player Support	**45,938**	41,806
	512,200	373,538

*The prior year comparatives have been re-classified to separately report Marketing services, previously reported within the Art Creation service line.

For many contracts, operations are completed across multiple sites. Analysis of revenues by geographical regions is presented by producing location, which may not reflect the jurisdiction from which the final invoice to the client is raised, or the region of the Group's customers, whose locations are worldwide.

Geographical analysis of revenues, by producing location *

	2021	2020
	€'000	€'000
Canada	**97,748**	88,713
United States	**96,060**	50,504
United Kingdom	**94,426**	58,645

Italy	**32,448**	25,210
Russia	**29,424**	27,987
Japan	**21,898**	20,944
Poland	**21,397**	12,121
China	**20,350**	18,429
India	**18,640**	11,369
Ireland	**13,948**	12,291
Philippines	**13,461**	12,021
Spain	**10,331**	7,642
France	**8,436**	7,771
Singapore	**7,856**	6,798
Australia	**7,408**	-
Other	**18,369**	13,093
	512,200	373,538

*The prior year comparatives have been re-classified from billing entity location to producing entity location to align to the current year presentation, as the Directors consider this measure to be more meaningful.

No single customer accounted for more than 10% of the Group's revenue in either year presented.

Revenue Expected to be Recognised
For Game Development, games are developed to an agreed specification and time schedule, and often have delivery schedules and / or milestones that extend well into the future. The following are Game Development revenues expected to be recognised for contracts with a schedule of work that extends beyond one year, representing the aggregate amount of the transaction price allocated to the performance obligations that are unsatisfied (or partially unsatisfied) as at the end of the reporting period:

Revenue expected to be recognised	Total undelivered €'000	Scheduled completion within 1 year €'000	Scheduled completion 1-2 years €'000	Scheduled completion 2-5 years €'000
At 31 December 2021	**55,294**	**44,973**	**9,319**	**1,002**
At 31 December 2020	13,538	12,991	547	-

For all service lines excluding Game Development, contracts do not extend to more than one year, therefore information concerning unsatisfied performance obligations are not disclosed, as allowed under the practical expedient exemption under IFRS 15. This practical expedient is also availed of for Game Development contracts of less than one year in duration.

Segmental Analysis
Management considers that the Group's activity as a single source supplier of services to the gaming industry constitutes one operating and reporting segment, as defined under IFRS 8.

Management reviews the performance of the Group by reference to Group-wide profit measures and the revenues derived from seven main service groupings.

There is no allocation of operating expenses, profit measures, assets and liabilities to individual product groupings. Accordingly, the disclosures above are provided on a Group-wide basis.

Activities are reported in a manner consistent with the internal reporting provided to the chief operating decision-maker. The chief operating decision-maker has been identified as the executive management team made up of the Chief Executive Officer and the Chief Financial Officer.

Geographical analysis of non-current assets from continuing businesses *

	2021	2020
	€'000	€'000
United States	**171,126**	133,026
United Kingdom	**114,871**	58,414
Australia	**45,528**	-
Canada	**31,096**	27,882
Italy	**15,612**	13,928
Switzerland	**10,025**	10,117
France	**7,548**	7,302
China	**8,296**	7,492
Ireland	**8,422**	22,860
Germany	**5,336**	5,391
Spain	**4,988**	5,502
Japan	**6,955**	6,359
India	**4,001**	2,379
Romania	**2,763**	-
Poland	**3,275**	1,839
Mexico	**2,452**	1,958
Other	**5,301**	5,236
	447,595	309,685

*The prior year comparatives have been re-classified to align to the current year presentation, as the Directors consider this measure to be more meaningful.

5 Cost of Sales and Operating Profit

	2021	2020
Cost of sales	**€'000**	€'000
Operating expenses	**320,159**	238,664
Multimedia tax credits / video game tax relief	**(20,966)**	(15,593)
Other direct costs	**12,893**	8,695
	312,086	231,766

	2021	2020
Operating profit is stated after charging / (crediting):	**€'000**	€'000
Depreciation - property, plant and equipment	**11,661**	8,983
Depreciation - right of use assets	**10,473**	8,402
Amortisation of intangible assets	**13,688**	8,808
Costs of acquisition and integration	**7,972**	2,650
Auditor's remuneration	**605**	553
Short-term leases	**1,531**	1,747
Investment income	**-**	(1,437)

	2021	2020
Costs of acquisition and integration	**€'000**	€'000
Acquisition and integrations costs re: current year acquisitions (note 27)	**1,099**	307
Acquisition and integrations costs re: prior acquisitions	**191**	743
Fair value adjustments to contingent consideration (note 17)	**5,567**	(66)
Deferred consideration related to continuing employment	**454**	649
Acquisition team and related costs	**313**	247

Fair value adjustments to right of use assets (note 12)	**-**	434
Other re-organisation and restructuring costs	**348**	336
	7,972	2,650

Auditor's remuneration	2021 €'000	2020 €'000
Audit services:		
Parent company and Group audit	**314**	290
Subsidiary companies audit	**278**	250
Non-audit services:		
Audit-related assurance services	**13**	13
	605	553

Investment income	2021 €'000	2020 €'000
Gain on disposal of investment	**-**	(1,437)
	-	(1,437)

The Group acquired a minor holding in Hutch Games Limited, when Keywords purchased Liquid Development studio in 2015. During 2020, Hutch Games was acquired and the Group received proceeds of USD$1.7m (€1.4m) in December 2020, and will become entitled to receive further consideration of up to USD$450K over the period 2022 through 2025, subject to earnout targets being met.

6 Financing Income and Cost

	2021 €'000	2020 €'000
Financing income		
Interest received	**62**	76
Foreign exchange gain	**1,983**	-
	2,045	76
Financing cost		
Bank charges	**(520)**	(552)
Interest expense	**(1,040)**	(1,071)
Unwinding of discounted liabilities - lease liabilities	**(985)**	(843)
Unwinding of discounted liabilities - deferred consideration	**(1,882)**	(132)
Foreign exchange loss	**-**	(6,103)
	(4,427)	(8,701)
Net financing income / (cost)	**(2,382)**	(8,625)

7 Taxation

	2021 €'000	2020 €'000
Current income tax		
Income tax on profits of subsidiaries	**17,632**	13,899
Deferred tax (note 21)	**(3,757)**	(2,872)
	13,875	11,027

The tax charge for the year can be reconciled to accounting profit as follows:

	2021	2020
	€'000	€'000
Profit before tax	**47,983**	32,494
Tax charge based on the Effective tax rate*	**10,527**	8,071
Income tax prior year (over) / under provision	**(261)**	(1,302)
Deferred tax prior year (over) / under provision and impact of change in tax rates	**148**	402
Items disallowed for tax purposes	**3,430**	3,846
Exempt and non-taxable income	**(174)**	258
Tax incentives	**(951)**	(892)
Current year tax losses utilised	**(363)**	(3)
Current year tax losses where deferred tax has not been provided	**204**	477
State and other direct taxes	**658**	548
Other differences - net	**657**	(378)
Total tax charge	**13,875**	11,027
*Effective tax rate - being the statutory tax rate relative to the profit before tax in each jurisdiction	**21.9%**	24.8%

The Group's subsidiaries are located in different jurisdictions and are taxed on their residual profit in those jurisdictions. The effective tax rate will vary year on year due to the effect of changes in tax rates and changes in the proportion of profits in each jurisdiction.

	2021	2020
Tax effects relating to each component of other comprehensive income	**€'000**	€'000
Exchange gain / (loss) in net investments foreign operations	**8,228**	(4,909)
Tax (expense) / benefit	**(1,029)**	614
Net of tax amount	**7,199**	(4,295)
Actuarial gain / (loss) on defined benefit plans	**27**	(421)
Tax (expense) / benefit	**-**	-
Net of tax amount	**27**	(421)
Exchange gain / (loss) on translation of foreign operations	**14,581**	(10,843)
Tax (expense) / benefit	**-**	-
Net of tax amount	**14,581**	(10,843)

8 Earnings per Share

	2021	2020
	€ cent	€ cent
Basic	**45.16**	30.32
Diluted	**42.98**	28.71

Earnings	**€'000**	€'000
Profit for the period from continuing operations	**34,108**	21,467

Weighted average number of equity shares	Number	Number
Basic (i)	**75,526,296**	70,800,455
Diluting impact of share options (ii)	**3,826,990**	3,959,878
Diluted (i)	**79,353,286**	74,760,333

(i) Includes (weighted average) shares to be issued:

	Number	Number
	219,146	242,077

(ii) Contingently issuable ordinary shares have been excluded where the conditions governing exercisability have not been satisfied:

	Number	Number
LTIPs	**903,656**	-
Share options	**-**	-
	903,656	-

Details of the number of share options outstanding at the year-end are set out in note 23.

9 Dividends

Dividends paid	**In respect of**	**Approval date**	**€ cent per share**	**Pence STG per share**	**Total dividend €'000**	**Payme da**
Interim	2021	Sep-21	0.81	0.70	615	Oct-
Dividends paid to shareholders 2021			**0.81**	**0.70**	**615**	

Recommended	**In respect of**	**Approval date**	**Expected € cent per share**	**Pence STG per share**	**Expected total dividend €'000**	**Expect payme da**
Final	2021	Mar-22	1.72	1.45	1,299	Jul-

At 31 December 2021, Retained earnings available for distribution (being Retained earnings plus Share-based payments reserve) in the Company were €47.7m (2020: €25.5m). In addition, certain amounts within Merger reserve are considered distributable (see note 22).

In light of COVID-19, the Directors did not recommend any dividend payments for 2020. Dividend payments were resumed in 2021, and the Directors do not foresee any impediment in continuing to implement the dividend policy of the Group moving forward.

The Group does not recognise deferred tax on unremitted retained earnings, as, in general, retained earnings (as dividends) are only remitted where there are minimal or no tax consequences.

10 Staff Costs

Total staff costs (including Directors)	**2021 €'000**	2020 €'000
Salaries and related costs	**263,036**	198,064
Social welfare costs	**30,455**	21,623

Pension costs	**6,685**	5,212
Share-based payments expense	**16,394**	15,350
	316,570	240,249

Average number of employees	**2021**	2020
Operations	**8,821**	7,768
General and administration	**672**	585
	9,493	8,353

Key management compensation	**2021 €'000**	2020 €'000
Salaries and related costs	**1,569**	1,188
Social welfare costs	**201**	366
Pension costs	**25**	45
Share-based payments expense	**698**	1,604
	2,493	3,203

The key management compensation comprises compensation to eleven Directors of Keywords Studios plc during the year (2020: seven).

11 Intangible Assets

	Goodwill €'000	**Customer relationships €'000**	**Intellectual property / Development costs €'000**	**Total* €'000**
Cost				
At 01 January 2020	175,639	37,620	3,527	216,786
Recognition on acquisition of subsidiaries	47,112	17,673	-	64,785
Additions	-	-	259	259
Exchange rate movement	(10,587)	(2,870)	13	(13,444)
At 31 December 2020	**212,164**	**52,423**	**3,799**	**268,386**
Recognition on acquisition of subsidiaries	**97,918**	**11,502**	**-**	**109,420**
Additions	**-**	**-**	**315**	**315**
Exchange rate movement	**14,955**	**4,400**	**-**	**19,355**
At 31 December 2021	**325,037**	**68,325**	**4,114**	**397,476**
Accumulated amortisation				
At 01 January 2020	-	20,018	-	20,018
Amortisation charge	-	6,421	327	6,748
Impairment charge	147	-	1,913	2,060
Exchange rate movement	-	(1,261)	11	(1,250)
At 31 December 2020	**147**	**25,178**	**2,251**	**27,576**
Amortisation charge	**-**	**13,261**	**427**	**13,688**
Exchange rate movement	**-**	**2,269**	**-**	**2,269**
At 31 December 2021	**147**	**40,708**	**2,678**	**43,533**
Net book value				
At 01 January 2021	212,017	27,245	1,548	240,810
At 31 December 2021	**324,890**	**27,617**	**1,436**	**353,943**

* Please note: fully depreciated Music licences have been removed from the prior year comparatives.

Customer relationships and intellectual property / development costs are amortised on a straight-line basis over five years. Customer relationships amortisation commences on acquisition, whereas intellectual property / development costs amortisation commences when the product is launched.

Impairment tests for goodwill

The Group assesses the carrying value of goodwill each year on the basis of budget projections for the coming year extrapolated using a one to five year growth rate and a terminal value calculated using a long-term growth rate projection. The discount rate used of 12.5% (2020: 12.5%) is based on the Board's assessment of the weighted average cost of capital ("WACC") of the Group. The WACC assessment is supported by an annual independently calculated report, using the Capital Asset Pricing Model. However, the Board has excluded the impact of short-term market volatility on these calculations in determining the Group WACC.

Key assumptions

	Actual		Sensitivity analysis			
	2021	2020	**2021**	2020	**2021**	2020
1 to 5 year growth rate assumption	**10%**	10%	**15%**	15%	**5%**	5%
Long-term growth rate assumption	**2%**	2%	**2%**	2%	**2%**	2%
Value in use (€m)	**792**	532	**947**	636	**673**	452
Carrying value - goodwill (€m)	**325**	212				

The value in use calculations were consistently calculated year over year, with no significant changes in the assumptions made. The result of the value in use calculations was that no impairment is required in this period. The Directors consider that no reasonably probable change in the assumptions would result in an impairment.

Specific impairment reviews

In the prior year, due to the uncertainty caused by COVID-19, an impairment charge of €2,060k was recognised, related to intangible assets in certain early technology pre-revenue businesses, fully impairing their carrying value.

12 Right of Use Assets

The Group has entered into leases, across the business, principally relating to property. These property leases have varying terms and renewal rights.

	2021	2020
	€'000	€'000
Cost		
At 01 January	**44,092**	29,384
Additions	**15,392**	15,035
Recognition on acquisition of subsidiaries	**1,402**	2,376
Exchange rate movement	**2,954**	(2,703)
At 31 December	**63,840**	44,092
Accumulated depreciation		
At 01 January	**16,285**	7,915
Depreciation charge	**10,473**	8,402
Impairment charge	**-**	434
Exchange rate movement	**1,091**	(466)
At 31 December	**27,849**	16,285

Net book value		
At 01 January	**27,807**	21,469
At 31 December	**35,991**	27,807

13 Property, Plant and Equipment

	Computers and software €'000	Office furniture and equipment €'000	Leasehold improvements €'000	Total €'000
Cost				
At 01 January 2020	24,843	6,747	11,161	42,751
Exchange rate movement	(2,058)	(155)	(1,339)	(3,552)
Additions	8,338	541	5,029	13,908
Acquisitions through business combinations at fair value	523	125	197	845
Disposals	(2,440)	(352)	(136)	(2,928)
At 31 December 2020	**29,206**	**6,906**	**14,912**	**51,024**
Exchange rate movement	**2,877**	**783**	**1,289**	**4,949**
Additions	**13,492**	**1,444**	**4,424**	**19,360**
Acquisitions through business combinations at fair value	**304**	**266**	**2**	**572**
Disposals	**(2,830)**	**(185)**	**(5,699)**	**(8,714)**
At 31 December 2021	**43,049**	**9,214**	**14,928**	**67,191**
Accumulated depreciation				
At 01 January 2020	14,725	2,751	3,112	20,588
Exchange rate movement	(1,378)	35	(695)	(2,038)
Depreciation charge	5,979	868	2,136	8,983
Disposals	(2,440)	(352)	(136)	(2,928)
At 31 December 2020	**16,886**	**3,302**	**4,417**	**24,605**
Exchange rate movement	**2,342**	**603**	**676**	**3,621**
Depreciation charge	**8,170**	**590**	**2,901**	**11,661**
Disposals	**(2,830)**	**(185)**	**(5,699)**	**(8,714)**
At 31 December 2021	**24,568**	**4,310**	**2,295**	**31,173**
Net book value				
At 01 January 2021	12,320	3,604	10,495	26,419
At 31 December 2021	**18,481**	**4,904**	**12,633**	**36,018**

14 Investments

	2021 €'000	2020 €'000
Investments	**175**	-

From time to time, the Group (via Keywords Ventures Limited) has made modest investments in businesses developing innovative technologies and services that will benefit its clients, while further accelerating the success of investee companies through access to its global platform and relationships.

15 Trade Receivables

	2021	2020
	€'000	€'000
Trade receivables	**69,835**	49,814
Provision for bad debts (note 24)	**(1,768)**	(1,982)
Financial asset held at amortised cost	**68,067**	47,832

Trade receivables arise from revenues derived from contracts with customers.

16 Other Receivables

	2021	2020
Current	**€'000**	€'000
Accrued income from contracts with customers	**9,997**	9,202
Prepayments	**7,114**	4,608
Rent deposits and other receivables	**4,203**	4,816
Multimedia tax credits / video games tax relief	**22,860**	16,668
Tax and social security	**4,936**	3,371
	49,110	38,665

Accrued income from contracts with customers represent mainly contract assets in process and related items. The movement in the year comprises transfers in and out as items are accrued and subsequently invoiced to customers, with no significant amounts written off or impaired in the period, or no significant amounts recognised on the acquisition of subsidiaries.

17 Other Payables

	2021	2020
	€'000	€'000
Current liabilities		
Accrued expenses	**53,526**	31,086
Payroll taxes	**2,666**	2,563
Deferred and contingent consideration (i)	**35,888**	18,808
Other payables (ii)	**16,343**	10,501
	108,423	62,958
Non-current liabilities		
Deferred and contingent consideration (i)	**18,254**	1,994
	18,254	1,994

(i) The movement in deferred and contingent consideration during the financial year was as follows:

	2021	2020
	€'000	€'000
Carrying amount at the beginning of the year	**20,802**	6,035
Consideration settled by cash	**(14,393)**	(2,489)

Consideration settled by shares	**(2,838)**	(3,321)
Unwinding of discount (note 6)	**1,882**	132
Additional liabilities from current year acquisitions (note 27)	**40,059**	21,131
Adjustment arising from prior year business combinations	**5,567**	-
Fair value adjustments	**-**	(66)
Exchange rate movement	**3,063**	(620)
Carrying amount at the end of the year	**54,142**	20,802

In general, in order for contingent consideration to become payable, pre-defined profit and / or revenue targets must be exceeded. The valuation of contingent consideration is derived using data from sources that are not widely available to the public and involves a degree of judgement (Level 3 input in the fair value hierarchy). A 10% increase in expected performance would increase the carrying value of contingent consideration by €1.7m, while a 10% reduction in expected performance would decrease the carrying value by €6.3m. On an undiscounted basis, the Group may be liable for deferred and contingent consideration ranging from €0.2m to a maximum of €61.2m.

(ii) Other payables includes deferred income from contracts with customers of €3,470k (2020: €2,967k), which mainly comprise items invoiced prior to services being delivered. The movement in the year comprises transfers in and out as items are deferred and subsequently recognised as revenue.

18 Loans and Borrowings

Maturity analysis of Loans and borrowings	**2021 €'000**	2020 €'000
Current		
Expiry within 1 year	**-**	-
Non-current		
Expiry between 1 and 2 years	**-**	-
Expiry over 2 years	**129**	195
	129	195
	129	195
Currency denomination		
Euro	**-**	-
Canadian dollars	**129**	195
	129	195

In December 2021 the Company put a new unsecured revolving credit facility ("RCF") in place with a syndicate of four lenders, which replaced its previous €100m secured revolving credit facility. The new RCF is a committed facility that allows financing of up to €150m, which may be drawn down in euro, sterling, US dollars or Canadian dollars, with an option (subject to lender consent), to increase the facility by up to €50m to a total of €200m, at interest rates based on a margin over currency benchmark rates, plus a separate margin charged for the unutilised facility. The new RCF extends to December 2024, with an option to extend the term by two further one-year periods.

Under the previous RCF, security was granted over the major subsidiaries of the Group. As part of putting the new unsecured RCF in place, all security arrangements relating to the previous revolving credit facility have now been released.

In connection with the financial covenants of both the new and previous RCF, the Group are required to comply with and report certain interest cover and leverage ratios. Non-compliance with RCF terms could result in lenders refusing to advance funds under the facility or, in the worst case, calling in outstanding loans. Throughout the period, the Group operated well within the applicable ratio terms of both the new and previous RCF agreements.

While technically any borrowings are repaid and re-borrowed multiple times during the term of the RCF, so long as the Group remains compliant with the financial covenants and certain other terms of the RCF, any debt is rolled from one period to another, with the legal and commercial substance of a multi-year committed facility. Hence the Group presents any RCF liabilities as non-current.

The movements in Loans and borrowings are as follows:

	Current €'000	**Non-current €'000**	**Total €'000**
At 01 January 2020	80	59,671	59,751
Cash flows:			
Drawdowns	-	4,500	4,500
Repayments	-	(64,030)	(64,030)
Non-cash flows:			
Exchange rate movement	(7)	(19)	(26)
At 31 December 2020	**73**	**122**	**195**
Cash flows:			
Repayments	**-**	**(80)**	**(80)**
Non-cash flows:			
Exchange rate movement	**8**	**6**	**14**
At 31 December 2021	**81**	**48**	**129**

Following the share placing in May 2020, the balance of the previous RCF was repaid in June 2020, with the residual balance being loans owed by Keywords Studios QC-Interactive Inc.

Loans and borrowings (classified as financial liabilities under IFRS 9), are held at amortised cost. Interest expenses which are calculated using the effective interest method are disclosed in note 6.

19 Lease Liabilities

The Group has entered into leases, across the business, principally relating to property. These property leases have varying terms and renewal rights. Management applies judgement in determining whether it is reasonably certain that a renewal or termination option will be exercised.

The movement in lease liabilities during the financial year was as follows:

	2021	2020
	€'000	€'000
Carrying amount at the beginning of the year	**28,864**	21,907
Recognition on acquisition of subsidiaries (note 27)	**1,402**	2,376
Liabilities recognised on new leases in the period	**15,392**	15,035
Unwinding of discounted liabilities - lease liabilities	**985**	843
Payment of principal and interest on lease liabilities	**(10,938)**	(9,013)
Exchange rate movement	**1,930**	(2,284)
Carrying amount at the end of the year	**37,635**	28,864

The value of leases not yet commenced to which the lessee is committed, which are not included in lease liabilities at 31 December 2021, was €nil (2020: €10.3m).

	2021	**2021**	**2021**	2020	2020	2020
Maturity analysis of lease liabilities	**€'000**	**€'000**	**€'000**	€'000	€'000	€'000
	Lease payments	**Finance charges**	**Lease liabilities**	Lease payments	Finance charges	Lease liabilities
Current						
Not later than one year	**12,059**	**842**	**11,217**	8,291	930	7,361
Non-current						
Later than one year and not later than five years	**21,299**	**1,488**	**19,811**	18,715	1,013	17,702
Later than five years	**7,000**	**393**	**6,607**	5,307	1,506	3,801
	28,299	**1,881**	**26,418**	24,022	2,519	21,503
At 31 December	**40,358**	**2,723**	**37,635**	32,313	3,449	28,864

The Group has elected not to recognise a lease liability for short-term leases (leases with an expected term of twelve months or less) or for leases of low-value assets. Payments made under such leases are expensed on a straight-line basis. The expenses in the period relating to payments not included in the measurement of the lease liability were as follows:

	2021	2020
Lease payments not recognised as a liability	**€'000**	€'000
Short-term leases	**1,531**	1,747
Leases of low value assets	**-**	-
	1,531	1,747
The future minimum lease payments related to these leases		
Not later than one year	**516**	991
Later than one year and not later than five years	**-**	-

Later than five years	**-**	-
	516	991

The effect of variable lease payments and re-instatement costs on future cash outflows arising from leases is not material for the Group.

20 Employee Defined Benefit Plans

In line with statutory requirements in France, Italy and India, we are required to maintain employee defined benefit termination payment schemes.

In France, employees are entitled to a lump-sum on retirement or early termination, based on salary and length of service (“Indemnité de Fin de Carrière” or “IFC”), entitling the Group's French employees to benefits of up to two months’ salary per year of service.

In Italy, on leaving employment, each employee is entitled to 1/13.5 of their final salary for each year of service (“Trattamento di Fine Rapporto” or ”TFR”).

In India, in compliance with statutory requirements, employees with over five years’ service are entitled to a termination benefit of 15/26 of monthly salary for each year of service (“Gratuity” benefits).

The Group commissions an actuarial valuation of the related liabilities in each jurisdiction annually.

The liabilities at year end are recorded as long term. The actuarial gain or loss is recorded separately within Other comprehensive income. The movements through the year are as follows:

	2021 **€'000**	2020 €'000
Opening liabilities at 01 January	**2,693**	2,049
Service cost	**419**	354
Interest cost	**33**	30
Benefits paid	**(141)**	(110)
Actuarial (gain) / loss	**(27)**	421
Exchange rate movement	**111**	(51)
Closing liabilities at 31 December	**3,088**	2,693

The Directors have considered the key specific risk factors which the Group faces due to the employee defined benefit plans which are in place. Having fully considered all specific elements of these plans, the Directors believe that the key issues faced are as follows:

- The plan is currently 100% unfunded, there are no specific assets to meet the future liabilities as they fall due; as such, there will be a cash flow impact as the liabilities must be met with current working capital as they fall due.

The Group has taken no specific actions to mitigate these factors as due to the long-term nature of the plans it is expected that there will be no sudden financial impact on the Group’s results caused by any of these factors. A maturity profile of the obligation is not presented as the liability is not significant in the context of the Group, and due to the age profile of employees a significant outlay is not anticipated for the foreseeable future.

In 2022, the Group expects the costs of the employee defined benefit plan to be in line with current year levels, as staff levels are not anticipated to change significantly in the period.

The actuarial valuation is based on the Projected Unit Credit Method, in line with IAS 19.

Cost for year	**2021** **€'000**	2020 €'000
Service cost	**419**	354
Interest cost	**33**	30
Actuarial (gain) / loss	**(27)**	421
	425	805

	2021	2020

Actuarial (gain) / loss	**€'000**	€'000
Change due to experience	**41**	98
Change due to demographical assumptions	**(9)**	(93)
Change due to financial assumptions	**(59)**	416
	(27)	421

Assumptions Underlying the Actuarial Valuations and Sensitivities of the Assumptions

For the actuarial valuations, the following demographic and economic and financial assumptions were applied:

- Mortality probabilities were derived from the population demographics, as recorded by the government statistics offices in each jurisdiction.
- Disability, retirement age and other relevant demographic assumptions were taken from relevant life assurance statistics.
- Certain inputs were estimated by management, including:
    - Employee attrition rates, estimated based on company experience in each jurisdiction.
    - In Italy, TFR rules allow for early drawdown of benefits in certain circumstances. Such advances were estimated on the basis of company experience.

Economic and financial assumptions	**2021**	2020
Staff salary increase rate	**4.07%**	3.63%
Inflation rate	**3.04%**	2.93%
Discount rate	**1.67%**	1.23%

Key statistics	**2021**	2020
Staff (number)	**874**	782
Average age (years)	**31**	31
Average service (years)	**4**	4

Interest rate sensitivities	**2021** **€'000**	2020 €'000
(0.25)%	**3,176**	2,842
0.25%	**2,880**	2,568

Mortality rate sensitivities	**2021** **€'000**	2020 €'000
(0.025)%	**3,018**	2,696
0.025%	**3,015**	2,693

Staff turnover rate sensitivities	**2021** **€'000**	2020 €'000
(0.50)%	**3,049**	2,726
0.50%	**2,985**	2,664

Staff salary increase rate sensitivities	**2021** **€'000**	2020 €'000
(0.50)%	**2,976**	2,703
0.50%	**3,072**	2,745

21 Deferred Tax

Details of the deferred tax assets and liabilities, and amounts recognised in the Consolidated statement of comprehensive income are as follows:

	2021 €'000	**2021 €'000**	**2021 €'000**	**2021 €'000**
	Assets	**Liabilities**	**Net**	**(Credited) / charged to income statement**
Defined benefit termination payments	**328**	**-**	**328**	**(259)**
Available losses	**1,817**	**-**	**1,817**	**(660)**
Rent-free period provisions	**222**	**-**	**222**	**(147)**
Fixed asset tax base versus accounting book value	**1,818**	**1,702**	**116**	**(217)**
Deferred tax related to tax credits	**-**	**3,570**	**(3,570)**	**1,464**
Deferred tax arising on items deductible on a paid basis	**5,557**	**1,761**	**3,796**	**(1,857)**
Recognition on acquisition of subsidiaries	**2,539**	**3,006**	**(467)**	**-**
Deferred tax arising on intangibles	**9,187**	**3,801**	**5,386**	**(2,345)**
Net tax assets / liabilities	**21,468**	**13,840**	**7,628**	**(4,021)**
Impact of change in tax rates				**189**
Prior year (over) / under provision				**75**
Total (credited) / charged to income statement				**(3,757)**

	2020 €'000	2020 €'000	2020 €'000	2020 €'000
	Assets	Liabilities	Net	(Credited) / charged to income statement
Defined benefit termination payments	69	-	69	(19)
Available losses	1,157	-	1,157	293
Rent-free period provisions	75	-	75	(64)
Fixed asset tax base versus accounting book value	603	704	(101)	104
Deferred tax related to tax credits	38	2,144	(2,106)	(1,057)
Deferred tax arising on items deductible on a paid basis	3,344	1,405	1,939	(949)
Recognition on acquisition of subsidiaries	9,363	3,970	5,393	-
Deferred tax arising on intangibles	-	2,352	(2,352)	(1,451)
Net tax assets / liabilities	14,649	10,575	4,074	(3,143)
Impact of change in tax rates				289
Prior year (over) / under provision				(18)
Total (credited) / charged to income statement				(2,872)

The deferred tax asset not recognised on available losses at the period end is €3.2m (2020: €3.2m).

22 Shareholders' Equity

Share Capital

	Issue date	Per share €	Number of ordinary £0.01 shares	Number of ordinary £0.01 shares - to be issued	Share capital €'000	Share capital - to be issued €'000	Share premium €'000	Merger reserve €'000
At 01 January 2020			**65,212,515**	**349,721**	**780**	**5,310**	**20,718**	**132,712**
Acquisition-related issuance of shares:								
Sunny Side Up	06-Jan-20	12.46	60,179	(60,179)	1	(750)	-	749
Laced	14-Apr-20	17.48	8,194	(8,194)	-	(143)	-	143
Cord Worldwide	14-Apr-20	17.48	65,550	(65,550)	1	(1,145)	-	1,145
Descriptive Video Works	12-Jun-20	17.93	35,560	(35,560)	-	(638)	-	637
Coconut Lizard	25-Jun-20	20.23	-	19,739	-	399	-	-
Studio Gobo and Electric Square	19-Aug-20	16.72	198,576	-	2	-	-	3,319
Maverick Media	26-Aug-20	24.63	-	13,579	-	334	-	-
TV+SYNCHRON	05-Oct-20	13.12	68,608	(68,608)	1	(900)	-	899
G-Net Media	24-Nov-20	23.26	-	130,448	-	3,034	-	-
Ichi	02-Dec-20	15.95	55,612	(55,612)	1	(886)	-	886
Jinglebell	10-Dec-20	25.94	-	11,564	-	300	-	-
High Voltage Software	14-Dec-20	26.06	-	307,597	-	8,017	-	-
Indigo Pearl	15-Dec-20	26.27	-	20,125	-	529	-	-
Kantan	22-Dec-20	15.86	26,085	(26,085)	-	(414)	-	414
Acquisition-related issuance of shares			**518,364**	**183,264**	**6**	**7,737**	**-**	**8,192**
Share placing	20-May-20	16.23	6,900,000	-	77	-	-	109,372
Exercise of share options		0.96	1,448,364	-	16	-	2,233	-
At 31 December 2020			**74,079,243**	**532,985**	**879**	**13,047**	**22,951**	**250,276**
Acquisition-related issuance of shares:								
High Voltage Software	12-Jan-21	26.06	307,597	(307,597)	4	(8,017)	-	8,013
Heavy Iron	12-Jan-21	31.84	-	12,914	-	411	-	-
Tantalus	18-Mar-21	27.87	-	368,750	-	10,275	-	-
Tantalus	15-Apr-21	27.87	368,750	(368,750)	4	(10,275)	10,271	-
Climax Studios	21-Apr-21	33.53	-	232,517	-	7,797	-	-
Climax Studios	17-May-21	33.53	232,517	(232,517)	3	(7,797)	-	7,794
Ichi	28-May-21	15.94	14,635	(14,635)	-	(233)	-	233
Coconut Lizard	25-Jun-21	18.24	19,739	(19,739)	-	(399)	-	399
Kantan	02-Jul-21	15.86	12,614	(12,614)	-	(200)	-	200

Kantan related adjustment	02-Jul-21	15.86	-	(2,683)	-	-	-	-
AMC	11-Aug-21	33.49	-	25,080	-	840	-	-
Maverick Media	27-Aug-21	25.35	36,211	(13,579)	-	(334)	-	918
Coconut Lizard	07-Sep-21	28.44	7,962	-	-	-	-	227
G-Net Media	06-Dec-21	23.26	130,410	(130,410)	2	(3,034)	-	3,032
G-Net Media related adjustment	06-Dec-21	23.26	-	(38)	-	(1)	-	-
Waste	16-Dec-21	30.78	-	20,585	-	634	-	-
Indigo Pearl	22-Dec-21	26.27	20,125	(20,125)	-	(529)	-	528
High Voltage Software	24-Dec-21	29.77	69,130	-	1	-	-	2,057
Acquisition-related issuance of shares			**1,219,690**	**(462,841)**	**14**	**(10,862)**	**10,271**	**23,401**
Employee Share Purchase Plan			13,982	-	-	-	398	-
Exercise of share options			962,860	-	11	-	4,929	-
At 31 December 2021			**76,275,775**	**70,144**	**904**	**2,185**	**38,549**	**273,677**

Subject to applicable law, the Company's articles of association and any relevant authority of the Company passed by the shareholders in general meeting, there is no limit to the number of shares which the Company can issue, nor are there are any restrictions on dividends or distributions on such shares. In the context of the Company's general meeting authorities, at the Company's AGM on 26 May 2021 its shareholders gave the Directors the authority to allot the following number of shares (or grant rights to subscribe for, or convert any security into, shares) in the capital of the Company:

a) Up to 3,723,243 shares in respect of the Company's Long Term Incentive Plan and Share Option Plan (5% of the Company's issued share capital as at 8 April 2021); and
b) Otherwise, up to 24,796,802 shares (33.3% of the Company's issued share capital as at 8 April 2021).

This authority is considered prudent as it gives the Company flexibility to take advantage of possible opportunities which may arise from time to time. The authority granted at the 2021 AGM will expire on the earlier of (i) fifteen months after 26 May 2021; and (ii) the conclusion of the 2022 AGM.

Shares to be issued are valued at the share price at the date of acquisition, and are recorded in accordance with IAS 32.16.

Shares held in the Employee Benefit Trust ("EBT")

	2021		2020	
	Shares	**€'000**	Shares	€'000
Ordinary shares held in the EBT	**335,425**	**1,997**	335,425	1,997

Reserves

The following describes the nature and purpose of each reserve within owners' equity:

Reserve	Description and purpose
Retained earnings	Cumulative net gains and losses recognised in the Consolidated Statement of Comprehensive Income.
Foreign exchange reserve	Gains or losses arising on retranslation of the net assets of the overseas operations into euro.
Share premium	The share premium account is the amount received for shares issued in excess of their nominal value, net of share issuance costs.
Share-based payments reserve	The Share-based payments reserve is the credit arising on share-based payment charges in relation to the Company's share and share option schemes.
Shares to be issued	For deferred consideration which is to be provided for by the issue of a fixed number of shares at a future defined date, where there is no obligation on Keywords to offer a variable number of shares, the deferred consideration is classified as an Equity Arrangement and the value of the shares is fixed at the date of the acquisition.
Merger reserve	The merger reserve was initially created following the Group reconstruction, when Keywords Studios plc acquired the Keywords International Limited group of companies. When the Group uses Keywords Studios plc shares as consideration for the acquisition of an entity and has secured at least a 90% equity holding in the acquisition, the value of the shares in excess of the nominal value (net of share issuance costs) is also recorded within this reserve, in line with S612 of the Companies Act 2006. Within Merger reserve are balances related to the share premium on the share placements in 2015 and 2020, of €14.4m and €109.5m respectively, both completed via a cash box structure, with the Company acquiring the net proceeds via a share for share exchange. In both cases, the share premium on the issuance of new shares was credited to Merger reserve (in accordance with S610 of the Companies Act 2006). At the time of the placements, the proceeds were not allocated to a specific acquisition or specific purpose, and thus, amounts totalling €123.9m included in the Merger reserve are considered distributable.

23 Share Incentive Schemes

In July 2013, at the time of the IPO, a Share Option Scheme and a Long-Term Incentive Plan (“LTIP”) was put in place, while in 2021, the Group introduced an Employee Share Purchase Plan. The charge in relation to these arrangements is as follows:

	2021	2020
	€'000	€'000
Share option scheme expense	**3,446**	2,576
LTIP option expense	**12,904**	12,774
Employee Share Purchase Plan	**44**	-
Share-based payments expense	**16,394**	15,350

Of the total Share-based payments expense, €698k relates to Directors of the Company (2020: €1,007k).

Share Option Scheme

Share options are granted to Executive Directors and to permanent employees. The exercise price of the granted options is equal to the market price of the shares at the time of the award of the options. The Company has no legal or constructive obligation to repurchase or settle the options in cash.

Movements in the number of share options outstanding and their related weighted average exercise prices are as follows:

	2021		2020	
	Average exercise price in £ per share	**Number of options**	Average exercise price in £ per share	Number of options
Outstanding at the beginning of the period	**12.66**	**2,345,238**	9.97	2,148,102
Granted	**25.48**	**616,000**	15.93	822,000
Lapsed	**18.96**	**(163,791)**	15.64	(179,151)
Exercised	**11.46**	**(373,879)**	4.55	(445,713)
Outstanding at the end of the period	**15.68**	**2,423,568**	12.66	2,345,238
Exercisable at the end of the period	**6.74**	**668,734**	4.39	638,238
Weighted average share price at date of exercise	**27.42**		17.91	

Summary by year

Year of Option	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Exercise price	£1.58	£2.54	£7.76	£17.10	£15.88	£15.93	£25.48	
Outstanding at the beginning of the period	458,613	34,296	127,034	374,982	588,000	762,313	-	2,345,238
Granted	-	-	-	-	-	-	616,000	616,000
Lapsed	-	-	(500)	(11,000)	(37,000)	(64,291)	(51,000)	(163,791)
Exercised	(73,318)	(13,719)	(69,534)	(119,058)	(98,250)	-	-	(373,879)
Outstanding at the end of the period	385,295	20,577	57,000	244,924	452,750	698,022	565,000	2,423,568
Exercisable at 31 December 2021	385,295	20,577	57,000	111,590	93,750	522	-	668,734
Exercisable 2022	-	-	-	133,334	179,500	232,500	-	545,334

Exercisable 2023	-	-	-	-	179,500	232,500	188,333	600,333
Exercisable 2024	-	-	-	-	-	232,500	188,333	420,833
Exercisable 2025	-	-	-	-	-	-	188,334	188,334

The inputs into the Black-Scholes model, used to value the options are as follows:

Year of Option	2015	2016	2017	2018	2019	2020	2021	Weighted average
Weighted average share price (£)	£1.64	£2.54	£7.75	£17.22	£16.09	£16.00	£26.42	
Weighted average exercise price (£)	£1.58	£2.54	£7.76	£17.10	£15.88	£15.93	£25.48	
Fair value at measurement date (€)	€0.56	€0.40	€1.13	€3.79	€5.72	€6.06	€9.32	
Average expected life	4 Years	4 Years	4 Years	4 Years	4 Years	4 Years	4 Years	
Expected volatility	28.03%	27.17%	24.79%	35.87%	45.23%	50.15%	47.70%	
Risk-free rates	0.90%	0.58%	0.16%	0.89%	0.81%	0.07%	0.15%	
Average expected dividend yield	0.75%	0.55%	0.21%	0.10%	0.10%	0.10%	0.10%	
Weighted average remaining life of options in months	-	-	-	5	17	29	41	22

Expected volatility was determined by reference to KWS volatility. The expected life used in the model has been adjusted based on management's best estimate, for the effects of non-transferability, exercise restrictions and behavioural considerations.

Long-term Incentive Plan Scheme

LTIP share awards are subject to KWS performance versus the designated share index over a three-year period.

Movements in the number of share options outstanding and their related weighted average exercise prices are as follows:

	2021		2020	
	Average exercise price in £ per share	**Number of options**	Average exercise price in £ per share	Number of options
Outstanding at the beginning of the period	**0.01**	**3,692,817**	0.01	3,445,868
Granted	**0.01**	**932,656**	0.01	1,428,000
Lapsed	**0.01**	**(312,006)**	0.01	(178,400)
Exercised	**0.01**	**(608,569)**	0.01	(1,002,651)
Outstanding at the end of the period	**0.01**	**3,704,898**	0.01	3,692,817
Exercisable at the end of the period	**0.01**	**559,506**	0.01	373,648
Weighted average share price at date of exercise	**27.62**		17.34	

Summary by year

Year of Option	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Total**
Exercise price	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	
Outstanding at the beginning of the period	47,358	132,293	196,030	799,000	1,133,936	1,384,200	-	3,692,817
Granted	-	-	-	-	-	-	932,656	932,656
Lapsed	-	-	-	(6,606)	(115,400)	(161,000)	(29,000)	(312,006)
Exercised	(8,358)	(46,405)	(90,994)	(462,812)	-	-	-	(608,569)
Outstanding at the end of the period	39,000	85,888	105,036	329,582	1,018,536	1,223,200	903,656	3,704,898
Exercisable at 31 December 2021	39,000	85,888	105,036	329,582	-	-	-	559,506
Exercisable 2022	-	-	-	-	1,018,536	-	-	1,018,536
Exercisable 2023	-	-	-	-	-	1,223,200	-	1,223,200
Exercisable 2024	-	-	-	-	-	-	903,656	903,656

The inputs into the Monte Carlo binomial model, used to value the options, are as follows:

Year of Option	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**Weighted average**
Weighted average share price (£)	£1.60	£2.56	£7.75	£17.24	£16.05	£16.00	£26.42	
Weighted average exercise price (£)	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	£0.01	
Fair value at measurement date (€)	€1.38	€1.74	€4.96	€11.83	€13.98	€13.28	€16.73	
Average expected life	3 Years	3 Years	3 Years	3 Years	3 Years	3 Years	3 Years	

Expected volatility	28.21%	27.11%	24.79%	35.87%	45.26%	50.15%	47.70%	
Risk-free rates	0.88%	0.54%	0.16%	0.89%	0.81%	0.07%	0.13%	
Weighted average remaining life of options in months	-	-	-	-	5	17	29	14

Expected volatility was determined by reference to KWS share price volatility. The expected life used in the model has been adjusted based on management's best estimate, for the effects of non-transferability, exercise restrictions and behavioural considerations. As any dividends earned are to be re-invested into the business, the impact of dividends has been ignored in the calculation of the LTIP share option charge.

LTIP's vest on the third anniversary of the grant, if the market performance criteria are met. LTIPs must be exercised before the seventh anniversary of the grant.

Salary Shares

In 2021, a total of 26,738 Salary Shares were granted to a number of Executive Directors under the LTIP plan, with 2,462 shares vesting two years after the grant date, and 24,276 shares vesting three years after the grant date. The average fair value of the shares at the grant date was €32.08.

24 Financial Instruments and Risk Management

Interest Rate Risk

Interest rate risk is the risk that the value of financial instruments will fluctuate due to changes in market interest rates. The Group's income and operating cash flows are substantially independent of changes in market interest rates. The management monitors interest rate fluctuations on a continuous basis and acts accordingly.

Where the Group has a significant amount of surplus cash, it invests in higher earning interest deposit accounts. Due to interest rate conditions, the interest rates for short-term deposits are at similar levels to those achieved for longer terms.

The effect of a strengthening or a weakening of 1% in interest rates charged during the reporting period on the interest expense would have resulted in the following pre-tax profit / (loss) impact for the year:

	1% Strengthening 2021	**1% Weakening 2021**	1% Strengthening 2020	1% Weakening 2020

	€'000	**€'000**	€'000	€'000
Interest expense	**-**	**-**	(290)	257

Credit Risk

The Group's main financial assets are cash and cash equivalents, as well as trade and other receivables which represent the Group's maximum exposure to credit risk in connection with its financial assets.

Credit risk arises when a failure by counterparties to discharge their obligations could reduce the amount of future cash inflows from financial assets on hand at the reporting date. Credit risk arising in the context of the Group's operations is not significant with the total bad debt provision at the balance sheet date amounting to 2.5% of net trade receivables (2020: 4%). Customer credit risk is managed at appropriate Group locations according to established policies, procedures and controls. Customer credit quality is assessed and credit limits are established where appropriate. Outstanding customer balances are regularly monitored and a review for indicators of impairment (evidence of financial difficulty of the customer, payment default, breach of contract, etc.) is carried out at each reporting date. Significant balances are reviewed individually while smaller balances are grouped and assessed collectively. Receivables balances are unsecured and non-interest-bearing. The trade receivables balances disclosed comprise a large number of customers spread across the Group's activities and geographies with balances classified as "Not past due" representing 77.5% of the total trade receivables balance at the balance sheet date (2020: 79%). Trade and other receivables are carried on the Consolidated statement of financial position net of bad debt provisions.

The ageing of trade receivables can be analysed as follows:

	Total €'000	**Not past due €'000**	**1-2 months past due €'000**	**More than 2 months past due €'000**
At 31 December 2021	**68,067**	**52,753**	**14,192**	**1,122**
At 31 December 2020	47,832	37,936	7,678	2,218

A provision for doubtful debtors is included within trade receivables and can be reconciled as follows:

	2021 €'000	2020 €'000
Provision at the beginning of the year	**1,982**	1,283
Impairment of financial assets (trade receivables) charged to administration expenses	**821**	1,293
Foreign exchange movement in the year	**63**	(284)
Utilised	**(1,098)**	(310)
Provision at the end of the year	**1,768**	1,982

Trade receivables loss allowance is estimated using a practical expedient to arrive at lifetime expected credit losses. Overdue receivables are evaluated to calculate an expected credit loss using a historical credit loss experience of 1.0% (2020: 0.5%). Taking into account internal and external information, the historical credit loss experience may be adjusted where it is determined that there has been a significant increase in credit risk. Where a receivable is credit impaired, the impairment is recognised immediately, and impaired balances are removed from the expected credit loss calculation.

	Total €'000	**Not past due €'000**	**1-2 months past due €'000**	**More than 2 months past due €'000**
Trade receivables gross	**69,835**	**53,286**	**14,502**	**2,047**
Credit impaired	**(1,070)**	**-**	**(165)**	**(905)**
Expected credit losses	**(698)**	**(533)**	**(145)**	**(20)**
At 31 December 2021	**68,067**	**52,753**	**14,192**	**1,122**

	Total €'000	**Not past due €'000**	**1-2 months past due €'000**	**More than 2 months past due €'000**
Trade receivables gross	49,814	38,150	7,887	3,777
Credit impaired	(1,733)	(23)	(170)	(1,540)
Expected credit losses	(249)	(191)	(39)	(19)
At 31 December 2020	47,832	37,936	7,678	2,218

There were no related party receivables at the end of either period presented.

Currency Risk

Currency risk is the risk that the value of financial instruments will fluctuate due to changes in foreign exchange rates. The foreign exchange risk arises for the Group where assets and liabilities arise in a currency other than the functional currency of the entity.

The Group's policy, where possible, is for Group entities to manage foreign exchange risk at a local level by matching the currency in which revenue is generated with the expenses incurred and by settling liabilities denominated in their functional currency with cash generated from their own operations in that currency. Where Group entities have liabilities denominated in a currency other than their functional currency (and have insufficient reserves of that currency to settle them), cash already denominated in that currency will, where possible, be transferred from elsewhere within the Group.

The Group is predominantly exposed to currency risk on the balances held within working capital across the Group and the exposure is concentrated in the movement of the US dollar, sterling and Canadian dollar against the euro. The effect of a strengthening or weakening of 10% in those currencies against the euro at the reporting date on the working capital balances would, all other variables held constant, have resulted in the following pre-tax profit / (loss) impact for the year:

	2021 €'000	**2021 €'000**	2020 €'000	2020 €'000
	10% Strengthening	**10% Weakening**	10% Strengthening	10% Weakening
US dollar to euro	**5,545**	**(4,536)**	4,712	(3,855)
Sterling to euro	**(1,333)**	**1,091**	835	(683)
Canadian dollar to euro	**169**	**(138)**	594	(486)

Total Financial Assets and Liabilities

The carrying amount of the financial assets and liabilities shown in the Consolidated and Company Statements of financial position are stated at amortised costs, with the exception of contingent consideration held at fair value.

Liquidity Risk

Liquidity risk arises from the Group's management of working capital and the financial charges on its debt instruments.

The Group's policy is to ensure that it will have sufficient cash to allow it to meet its liabilities when they become due. The Directors consider liquidity risk is mitigated by the strong working capital position, with €229.7m of current assets, including cash of €105.7m available to settle liabilities as they fall due.

The following are the contractual maturities (representing undiscounted contractual cash flows) of the Group's financial liabilities:

	Carrying value	Contractual cash flows				
	Total	Total	Within 1 year	1-2 years	2-5 years	Over 5 years
At 31 December 2021	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**	**€'000**
Trade payables	**11,122**	**11,122**	**11,122**	**-**	**-**	**-**
Deferred and contingent consideration (i)	**54,142**	**61,223**	**37,953**	**14,008**	**9,262**	**-**
Other payables	**72,535**	**72,535**	**72,535**	**-**	**-**	**-**
Loans and borrowings	**129**	**129**	**81**	**48**	**-**	**-**
Loan interest	**-**	**6**	**4**	**2**	**-**	**-**
Lease liabilities	**37,635**	**40,358**	**12,059**	**8,257**	**13,042**	**7,000**
Total	**175,563**	**185,373**	**133,754**	**22,315**	**22,304**	**7,000**

	Carrying value	Contractual cash flows				
	Total	Total	Within 1 year	1-2 years	2-5 years	Over 5 years
At 31 December 2020	€'000	€'000	€'000	€'000	€'000	€'000
Trade payables	8,170	8,170	8,170	-	-	-
Deferred and contingent consideration (i)	20,802	26,442	20,699	5,743	-	-
Other payables	44,150	44,150	44,150	-	-	-
Loans and borrowings	195	195	73	122	-	-
Loan interest	10	10	5	5	-	-
Lease liabilities	28,864	32,313	8,291	7,153	11,562	5,307
Total	102,191	111,280	81,388	13,023	11,562	5,307

(i) Deferred and contingent consideration at 31 December 2021 has arisen on business combinations, and is based on contracted amounts to be paid in the future to sellers under share purchase agreements. In general, in order for contingent consideration to become payable, pre-defined profit and / or revenue targets must be exceeded. On an undiscounted basis, the Group may be liable for deferred and contingent consideration up to a maximum of €61.2m.

25 Capital Management

	2021	2020
Group	**€'000**	€'000
Loans and borrowings (note 18)	**129**	195
Less: cash and cash equivalents	**(105,710)**	(103,070)
Net debt / (net cash) position	**(105,581)**	(102,875)
Total equity	**472,120**	371,235
Net debt / (net cash) to capital ratio	**(22.4)%**	(27.7)%

The Group manages capital by monitoring debt to capital and net debt ratios. This debt to capital ratio is calculated as net debt to total equity. Net debt is calculated as loans and borrowings (as shown in the Consolidated statement of financial position) less cash and cash equivalents. The liquidity risk and cash management for the Group is managed centrally by the Group Treasury function. Group Treasury manage bank balances centrally, and monitors the credit rating and stability of the institutions the Group banks with. The Board receives projections on a monthly basis as well as information regarding cash balances. The Group's strategy is to preserve a strong cash base and secure access to finance at reasonable cost by maintaining a good credit rating.

26 Related Parties and Shareholders

Italicatessen Limited, a company registered in Ireland, is related by virtue of a common significant shareholder. P.E.Q. Holdings Limited is 100% owner of Italicatessen Limited. At 31 December 2021, P.E.Q. Holdings Limited owned 0.66% (2020: 4.73%) of the Company. In addition, Mr. Giorgio Guastalla is a Director of Italicatessen Limited, P.E.Q. Holdings Limited and the Company, and owns, or controls, 90% of the share capital of P.E.Q. Holdings Limited. Mr. Giorgio Guastalla retired from the Board of the Company in January 2022.

There were no transactions in the period with Italicatessen Limited (2020: €13k), who provided canteen services to Keywords International Limited on an arm's length basis. This activity ceased in 2020, and there were no balances owing to Italicatessen Limited at the end of either period presented.

In addition, on an arm's length basis, the Group paid rent of €22k in 2020, in respect of premises occupied by employees of the Group in Dublin to Mr. Giorgio Guastalla, Director of the Company, and shareholder of P.E.Q. Holdings Limited. This activity also ceased in 2020, and there were no balances owing at the end of either period presented in respect of this activity.

The details of key management compensation (being the remuneration of the Directors) are set out in note 10.

27 Business Combinations

	2021 €'000	2020 €'000
Details of goodwill and the fair value of net assets acquired		
Book value:		
Property, plant and equipment	**572**	872
Right of use assets	**1,402**	2,376
Trade and other receivables - gross	**7,439**	4,069
Bad debt provision	**(7)**	-
Cash and cash equivalents	**10,618**	9,477
Trade and other payables	**(8,245)**	(4,904)
Lease liabilities	**(1,402)**	(2,376)
Book value of identifiable assets and liabilities acquired	**10,377**	9,514
Fair value adjustments:		
Identifiable intangible assets	**11,502**	17,673
Identifiable tangible assets	**-**	(27)
Deferred tax assets	**2,539**	9,363
Trade and other payables	**-**	1,003
Deferred tax liabilities	**(3,006)**	(3,970)
Total fair value adjustments	**11,035**	24,042
Net assets acquired	**21,412**	33,556
Goodwill from current year acquisitions	**97,918**	47,112
Total purchase consideration	**119,330**	80,668

	2021 €'000	2020 €'000
Details of purchase consideration and outflows from current acquisitions		
Cash	**59,314**	46,924
Deferred cash	**1,565**	41
Deferred consideration contingent on performance	**33,726**	21,090
Combination put / call options to acquire residual 15% of Tantalus	**4,768**	-
Shares to be issued	**19,957**	12,613
Total purchase consideration	**119,330**	80,668
Related acquisition costs charged through to the Statement of comprehensive income:	**1,099**	307
Number of shares:		
Shares issued on acquisition	**621,852**	-
Fixed number of shares to be issued	**37,994**	503,052
Net cash outflow arising on acquisition:		
Cash paid in the period	**59,314**	46,924
Less: cash and cash equivalent balances transferred	**(10,617)**	(9,477)
Net cash outflow arising on acquisition	**48,697**	37,447

	2021 €'000	2020 €'000
Details of pro forma revenues and profitability of current acquisitions		
Pre-acquisition revenue	**16,345**	35,729
Pre-acquisition revenue with Keywords Group	**(1,908)**	-
Post-acquisition revenue	**24,990**	7,208
Pro forma revenue	**39,427**	42,937

Pre-acquisition profit before tax	**2,573**	9,399
Post-acquisition profit before tax	**9,653**	2,561
Pro forma profit before tax	**12,226**	11,960

During the period, the Group completed six acquisitions, Heavy Iron, Tantalus, Climax Studios, AMC, Waste and Wicked Witch, purchasing 100% of the share capital of these businesses, except in the case of Tantalus where the Group acquired an 85% interest. A combination of put and call options are in place requiring the sellers to sell, or the Group to buy, the remaining 15% shareholding in three years. The Group has recognised a contingent consideration liability at fair value, being the Group's estimate of the present value of the amount required to settle the liability, and has accounted for the acquisition as if a 100% interest was acquired on acquisition (see note 3).

The aggregate amounts recognised in respect of the identifiable assets acquired and liabilities assumed on acquisitions completed in the period are set out in the table above. Details of the purchase consideration and other information relevant to the evaluation of the financial effect of the acquisitions are also presented.

The main factors leading to the recognition of goodwill on the acquisitions are the presence of certain intangible assets in the acquired entities, which are not valued for separate recognition. These include expertise in the acquired entities, enhancing and growing our service capabilities, broadening our service offering, and extending our geographical footprint, further building out our global platform.

The goodwill that arose from business combinations completed in the period that is expected to be deductible for tax purposes was €9.1m.

28 Subsidiaries

The results and financial position of all the subsidiaries are included in the consolidated financial statements. Details of the Company's direct and indirect subsidiaries as at 31 December 2021 are set out below:

Name	Country of incorporation	Date of incorporation / acquisition	Ownership ^	Registered office
3455 Productions, LLC	USA	24-Nov-20	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
9409-2954 Québec Inc.	Canada	04-Dec-19	100%	1751 Richardson Street, Suite 8400, Montreal, Quebec, H3K 1G6, Canada
Alset Limited	UK	17-Aug-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Appsectest Limited	UK	22-Jan-19	48.8%	Unit 13 Orton Enterprise Centre, Bakewell Road, Peterborough, Cambridgeshire, PE2 6XU, UK
Babel Media India Private Limited	India	17-Feb-14	100%	3rd floor, Vardhman Orchard Plaza, Plot No 4, LSC, West Enclave, Pitampura, New Delhi, 110034, India
Babel Media Limited *	UK	17-Feb-14	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Babel Media USA, Inc.	USA	17-Feb-14	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
Bitsy SG Limited	UK	17-Aug-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Blindlight, LLC	USA	08-Jun-18	100%	8335 Sunset Blvd, Ste 307, West Hollywood, CA 90069, USA
Climax Development Limited	UK	22-Apr-21	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Climax Studios Limited	UK	22-Apr-21	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Coconut Lizard Limited	UK	25-Jun-20	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Cord Worldwide Limited	UK	07-Apr-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
d3t Development Limited	UK	30-Aug-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
d3t Limited	UK	19-Oct-17	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Descriptive Video Works Inc.	Canada	11-Jun-19	100%	400-725 Granville Street, PO Box 10325, Vancouver BC V7Y 1G5, Canada
Eastern New Media Limited	Hong Kong	19-May-17	100%	4404, 44/F Hopewell Centre, 183 Queen's Road East, Wanchai, Hong Kong
Edugame Solutions Private Limited	India	09-Oct-14	100%	D - 3/C, Munirka Flats, New Delhi, 110067, India
Electric Square Limited	UK	17-Aug-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Fire Without Smoke Inc	USA	29-May-18	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
Fire Without Smoke Limited	UK	29-May-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
GameSim Inc.	USA	16-May-17	100%	13501 Ingenuity Drive, Suite 310, Orlando, FL 32826, USA
g-Net Media, Inc.	USA	24-Nov-20	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
High Voltage Software, Inc.	USA	14-Dec-20	100%	2345 Pembroke Ave., Hoffman Estates, IL 60169, USA
HVS Nola LLC	USA	14-Dec-20	100%	201 St. Charles Ave., Suite 2220, New Orleans, LA 70170, USA
Ichi Creative Limited	USA	26-Nov-19	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
Ichi Limited	UK	26-Nov-19	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Indigo Pearl Limited	UK	15-Dec-20	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Itsy SGD Limited	UK	17-Aug-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Jinglebell S.r.l.	Italy	10-Dec-20	100%	Via Marco d'Oggiono 12, Milan, Italy
Jurango Pty Limited ~~	Australia	20-Dec-21	100%	29 Thornton Crescent, Mitcham, VIC 3132, Australia
Keywords (Shanghai) Information Technology Limited	China	02-Apr-15	100%	7th Floor, Building A, Dong Ti YuHui Road, Hongkou District, Shanghai, China
Keywords Asia Private Limited	Singapore	15-Mar-16	100%	20 Kallang Avenue, #06-6A, Lobby B, Pico Creative Centre, 339411, Singapore
Keywords Australia Holdings Limited	UK	17-Mar-21	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Keywords Australia Pty Limited ~	Australia	18-Mar-21	85%	12 Spring Street, Fitzroy, Victoria, 3065, Australia
Keywords Canada Holdings Inc.	Canada	27-Oct-17	100%	1751 Richardson Street Suite 8400, Montreal QC, H3K 1G6, Canada
Keywords do Brasil Localização e Tradução Ltda	Brazil	18-Jan-15	100%	Av. Churchill, 109 - Sala 204 - Centro, Rio de Janeiro-RJ, CEP: 20020-050, Brazil
Keywords Germany Holdings GmbH	Germany	06-Sep-19	100%	Moriz-Seeler-Strasse 5-7, Franz Ehrlich Haus,12489 Berlin, Germany
Keywords International Co., Limited.	Japan	30-Nov-10	100%	2-3-1 Kudanminami, Chiyoda-ku, Tokyo 102-0074, Japan
Keywords International Limited	Ireland	13-May-98	100%	Whelan House, South County Business Park, Dublin 18, Ireland
Keywords International Pte. Limited	Singapore	24-Apr-14	100%	20 Kallang Avenue, #06-6A, Lobby B, Pico Creative Centre, 339411, Singapore
Keywords International, Inc.	USA	26-Sep-12	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
Keywords Studios B.C., Inc.	Canada	27-Oct-17	100%	1700-1075 West Georgia Street, Vancouver, BC, V6E 3C, Canada
Keywords Studios France SAS	France	08-Jun-16	100%	59 Boulevard Exelmans, 75016 Paris, France
Keywords Studios Italy S.R.L.	Italy	08-May-14	100%	Via Egadi 2, Milano, MI, 20144, Italy
Keywords Studios Korea Corporation	South Korea	11-Jan-21	100%	16th Floor, Gangnam Building, 1321-1, Seocho-dong, Seocho-gu, Seoul 137-070, South Korea
Keywords Studios Los Angeles, Inc.	USA	08-May-14	100%	1115 Flower Street, Burbank, CA 91502, USA
Keywords Studios Limited *	Ireland	27-Mar-18	100%	Whelan House, South County Business Park, Dublin 18, Ireland
Keywords Studios México, S. de R.L. de C.V.	Mexico	16-Jul-15	100%	Torrente #75, Colonia Ampliación Alpes, Del. Álvaro Obregón, CP. 01710, Ciudad de México, México
Keywords Studios Netherlands B.V.	Netherlands	05-Feb-19	100%	Wilhelmina van Pruisenweg 35, 2595AN The Hague, The Netherlands
Keywords Studios Poland Spolka z.o.o.	Poland	04-Feb-21	100%	11 Ul. Na Zjezdzie, Krakow 30-527, Poland
Keywords Studios QC-Games Inc.	Canada	17-Feb-14	100%	1751 Richardson, suite 8400, Montréal, Québec, H3K1G6, Canada
Keywords Studios QC-Interactive Inc.	Canada	16-Nov-16	100%	1751 Richardson, suite 8400, Montréal, Québec, H3K1G6, Canada
Keywords Studios QC-Tech Inc.	Canada	06-Jan-15	100%	1751 Richardson, suite 8400, Montréal, Québec, H3K1G6, Canada
Keywords Studios Spain SLU	Spain	16-Jul-15	100%	Julián Camarillo 6A, 3B, 28037 Madrid, Spain
Keywords UK Holdings Limited	UK	28-Mar-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Keywords US Holdings Inc.	USA	23-Oct-17	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
Keywords Ventures Limited	UK	06-Apr-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Laced Music Limited	UK	07-Apr-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK

Lakshya Digital Private Limited *	India	09-Oct-14	100%	3rd floor, Vardhman Orchard Plaza, Plot No 4, LSC, West Enclave, Pitampura, New Delhi, 110034, India
Lakshya Digital Singapore Pte. Limited	Singapore	09-Oct-14	100%	20 Kallang Avenue, #06-6A, Lobby B, Pico Creative Centre, 339411, Singapore
Liquid Development, LLC	USA	19-Aug-15	100%	411 SW 2nd Ave Ste 300, Portland, OR 97204, USA
Liquid Violet Limited *	UK	15-Jan-14	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Lonsdale Miller Limited	UK	15-Dec-20	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Marching Cube, LLC	USA	22-Jan-20	100%	815A Brazos #334, Austin, TX 78701, USA
Maverick Media Limited	UK	27-Aug-20	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Paleblue Limited	UK	07-Apr-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Player Research Limited	UK	26-Oct-16	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
PT Limitless Indonesia	Indonesia	19-May-17	100%	Jl. Timoho II, No. 32, Yogyakarta, Indonesia
Snowed In Studios, Inc	Canada	19-Jul-18	100%	400-981 Wellington Street West, Ottawa, Ontario, K1Y 2Y1, Canada
Sperasoft Poland Spólka z.o.o.	Poland	13-Dec-17	100%	Ul. Na Kozłówce 27, 30-664 Kraków, Poland
Sperasoft Studios LLC	Russia	13-Dec-17	100%	196084, Russia, Saint-Petersburg, Kievskaya street, 5 - building
Sperasoft, Inc.	USA	13-Dec-17	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
SperaSystems LLC	USA	13-Dec-17	100%	2033 Gateway Pl Ste 500 San Jose, CA 95110-3712, USA
SPOV Limited	UK	16-Feb-17	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Strongbox Limited	Seychelles	19-May-17	100%	306 Victoria House, Victoria, Mahe, Seychelles
Studio Gobo Limited	UK	17-Aug-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Sunny Side Up Creative Inc.	Canada	03-Jan-19	100%	410 Boulevard Charest Est, Suite 410, Québec, Québec, G1K 8G3, Canada
Synthesis Deutschland GmbH *	Germany	12-Apr-16	100%	Holstenkamp 46 A, Bahrenfeld, 22525 Hamburg, Germany
Synthesis Global Solutions SA *	Switzerland	12-Apr-16	100%	Corso Elvezia 16, 6900 Lugano, Ticino, Switzerland
Tantalus Media Pty Limited ~	Australia	18-Mar-21	100%	13 Spring Street, Fitzroy, Victoria, 3065, Australia
The Trailerfarm Limited	UK	13-Sep-18	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
TV+SYNCHRON Berlin GmbH	Germany	01-Oct-19	100%	Moriz-Seeler-Strasse 5-7, Franz Ehrlich Haus, 12489, Berlin, Germany
VMC Consulting Corporation	USA	24-Oct-17	100%	251 Little Falls Drive, Wilmington, New Castle, DE 19808, USA
Waste Creative Limited	UK	16-Dec-21	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Waste Holdings Limited	UK	16-Dec-21	100%	1st Floor, 39 Earlham Street, London, WC2H 9LT, UK
Wicked Witch Software Pty Limited ~~	Australia	20-Dec-21	100%	29 Thornton Crescent, Mitcham, VIC 3132, Australia
Wizcorp Inc.	Japan	18-Apr-19	100%	3-10-14, Higashi-Nihonbashi 3-chome, Sunrise Tachibana 6F, Chuo-ku, 103-0004, Tokyo, Japan
Xcelerator Machine Translations Limited	Ireland	12-Dec-19	100%	Invent, Dublin City University, Glasnevin, Dublin 9, Ireland
Xloc, Inc.	USA	08-May-17	100%	8801 Fast Park Drive, Suite 301, Raleigh, NC 27617, USA

* Indicates a direct subsidiary (all other holdings are indirect, being subsidiaries of various intermediate group holding companies)

^ Proportion of voting rights and ordinary share capital ultimately held by Keywords Group

+ The registered office address was changed from 201 Temple Chambers, 3-7 Temple Avenue, London, EC4Y 0DT , England, on 26 January 2022

~ A combination of put and call options are in place requiring the sellers to sell, or the Group to buy the remaining 15% shareholding in three years. The Group has accounted for the acquisition as if a 100% interest was acquired on acquisition (see note 3).

~~ Acquired by Keywords Australia Pty Limited

Post-acquisition, the Group reviews entities to streamline activities and close any dormant entities acquired or re-structured entities. Restructuring details are set out below:

Name	Country of incorporation	Date of incorporation / acquisition	Ownership	Date of re-structuring	Re-structuring details
Ichi Holdings Limited	UK	26-Nov-19	100%	16-Dec-21	Liquidated
Keywords International Barcelona SL	Spain	09-Jan-15	100%	23-Nov-21	Merged
Red Hot Software (Shanghai) Limited	China	19-May-17	100%	30-Jun-21	Dissolved
Red Hot Software (Zhengzhou) Limited	China	19-May-17	100%	21-Oct-21	Dissolved

29 Events after the Reporting Date

Crisis in Ukraine

Since the year end, the Group's operations have been impacted by the tragic events in Ukraine. While the Group does not have operations in Ukraine, the Group does have Game Development teams in a number of locations in Russia working exclusively for customers located outside of the country. The Group also works with a number of freelance suppliers in Ukraine. Our immediate priority has been to do all that we can to support our people and our freelance suppliers in the territory, while contributing to the wider humanitarian efforts in the region.

Revenues delivered from the Group's operations in Russia are presented in note 4. In 2021, the Group delivered €29.4m of revenue in Russia, up from €28.0m in 2020, and represents approximately 5.7% of Group revenue. While we continue to focus on serving our customers, we are also focused on mitigating any potential business interruption or other risks associated with this activity.

Geographical analysis of non-current assets from continuing businesses is also presented in note 4. Approximately €1.4m of the amount presented within the "Other" category relates to Russian located property, plant and equipment, being mainly computer equipment. The Group does not have significant receivables exposure in Russia, as work produced in Russia is contracted and collected in other territories. In addition, the Group does not have significant amounts of other current assets or right of use assets located in Russia. Thus, any exposure to impairment of assets located in Russia is not considered material.

The Directors have applied downside sensitivities to the Group's projections to evaluate any potential goodwill impairment resulting from the crisis. The result of the value in use calculations was that no impairment would be required even in a worst case scenario where all Russian located production capacity was excluded from projections.

Alternative performance measures

The Group reports a number of alternative performance measures ("APMs") to present the financial performance of the business, that are not GAAP measures as defined under IFRS. The Directors believe that these measures, in conjunction with the IFRS financial information, provide the users of the financial statements with additional information to provide a more meaningful understanding of the underlying financial and operating performance of the Group. The measures are also used in the Group's internal strategic planning and budgeting processes and for setting internal management targets. These measures can have limitations as analytical tools and therefore should not be considered in isolation, or as a substitute for IFRS measures.

The principal measures used by the Group are set out below:

Organic revenue growth – Acquisitions are a core part of the Group's growth strategy. Organic revenue growth measures are used to help understand the underlying trading performance of the Group excluding the impact of acquisitions. Organic revenue growth is calculated by adjusting the prior year revenues, adding pre-acquisition revenues for the corresponding period of ownership to provide a like-for-like comparison with the current year, and applying the prior year's foreign exchange rates to both years.

Constant exchange rates ("CER") – Given the international nature of the Group's operations, foreign exchange movements can have an impact on the reported results of the Group when they are translated into the Group's reporting currency, the euro. In order to understand the underlying trading performance of the business, revenue is also presented using rates consistent with the prior year in order to provide year over year comparability.

Adjusted profit and earnings per share measures – Adjusted profit and earnings per share measures are used to provide management and other users of the financial statements with a clear understanding of the underlying profitability of the business over time. Adjusted profit measures are calculated by adding the following items back to the equivalent GAAP profit measures:

- **Amortisation of intangible assets** – Customer relationships and music licence amortisation commences on acquisition, whereas intellectual property / development costs amortisation commences when the product is launched. These costs, by their nature, can vary by size and amount each year. As a result, amortisation of intangibles is added back to assist with the understanding of the underlying trading performance of the business and to allow comparability across regions and categories.
- **Costs of acquisition and integration** – The level of acquisition activity can vary each year and therefore the costs associated with acquiring and integrating businesses are added back to assist with the understanding of the underlying trading performance of the Group.
- **Share-based payments** – The Group uses share-based payments as part of remuneration to align the interests of senior management and employees with shareholders. These are non-cash charges and the charge is based on the Group's share price which can change. The costs are therefore added back to assist with the understanding of the underlying trading performance.
- **Foreign exchange gains and losses** – The Group does not hedge foreign currency translation exposures. The effect on the Group's results of movements in exchange rates can vary each year and are therefore added back to assist with understanding the underlying trading performance of the business.
- **COVID-19 government subsidies claimed** – In 2020 the Group applied for COVID-19 government subsidies in various jurisdictions, introduced in response to the global pandemic. These subsidies have been added back in order to present adjusted profit and cash flow measures consistently year-on-year.
- **Investment income** – The Group acquired a minor holding in Hutch Games Limited, when Keywords purchased Liquid Development studio in 2015. In 2020, Hutch Games Limited was acquired and the Group received €1.4m proceeds in December 2020. As the gain has arisen outside the normal trading activities of the Group, the income has been added back to assist with the understanding of the underlying trading performance.

Free cash flow measures – The Group aims to generate sustainable cash flow (Free cash flow) in order to support its acquisition program and to fund dividend payments to shareholders. Free cash flow is measured as Net cash generated by / (used in) operating activities after capital expenditure, payments of principal on lease liabilities, interest and tax payments, but before acquisition and integration cash outlay, investment income and dividend payments. Adjusted free cash flow is a measure of cash flow adjusting for capital expenditure that is supporting growth in future periods (represented by capital expenditure in excess of depreciation). In the prior year, the measure has also been adjusted for COVID-19 subsidies claimed given the one-time nature of this income.

Net debt – The Group manages capital by monitoring debt to capital and net debt ratios. Net debt is calculated as Loans and borrowings less Cash and cash equivalents, and excludes Lease liabilities. The debt to capital ratio is calculated as net debt as a percentage of total equity.

The remainder of this section provides a reconciliation of the APMs with the relevant IFRS GAAP equivalent.

Service line analysis

The following table presents revenue growth by service line at both actual exchange rates ("AER") and constant exchange rates ("CER"). Constant exchange rates are calculated by retranslating current year reported numbers at the corresponding 2020 foreign exchange rates, in order to give management and other users of the financial statements better visibility of underlying trading performance against the prior year.

	2021 Revenue AER €m	**2021 Revenue CER €m**	2020 Revenue AER €m	**2021 Growth AER %**	**2021 Growth CER %**
Art Creation*	**49.3**	**49.5**	38.9	**26.7%**	**27.2%**
Marketing*	**46.2**	**46.4**	18.4	**151.1%**	**152.2%**
Game Development	**138.9**	**140.0**	80.0	**73.6%**	**75.0%**
Audio	**61.3**	**61.9**	47.2	**29.9%**	**31.1%**
Functional Testing	**92.7**	**92.0**	78.5	**18.1%**	**17.2%**
Localization	**50.8**	**51.4**	45.4	**11.9%**	**13.2%**
Localization Testing	**27.1**	**27.2**	23.3	**16.3%**	**16.7%**
Player Support	**45.9**	**47.1**	41.8	**9.8%**	**12.7%**
	512.2	**515.5**	373.5	**37.1%**	**38.0%**

*The prior year comparatives have been re-classified to separately report Marketing services, previously reported within the Art Creation service line.

Pro forma revenue

Pro forma revenue is calculated by adding pre-acquisition revenues of current year acquisitions to the current year revenue numbers, to illustrate the size of the Group had the acquisitions been included from the start of the financial year.

	2021 Revenue AER €m	**2021 Pre-acquisition revenue AER €m**	**2021 Pro forma Revenue AER €m**
Art Creation	**49.3**	**1.6**	**50.9**
Marketing	**46.2**	**6.2**	**52.4**
Game Development	**138.9**	**8.5**	**147.4**
Audio	**61.3**	**-**	**61.3**
Functional Testing	**92.7**	**-**	**92.7**
Localization	**50.8**	**-**	**50.8**
Localization Testing	**27.1**	**-**	**27.1**
Player Support	**45.9**	**-**	**45.9**
	512.2	**16.3**	**528.5**

Organic revenue at constant exchange rates

Organic revenue at constant exchange rates is calculated by adjusting the prior year revenues, adding pre-acquisition revenues for the corresponding period of ownership, and applying the 2020 foreign exchange rates to both years.

	2020	2020	2020	**2021**	**2021**	**2021**

	Revenue AER €m	Pre-acquisition revenue AER €m	Like for like revenue AER €m	**Revenue growth CER €m**	**Revenue CER €m**	**Organic revenue growth CER %**
Art Creation*	38.9	0.9	39.8	**9.7**	**49.5**	**24.4%**
Marketing*	18.4	16.3	34.7	**11.7**	**46.4**	**33.7%**
Game Development	80.0	40.7	120.7	**19.3**	**140.0**	**16.0%**
Audio	47.2	1.4	48.6	**13.3**	**61.9**	**27.4%**
Functional Testing	78.5	-	78.5	**13.5**	**92.0**	**17.2%**
Localization	45.4	0.4	45.8	**5.6**	**51.4**	**12.2%**
Localization Testing	23.3	-	23.3	**3.9**	**27.2**	**16.7%**
Player Support	41.8	-	41.8	**5.3**	**47.1**	**12.7%**
	373.5	59.7	433.2	**82.3**	**515.5**	**19.0%**

* The prior year comparatives have been re-classified to separately report Marketing services, previously reported within the Art Creation service line. The equivalent 2020 organic growth rates were 30.8% for Marketing and 13.0% for Art Creation respectively.

Adjusted operating costs

This comprises Administrative expenses as reported in the Consolidated statement of comprehensive income, adding back share-based payments expense, costs of acquisition and integration, amortisation and impairment of intangible assets, depreciation, non-controlling interest and deducting bank charges. In order to present the measure consistently year-on-year, the impact of COVID-19 government subsidies claimed is also excluded.

Calculation		**2021 €'000**	2020 €'000
Administrative expenses	Consolidated statement of comprehensive income	**(149,749)**	(102,090)
Share-based payments expense	Consolidated statement of comprehensive income	**16,394**	15,350
Costs of acquisition and integration	Consolidated statement of comprehensive income	**7,972**	2,650
Amortisation and impairment of intangible assets	Consolidated statement of comprehensive income	**13,688**	8,808
Depreciation - property, plant and equipment	Note 13	**11,661**	8,983
Depreciation - right of use assets	Note 12	**10,473**	8,402
Non-controlling interest	Consolidated statement of comprehensive income	**67**	85
Bank charges	Note 6	**(520)**	(552)
COVID-19 government subsidies claimed	Consolidated statement of comprehensive income	**-**	(9,231)
Adjusted operating costs		**(90,014)**	(67,595)
Adjusted operating costs as a % of revenue		**17.6%**	18.1%

Adjusted operating profit

The Adjusted operating profit consists of the Operating profit as reported in the Consolidated statement of comprehensive income, adjusted for share-based payments expense, costs of acquisition and integration, and amortisation and impairment of intangible assets. In order to present the measure consistently year-on-year, the impact of investment income and COVID-19 government subsidies claimed are also excluded.

Calculation		**2021 €'000**	2020 €'000
Operating profit	Consolidated statement of comprehensive income	**50,365**	41,119
Share-based payments expense	Consolidated statement of comprehensive income	**16,394**	15,350
Costs of acquisition and integration	Consolidated statement of comprehensive income	**7,972**	2,650
Amortisation and impairment of intangible assets	Consolidated statement of comprehensive income	**13,688**	8,808
Investment income	Consolidated statement of comprehensive income	**-**	(1,437)
COVID-19 government subsidies claimed	Consolidated statement of comprehensive income	**-**	(9,231)
Adjusted operating profit		**88,419**	57,259
Adjusted operating profit as a % of revenue		**17.3%**	15.3%

EBITDA

EBITDA comprises Operating profit as reported in the Consolidated statement of comprehensive income, adjusted for amortisation and impairment of intangible assets, depreciation, and deducting bank charges.

Calculation		**2021 €'000**	2020 €'000
Operating profit	Consolidated statement of comprehensive income	**50,365**	41,119
Amortisation and impairment of intangible assets	Consolidated statement of comprehensive income	**13,688**	8,808
Depreciation - property plant and equipment	Note 13	**11,661**	8,983
Depreciation - right of use assets	Note 12	**10,473**	8,402
Bank charges	Note 6	**(520)**	(552)
EBITDA		**85,667**	66,760

Adjusted EBITDA

Adjusted EBITDA comprises EBITDA, adjusted for share-based payments expense, costs of acquisition and integration and non-controlling interest. In order to present the measure consistently year-on-year, the impact of investment income and COVID-19 government subsidies claimed are also excluded.

Calculation		**2021 €'000**	2020 €'000
EBITDA	As above	**85,667**	66,760
Share-based payments expense	Consolidated statement of comprehensive income	**16,394**	15,350
Costs of acquisition and integration	Consolidated statement of comprehensive income	**7,972**	2,650
Non-controlling interest	Consolidated statement of comprehensive income	**67**	85
Investment income	Consolidated statement of comprehensive income	**-**	(1,437)
COVID-19 government subsidies claimed	Consolidated statement of comprehensive income	**-**	(9,231)
Adjusted EBITDA		**110,100**	74,177
Adjusted EBITDA as a % of revenue		**21.5%**	19.9%

Adjusted profit before tax

Adjusted profit before tax comprises Profit before taxation as reported in the Consolidated statement of comprehensive income, adjusted for share-based payments expense, costs of acquisition and integration, amortisation and impairment of intangible assets, non-controlling interest, foreign exchange gains and losses, and unwinding of discounted liabilities. In order to present the measure consistently year-on-year, the impact of investment income and COVID-19 government subsidies claimed are also excluded.

Calculation		**2021 €'000**	2020 €'000
Profit before taxation	Consolidated statement of comprehensive income	**47,983**	32,494
Share-based payments expense	Consolidated statement of comprehensive income	**16,394**	15,350
Costs of acquisition and integration	Consolidated statement of comprehensive income	**7,972**	2,650
Amortisation and impairment of intangible assets	Consolidated statement of comprehensive income	**13,688**	8,808
Non-controlling interest	Consolidated statement of comprehensive income	**67**	85
Foreign exchange (gain) / loss	Note 6	**(1,983)**	6,103
Unwinding of discounted liabilities - deferred consideration	Note 6	**1,882**	132
Investment income	Consolidated statement of comprehensive income	**-**	(1,437)
COVID-19 government subsidies claimed	Consolidated statement of comprehensive income	**-**	(9,231)
Adjusted profit before tax		**86,003**	54,954

Adjusted profit before tax as a % of revenue	**16.8%**	14.7%

Adjusted effective tax rate

The Adjusted effective tax rate is the Taxation expense as reported in the Consolidated statement of comprehensive income, adjusted for the tax impact of the adjusting items in arriving at Adjusted profit before tax, as a percentage of the Adjusted profit before tax.

Calculation		**2021 €'000**	2020 €'000
Adjusted profit before tax	As above	**86,003**	54,954
Taxation	Consolidated statement of comprehensive income	**13,875**	11,027
Effective tax rate before tax on adjusting items	Taxation / Adjusted profit before tax	**16.1%**	20.1%
Tax arising on bridging items to Adjusted profit before tax^		**4,729**	785
Adjusted taxation		**18,604**	11,812
Adjusted effective tax rate	Adjusted taxation / Adjusted profit before tax	**21.6%**	21.5%

^Being mainly the tax impact of share-based payments expense €2.8m, amortisation of intangible assets €2.1m, less foreign exchange €0.2m, with the prior year being mainly the tax impact of amortisation of intangible assets €1.8m, foreign exchange €1.2m, share-based payments expense €0.7m, less COVID-19 government subsidies claimed €2.6m and investment income €0.3m.

Adjusted earnings per share

The Adjusted profit after tax comprises the Adjusted profit before tax, less the Taxation expense as reported in the Consolidated statement of comprehensive income, adjusted for the tax impact of the adjusting items in arriving at Adjusted profit before tax.

The Adjusted earnings per share comprises the Adjusted profit after tax divided by the non-diluted weighted average number of shares as reported in note 8.

Calculation		**2021 €'000**	2020 €'000
Adjusted profit before tax	As above	**86,003**	54,954
Taxation	Consolidated statement of comprehensive income	**(13,875)**	(11,027)
Tax arising on bridging items to Adjusted profit before tax^		**(4,729)**	(785)
Adjusted profit after tax		**67,399**	43,142
Denominator (weighted average number of equity shares)	Note 8	**75,526,296**	70,800,455
		€ c	€ c
Adjusted earnings per share		**89.24**	60.93
Adjusted earnings per share % growth		**46.5%**	24.9%

^Being mainly the tax impact of share-based payments expense €2.8m, amortisation of intangible assets €2.1m, less foreign exchange €0.2m, with the prior year being mainly the tax impact of amortisation of intangible assets €1.8m, foreign exchange €1.2m, share-based payments expense €0.7m, less COVID-19 government subsidies claimed €2.6m and investment income €0.3m.

Return on capital employed (ROCE)

ROCE represents the Adjusted profit before tax (excluding net interest costs, unwinding of discounted lease liabilities and bank charges, and also adjusted to include pre-acquisition profits of current year acquisitions), expressed as a percentage of the capital employed. As the Group continues to make multiple acquisitions each year, the calculation further adjusts the Adjusted profit before tax and the capital employed as if all the acquisitions made during each year were made at the start of that year.

Capital employed represents Total equity as reported on the Consolidated statement of financial position, adding back employee defined benefit plan liabilities, cumulative amortisation of intangible assets (customer relationships), acquisition-related liabilities (deferred and contingent consideration), together with loans and borrowings, while deducting cash and cash equivalents.

Calculation		**2021 €'000**	2020 €'000
Adjusted profit before tax	As above	**86,003**	54,954
Interest received	Note 6	**(62)**	(76)
Bank charges	Note 6	**520**	552
Interest expense	Note 6	**1,040**	1,071
Unwinding of discounted liabilities - lease liabilities	Note 6	**985**	843
Pre-acquisition profits of current year acquisitions	Note 27	**2,573**	9,399
Adjusted profit before tax including pre-acquisition profit and excluding net interest		**91,059**	66,743
Total equity	Consolidated statement of financial position	**472,120**	371,235
Employee defined benefit plans	Consolidated statement of financial position	**3,088**	2,693

Cumulative amortisation of intangibles assets (customer relationships)	Note 11	**40,708**	25,178
Deferred and contingent consideration	Note 17	**54,142**	20,802
Loans and borrowings	Note 18	**129**	195
Cash and cash equivalents	Consolidated statement of financial position	**(105,710)**	(103,070)
Capital employed		**464,477**	317,033
Return on capital employed	Adjusted profit before tax including pre-acquisition profit and excluding net interest expense / capital employed	**19.6%**	21.1%

Free cash flow

Free cash flow represents Net cash generated by / (used in) operating activities as reported in the Consolidated statement of cash flows, adjusted for acquisition and integration cash outlay, capital expenditure, net interest paid, payments of principal on lease liabilities and is presented both before and after taxation paid. In order to present the measure consistently year-on-year, the impact of investment income is also excluded.

Calculation		**2021 €'000**	2020 €'000
Net cash generated by / (used in) operating activities	Consolidated statement of cash flows	**90,545**	76,420
Acquisition and integration cash outlay:			
Costs of acquisition and integration	Consolidated statement of comprehensive income	**7,972**	2,650
Fair value adjustments to contingent consideration	Consolidated statement of cash flows	**(5,567)**	66
Fair value adjustments to right of use assets	Consolidated statement of cash flows	**-**	(434)
Acquisition of property, plant and equipment	Consolidated statement of cash flows	**(19,360)**	(13,908)
Investment in intangible assets	Consolidated statement of cash flows	**(315)**	(259)
Investment income	Consolidated statement of comprehensive income	**-**	(1,437)
Interest received	Consolidated statement of cash flows	**62**	76
Interest paid	Consolidated statement of cash flows	**(2,738)**	(1,722)
Payments of principal on lease liabilities	Consolidated statement of cash flows	**(9,953)**	(8,170)
Free cash flow after tax		**60,646**	53,282
Taxation paid	Consolidated statement of cash flows	**23,948**	4,459
Free cash flow before tax		**84,594**	57,741

Adjusted free cash flow

Adjusted free cash flow is a measure of cash flow adjusting for capital expenditure that is supporting growth in future periods (as measured by capital expenditure in excess of maintenance capital expenditure). In order to present the measure consistently year-on-year, the impact of COVID-19 government subsidies claimed is also excluded.

Calculation		**2021 €'000**	2020 €'000
Free cash flow before tax	As above	**84,594**	57,741
Capital expenditure in excess of depreciation:			
Acquisition of property, plant and equipment	Consolidated statement of cash flows	**19,360**	13,908
Depreciation - property, plant and equipment	Consolidated statement of cash flows	**(11,661)**	(8,983)
Capital expenditure in excess of depreciation		**7,699**	4,925
COVID-19 government subsidies claimed	Consolidated statement of comprehensive income	**-**	(9,231)
Adjusted free cash flow		**92,293**	53,435

Adjusted cash conversion rate

The Adjusted cash conversion rate is the Adjusted free cash flow as a percentage of the Adjusted profit before tax:

Calculation		**2021 €'000**	2020 €'000
Adjusted free cash flow	As above	**92,293**	53,435
Adjusted profit before tax	As above	**86,003**	54,954
Adjusted cash conversion ratio	Free cash flow before tax and capital expenditure in excess of depreciation, as a % of Adjusted profit before tax	**107.3%**	97.2%

Net debt

The Group manages capital by monitoring debt to capital and net debt ratios. Net debt is calculated as Loans and borrowings (as shown in the Consolidated statement of financial position) less Cash and cash equivalents, and excludes Lease liabilities.

Calculation		**2021** **€'000**	2020 €'000
Loans and borrowings	Note 18	**129**	195
Cash and cash equivalents	Consolidated statement of financial position	**(105,710)**	(103,070)
Net debt / (net cash) position		**(105,581)**	(102,875)