



Xaar plc
Interim Report 2021

X A A R

XAAR

OUR VISION

A world where you
can print anything
you can imagine

Printhead

Our Printhead business unit focuses on the design, manufacture, marketing and sales of printheads and associated products which are used in a variety of applications such as Ceramic Tile Decoration, Graphics, Décor, Labels and Packaging as well as 3D Printing and Additive Manufacturing.

Product Print Systems

Product Print involves printing all kinds of industrial and promotional objects such as medical equipment, automotive parts, tools, apparel, appliances, sports equipment and toys. Xaar company, EPS, manufactures and sells a range of highly customised print systems for these applications, including some using Xaar's own inkjet printheads.

3D Printing

Our 3D Printing business unit, in which Xaar 3D sits, develops 3D printing solutions based on Xaar3D SAF™ technology which will have unique capabilities to address new markets especially in manufacturing. With investment from Xaar plc and Stratasys, Xaar 3D can leverage the natural synergies between global leaders in inkjet technology and 3D printing technology.

Highlights

Innovation is at the heart of Xaar

We are a world leader in the development of inkjet technology. Our core business is to design and manufacture printheads which we sell globally to Original Equipment Manufacturers (OEMs) and User Developer Integrators (UDIs). Our technology drives the conversion of analogue printing and manufacturing methods to digital inkjet, which is more efficient, more economical and more productive than the traditional methods it replaces. We also develop print systems for product decoration and 3D printing which use our inkjet technology.

We put collaboration at the core of our global partnerships, helping our customers to unleash the true power of inkjet technology and open up a world of opportunities for their business.

Operational and strategic highlights

- Printhead business continues to perform well, with a growing pipeline of new product development. Proactive measures are being implemented to mitigate the impact from COVID-19 related supply constraints which are being experienced across the industry
- Successful roll out of the ImagineX platform is continuing:
 - April 2021 launch of the Xaar Nitrox printhead attracting new customers and increased opportunities
 - Official launch of Xaar Irix (14 September), strengthening our product offering in the Coding & Marking sector
- Engineered Printing Solutions (EPS) underlying performance remains on track with progress made in the modular strategy, however H1 2021 results have been impacted by non-cash adjustments relating to slow moving and obsolete inventory. Operational changes are being made to ensure the business is best positioned to take advantage of the compelling growth opportunity in the market
- Acquisition of FFEI Limited (FFEI) on 11 July 2021, a leading integrator and manufacturer of industrial digital inkjet systems and digital life science technology, as part of the vertical integration strategy to grow Xaar's capability and help accelerate customer adoption of our printhead technology
- New corporate headquarters in Cambridge, UK expected to deliver £0.7 million of annual cost savings. New Customer Service Centre opened in Shenzhen, China
- Expect to announce details of planned divestment of Xaar 3D investment soon
- Established an ESG Committee with a view to announcing the Sustainability Roadmap to 2030 with the full-year results.

Financial highlights

- First half revenue of £26.3 million in line with management expectations, representing an increase of 11% and 8% on H1 and H2 2020 respectively
- Gross margin of 29%, up 2ppts on H1 and H2 2020
- Printhead adjusted EBITDA improved from a £0.1 million loss in H1 2020 to a £0.8 million profit in H1 2021
- 25% increase in R&D spend in continuing operations to £2.6 million focused on the ImagineX platform and product roadmap
- Strong closing balance sheet with net cash, excluding cash from the 3D business, of £17.1 million.

- Adjusted measures exclude items from the IFRS operating loss margin and profit/(loss) before tax, including restructuring and investment expenses, share-based payment charges, exchange differences on intra-group transactions, gain on derivative financial assets, other operating income and research and development credit, per the reconciliation of adjusted financial measures on page 19.
- Net cash includes cash, cash equivalents and treasury deposits, excluding Xaar 3D.

Figures and percentages included in this report are subject to rounding adjustments arising from conversion to £thousands or £millions from actual figures. Accordingly, figures shown for the same category presented in different tables may vary slightly, and figures shown as totals in certain tables may not be an arithmetic aggregation of the figures that precede them.

What's in this report?

Highlights	01
Strategy review	02
Business performance	06
Governance update	09
Directors' responsibilities statement	12
Interim financial statements	13
Notes to the interim financial information	18
Advisors	28

Revenue – continuing operations

26.3€m

H1 2021	26.3
H2 2020	24.3
H1 2020 (restated)	23.7
H2 2019	23.9
H1 2019	25.5

Adjusted loss before tax¹

(2.3€m)

H1 2021	(2.3)
H2 2020	(2.6)
H1 2020 (restated)	(1.3)
H2 2019	(5.5)
H1 2019	(2.5)

(Loss)/profit before tax

(2.1€m)

H1 2021	(2.1)
H2 2020	(5.7)
H1 2020 (restated)	1.3
H2 2019	(10.2)
H1 2019	(0.7)

Net cash balance²

17.1€m

H1 2021	17.1
H2 2020	18.1
H1 2020	18.0
H2 2019	16.2
H1 2019	16.5

Strategy review



We are pleased with our continued strong performance which, despite challenging market conditions, demonstrates the success of our strategy and underlying strength of the business. These results reflect the positive momentum we have generated across the business. Our foundations remain strong, as we continue to gain new customers and positively re-engage in our core markets. The COVID-19 pandemic continues to cause disruption for business, however we are determined to minimise interruption to the supply of printheads, and we are well-positioned to withstand further volatility caused by the pandemic.

Launching the Xaar Irix further demonstrates our drive and ability to deliver new products from our ImagineX platform. Continued investment in capability and capacity, together with the addition of FFEI, will drive future growth and accelerate strong performance.

John Mills
Chief Executive
Officer

Ian Tichias
Chief Financial
Officer

We are pleased with our continued strong performance which, despite challenging market conditions, demonstrates the positive momentum our strategy is driving across the business, as we continue to attract new customers and see positive re-engagement with the Group. Investment in capability and capacity will provide us with further opportunities to accelerate our strategy and future growth, and the success we have experienced in the first half of the year positions us to return the overall business to profitability in the medium term.

Business units Printhead

Customer-centric business model

We have OEMs and UDIs across multiple applications developing machines using a range of our products. Customer engagement has remained strong in 2021, with new accounts driving revenue growth and providing visibility of future revenue growth. We have a growing pipeline of new machine development as a result of the demonstrable technology advantages of Xaar's printheads. During 2021 we have seen increased activity in the glass printing, Printhead Circuit Boards (PCB) manufacture and 3D printing applications. FFEI was acquired in July 2021 as a first step to widen the product portfolio on offer to further engage UDIs.

As part of the customer-centric focus, our end-to-end customer journey management is providing an enhanced level of service and support over the entire product lifecycle. This service enables the reduction of customer development times, and therefore time to market, and also provides the customer with improved aftersales support.

With sales in Asia having grown by 30% in H1 2021 compared to H1 2020, and most significantly in China where the growth was 45%, customers continue to re-engage and our sales pipeline is increasing. The new Customer Service Centre in Shenzhen, China is now open and focused on providing both our existing and potential customers across the region with a higher level of service, including enhanced technical support and training through a demonstration centre, waveform development and RMA facilities.

The Printhead business has seen some COVID-19 related supply constraints causing global component shortages in the market in H1 2021. Actions have been taken to mitigate their impact and maintain continuity of supply for the remainder of 2021 and into 2022, incurring increased costs.

This will have a modest adverse impact on gross margins continuing into 2022. Due to ongoing uncertainty in relation to the COVID-19 Delta variant impact in Asia, we continue to be cautious with regards to our H2 2021 trading outlook.

Product roadmap and ImagineX platform

The ImagineX platform, which builds upon several technology and development programmes from our legacy Bulk and Thin Film investment, is driving the next phase of Xaar's success by enabling the business to increase its addressable market whilst establishing market leading products across all sectors.

The ImagineX platform is delivering new features and performance, and will carry on doing so over future years, providing significant enhancements to the current product portfolio; these include substantially improved speed and throughput, aqueous compatibility, increased throw distance to improve image quality on curved surfaces, increased robustness to improve the life of the printhead and maintain image quality, capability to operate at higher viscosities enabling a broader range of fluids to be printed, and higher resolutions. These features will help strengthen our position in markets where we are already well represented and will drive improved use in several markets where adoption levels of Xaar technology are lower, such as Wide Format Graphics (WFG), Labels, Packaging and Textiles. The performance enhancements in our product roadmap give a clear path for OEMs to upgrade their products and maintain their product differentiation.

In April 2021 Xaar Nitrox was launched, delivering improved print uniformity, capable of running at higher frequencies which increase printhead speed and productivity by 40%. These enhancements make it ideal for Ceramics, Labels, and Advanced Manufacturing applications. The product has been well received by the market and is being adopted by both current and new customers alike.

Xaar Irix is the latest product from our ImagineX platform and is officially launched today, strengthening our product offering in the Coding & Marking sector. The Xaar Irix delivers improved drop placement accuracy ensuring great image quality at longer print distances, guaranteeing reliable printing every time. The printhead is simple to use, easy to integrate, and designed as a non-disposable technology with a long life for minimal environmental impact.

We are engaged with OEM partners on several programmes related to our ImagineX platform, with products at alpha and beta trial stages. Development of an aqueous compatible printhead is progressing well, and is currently in alpha build test phase on track for product launch at the end of 2022. Aqueous compatibility, which enables the use of water based conductive inks and fluids, will open significant new markets for Xaar.

Xaar's Bulk Printhead Technology offers several benefits over the competition, principally with TF Technology™ (ink recirculation) and ability to print with the widest range of fluids. Benefits of Ultra High Viscosity Technology capability, as provided by most of Xaar's printheads, including the Xaar 2002 launched in 2020, are now more apparent to end users and so driving an increased interest in the technological advantages available from our printheads.

Over the longer term Xaar will increasingly vertically integrate in order to provide a more complete solution for printers in certain markets, whilst continuing its primary business model of selling printheads to OEMs and UDIs. The additional capabilities required to achieve this will be added through either partnership, development of existing capabilities or acquisition. The acquisition of FFEI allows Xaar to widen the product portfolio on offer to further engage UDIs, and will provide additional opportunities for vertical integration.

Operational leverage

The efforts made by the Printhead business to focus on and reduce its cost base, to drive improved profitability and scalability, are reflected in improved gross margins achieved for H1 2021 of 35%, up from 23% in H1 2020 (and 32% in H2 2020) for continuing operations. This has been realised through increased revenues through 2020 and in H1 2021, and increased factory throughput, allowing us to leverage the high operational gearing in the factory and wider business. The operational gearing and the absorption of operating costs into inventory have seen the Printhead business unit adjusted EBITDA improve from a £0.1 million loss in H1 2020 to a £0.8 million profit in H1 2021, despite cost increases on certain components in short supply.

We are pleased with the progress being made in 2021 following the implementation of efficiency programmes across operations and IT, two areas in which we have strengthened the senior leadership team.

Beyond the factory we continue to review our cost base, and in June 2021 we relocated the Xaar corporate offices from the Cambridge Science Park to the nearby Cambridge Research Park, which will generate savings of £0.7 million per annum from the start of the second half of 2021. The new global headquarters houses Xaar's finance, HR, legal and marketing functions, as well as a new purpose-built R&D laboratory. Specifically configured to enhance the working environment for the team, the new offices also embrace Xaar's commitment to flexible working for employees. The offices also provide a significantly reduced carbon footprint for Xaar as we focus on sustainability objectives across the business.

EPS

Our engineering teams at EPS, Xaar's Product Print Systems business, have continued to work on delivering standardised modular systems, however delays in the execution of the modular strategy led to a change in leadership of the business during H1 2021. This new leadership has identified key areas where significant improvements were required to address operational deficiencies, cut project overruns and shorten lead times. As a consequence, further restructuring of the business and consolidation of the product range has taken place.

Revenues achieved in H1 2021 for EPS were in line with management expectations, being below those achieved in H1 2020. Few interruptions to the EPS manufacturing operations have been experienced as a result of the COVID-19 pandemic. EPS has experienced increasing lead times for certain key system components, which is a risk we continue to manage. As an OEM and supplier to end users, the EPS sales from Pad Printing machines and consumables were affected throughout the second half of 2020 and into 2021, as end user markets continued to be impacted by the pandemic. Underlying profitability of the business is strong, and with a healthy pipeline we see good growth potential as COVID-19 eases in the US.

Whilst the underlying performance for the EPS business remains on track and continues to be profitable, actions taken to refocus the business on future growth opportunities mean H1 2021 results have been impacted by certain non-cash write down adjustments.

Strategy review (cont.)

These are largely related to inventory we now consider to be slow moving or obsolete inventory, and amount to \$1.4 million (£1.0 million). Further work will continue in 2021 to enable delivery of improved operational processes across the business addressing concerns raised around operational and reporting controls in the 2020 audit. We expect the beneficial impact of these actions to be reflected in the financial performance of the business from H2 2021.

3D

The 3D business unit, with operations in Nottingham, UK, and Copenhagen, Denmark, has continued to experience some delays in the beta programme, testing and commercialisation of the 3D printers in the first half of 2021 as a result of COVID-19 restrictions. The more significant restrictions causing these delays were in Denmark, which limited the number of individuals who were allowed in the Copenhagen facility, restricting testing capacity and the ability to travel and resolve issues face to face with the sub-contract manufacturer.

Negotiations to divest Xaar's interest in Xaar 3D are at an advanced stage, and although have taken longer than expected, we believe we are close to conclusion. In line with this intended divestment, Xaar 3D continues to be classified as a discontinued operation held for sale. The terms of the final agreement will be subject to Xaar shareholder approval. The sale of the remaining stake in Xaar 3D would provide the business with the best opportunity to complete the commercialisation of the HSS product range in the shortest time. Additionally, any immediate divestment of Xaar 3D would lead to an immediate injection of cash into Xaar, allowing the ongoing business to fully focus on its strategy.

Operating sustainably

Xaar strongly believes that operating responsibly is integral to business success. We uphold the highest of standards across our business and comply with all relevant regulations in the territories in which we operate whilst enhancing the working environment for our employees and minimising the environmental impact of our products and operations. During the reporting year, Xaar has established an ESG Committee and a Sustainability Team which is comprised of colleagues from across our business operations, chaired by the Head of Sustainability; each bringing a different skill set and perspective to support our sustainability journey.

Backed by full Board support, sponsored by Alison Littley, Senior Independent Director, this group will initially focus its efforts on defining and developing our overarching sustainability ambitions and ESG strategy, with its first objective to establish its Sustainability Roadmap to 2030.

Once in place and agreed by all stakeholders by the end of 2021, this Sustainability Roadmap will be a principal driver for positive change and investment within the business, and we aim to disclose the Sustainability Roadmap in our 2021 Annual Report.

The benefits evident in Xaar's printhead technologies, including delivery of quality, reliability, uniformity, productivity and performance, in turn contribute to a reduction in material and energy wastage. Digital inkjet printing is a far more sustainable option with a smaller carbon footprint overall for users, as it reduces and prevents excessive waste and uses less energy, versus traditional analogue printing techniques, due to the ability to print short runs or print direct-to-shape, and with TF Technology™ in Xaar printheads, print more viscous fluids reducing the need for energy intensive drying processes.

It has been a year since Xaar introduced new packaging across our printhead portfolio, whereby all Xaar's printheads are shipped in fully recyclable and biodegradable cardboard packs. Plastic consumption is expected to reduce by more than our targeted 1.2 tonnes per year reduction in 2021.

Xaar offset all of the UK regulatory Scope 1 and 2 carbon impact that we made and reported in 2020, making Xaar a carbon neutral inkjet manufacturer in 2020, which we expect to continue in future years. We still need to understand the full carbon impact from our operations and are committed to continue reducing this impact on the environment and maintaining our drive to achieve complete carbon neutrality in line with the UK's 2030 goal. Scope 3 emissions across the Xaar value chain are currently under review, with the aim to fully disclose our entire impact in the 2021 Annual Report. The Printhead business moved electricity supply to a green energy supply in 2020, supplementing measures that are already being taken to improve energy efficiency across the business. The Xaar Energy Efficiency Team has continued efforts to drive further initiatives to minimise energy usage across the Printhead business.

In support of our local community, we started a programme of work to establish apprenticeship and graduate schemes which we are in the process of rolling out over 2021 and 2022. This is aligned with our sponsorship of local charities and organisations where, amongst other things, we continue to drive interest in STEM subjects among school students, are sponsoring Cambridgeshire Live Environmental Hero Awards 2021 and are hosting the closing event for Cows around Cambridge in support of Break. In 2021, Xaar launched its Volunteering Policy aimed at promoting volunteering across the organisation, and we are working with local agencies to identify environmental projects that employees can get involved in.

Outlook

Whilst the COVID-19 pandemic continues to cause business disruption, the Group is concentrated on securing continuity of supply of components to eliminate any interruption to the supply of printheads in 2022. The ongoing pandemic makes it difficult to provide reliable guidance on the outlook for the remainder of 2021 and beyond, however the short-term outlook remains positive with a healthy order book across the business. The success we have had in the first half of 2021, and the strength of the Group's balance sheet and cash position, means the business is well-positioned to withstand further volatility caused by the pandemic. We remain confident our full-year 2021 results will be in line with expectations.

The acquisition in July 2021 of FFEI, a leading integrator and manufacturer of industrial digital inkjet systems and digital life science technology, strengthens Xaar's capabilities and skills and will accelerate Xaar's existing growth strategy. We continue to focus on implementing our strategy by laying the foundations to enable future growth, are committed to the delivery of the product roadmap, and remain on-track to return to profitability in the medium-term.



Business performance

Due to the advanced stage negotiations to divest the remaining shares in Xaar 3D, the business was classified as an asset held for sale from 31 December 2020 and the business is no longer classified as a continuing operation. Xaar's continuing operations, therefore, consist of the Printhead and EPS businesses.

Continuing operations

Trading for the six months ended 30 June 2021 has been in line with management's expectations. Revenues for the period (see Table A) were £26.3 million, representing an increase of 11% and 8% relative to H1 2020 (£23.7 million) and H2 2020 (£24.3 million) respectively.

Printhead revenues (see Table B) continue to recover half-on-half, representing an increase of 20% and 9% relative to H1 2020 (£16.8 million) and H2 2020 (£18.5 million) respectively, representing a steady return to growth. Revenue growth has been driven by stronger performances in Asia and EMEA.

The growth in Printhead revenues half-on-half since H1 2020 can be attributed to the Ceramics and Glass sector, with additional growth improvement in the WFG and Labels sector since H1 2020. This is partially offset by the fall in Packaging and Textiles revenues, and a slight decline in Coding & Marking (C&M) and Direct to Shape (DTS) sector revenues, with all other sectors remaining relatively flat over the last three halves.

The strong performances in both Asia and EMEA mainly relates to the Ceramics and Glass sector growing 56% H1 2020 to H1 2021, and 23% H2 2020 to H1 2021. This largely relates to the re-engagement of customers who have started to develop or manufacture new machines using the Xaar 2001+ and Xaar 2002 products, coupled with the launch of the Xaar Nitrox printhead in April 2021. We have significant increases in the number of new machines specifying our printheads.

WFG and Labels revenue was up 21% at £3.5 million compared to H1 2020 at £2.9 million, maintaining the improvement experienced in H2 2020 driven by Labels revenues in EMEA.

Packaging and Textiles revenues approximately halved in H1 2021 to £0.2 million, when compared to H1 and H2 2020. Our ability to target this sector effectively is somewhat limited by our current product range. Advancements in the product portfolio driven by the ImagineX platform, such as aqueous compatibility, should make this significant sector more accessible in the future.

Revenues from the EPS (see Table C) business declined in line with management's expectations by £0.8 million H1 2020 to H1 2021, but improved by £0.3 million relative to H2 2020, principally as a result of the timing of COVID-19 related lockdowns and general economic activity in the sector.

Sales of digital inkjet lines improved in H1 2021 from H2 2020 by £0.4 million, having declined H2 2020 from H1 2020 by £0.8 million. Sales of machines accounted for the majority of the improvement on H2 2020, with consumables sales remaining flat.

Sales of analogue pad printing lines declined £0.2 million H1 2020 to H1 2021, but stayed flat on H2 2020, with the slight decline in sales of machines offset by an increase in sales of consumables.

Gross profit for the period has continued to improve over the last three half-year reporting periods, having improved by £1.3 million to £7.6 million when compared to H1 2020 (H1 2020: £6.3 million), and by £0.9 million relative to the second half of 2020 (H2 2020: £6.7 million). Gross margin has also improved overall to 29%, up from 27% for H1 and H2 2020, however, gross margins across the Group have been impacted differently. Gross margins for the Printhead business have improved since H1 2020, increasing from 23% to 35% for H1 2021. This reflects the increased volumes and operational leverage in the business; in addition, the margin in H1 2020 was depressed by a £1.0 million provision for critical spares. Gross margins for the EPS business decreased from 37% for H1 2020 to 8% for H1 2021. Excluding the non-cash adjustments in H1 2021 mainly relating to slow moving and obsolete inventory, the underlying gross margin had reduced to 28%, largely due to the resetting of the modular strategy by new management. Excluding the £1.2 million of adjustments recorded by EPS in H1 2021, the gross profit for the Group would have improved to £8.8 million, with a gross margin of 33%.

R&D spend increased £0.5 million (25%) on H1 2020 (H1 2021: £2.6 million; H1 2020: £2.1 million). This reflects the investment in the ImagineX platform, which will be central to our long-term growth and delivery of the product roadmap.

Sales and marketing spend is in line with H2 2020, which reflects the continuation of travel restrictions into 2021 due to COVID-19, which limited our ability to visit customers and led to the cancellation of the majority of tradeshow.

General and administrative expenses on an adjusted basis increased by £1.1 million compared to H1 2020, from £3.0 million to £4.1 million in H1 2021. Of this increase, £0.6 million related to trading foreign exchange gains in H1 2020, as a result of the exchange rate volatility response to COVID-19. The remainder of the increase largely related to planned investment in key areas of the business and infrastructure, including IT and Finance.

IFRS general and administrative expenses increased from £2.3 million in the first half of 2020 to £4.5 million in the first half of 2021. In addition to the £1.1 million increase on an adjusted basis, the additional increase of £1.1 million is largely driven by a £1.0 million swing in foreign exchange from a gain to a loss in the period on intra-company balances.

Impairment gains on financial assets were £14,000 for H1 2021, compared to £0.4 million for H1 2020 and £0.6 million for H2 2020.

Other operating income in 2020 of £0.8 million related to the PPP loan taken out by the EPS business in the US which has met all qualifying criteria to be forgiven.

Restructuring and investment expenses of £0.9 million in H1 2021 relate to costs associated with re-organisations made in the business, and investment and divestment related transactional costs.

The adjusted EBITDA from continuing operations for the period was a £0.4 million loss (H1 2020: £0.7 million profit). The Printhead business unit adjusted EBITDA improved from a £0.1 million loss in H1 2020 to a £0.8 million profit in H1 2021, with the EPS business declining from a £0.8 million profit in H1 2020 to a £1.2 million loss in H1 2021, as a result of the non-cash adjustments in H1 2021 relating to slow moving and obsolete inventory. Excluding the adjustments recorded by EPS in H1 2021, the adjusted EBITDA for the EPS business would have been a £0.1 million profit, and the adjusted EBITDA for the Group would have improved to a £0.9 million profit.

The adjusted loss before tax for continuing operations in the period was £2.3 million (H1 2020: £1.3 million). Excluding the adjustments recorded by EPS in H1 2021, the loss before tax for continuing operations would have been £1.0 million. The loss before tax under IFRS for continuing operations was £2.1 million (H1 2020: profit of £1.3 million) with a tax credit of £0.2 million (H1 2020: charge of £0.4 million) taking the loss for the period to £1.8 million (H1 2020: profit of £1.0 million).

Discontinued operations

A £3.4 million loss was recorded in relation to discontinued operations for H1 2021 (H1 2020: £6.2 million) with cash outflows for the period of £1.2 million (H1 2020: £6.4 million).

As a result of the intended sale of Xaar 3D, it was classified as a discontinued operation held for sale as at 31 December 2020. The 3D business recorded a loss of £3.5 million (of which £0.2 million is eliminated at Group level, relating to intra-group charges) for H1 2021 (H1 2020: £2.9 million).

Table A – Revenue by region – continuing operations

£m	2021 H1			2020 H2			2020 H1		
	PH	EPS	Total	PH	EPS	Total	PH	EPS	Total
Americas	3.9	6.1	10.0	3.7	5.8	9.5	3.9	6.9	10.8
Asia	5.8	–	5.8	5.1	–	5.1	4.5	–	4.5
EMEA	10.5	–	10.5	9.7	–	9.7	8.4	–	8.4
Total	20.2	6.1	26.3	18.5	5.8	24.3	16.8	6.9	23.7

Table B – Printhead revenue

£m ¹	2021 H1	2020 H2	2020 H1	Var to 2020 H2 (%) ¹	Var to 2020 H1 (%) ¹
Ceramic and Glass	9.5	7.7	6.1	23%	56%
C&M and DTS	5.9	5.5	6.0	6%	(2%)
WFG and Labels	3.5	3.4	2.9	2%	21%
3D and Adv. Manufacturing	1.0	1.1	1.3	(10%)	(22%)
Packaging and Textiles	0.2	0.5	0.4	(62%)	(42%)
Royalties	0.1	0.2	0.2	(16%)	(34%)
Total	20.2	18.5	16.8	9%	20%

¹ Figures and percentages are subject to rounding arising from conversion to £m from actual figures.

Table C – EPS revenue

£m ¹	2021 H1	2020 H2	2020 H1	Var to 2020 H2 (%) ¹	Var to 2020 H1 (%) ¹
Digital Inkjet	3.6	3.2	4.0	13%	(10%)
Pad Printing	2.4	2.4	2.6	(2%)	(10%)
Other	0.1	0.2	0.2	(29%)	(40%)
Total	6.1	5.8	6.9	5%	(11%)

¹ Figures and percentages are subject to rounding arising from conversion to £m from actual figures.

The increased level of losses in the business primarily relate to R&D expenses recognised in the period, which increased by £0.5 million compared to H1 2020.

The Thin Film business, which was classified as discontinued in 2019, recorded a loss of £0.2 million for H1 2021, which primarily relates to inventory commitments.

Balance sheet

The Group retains a strong balance sheet and cash position. Net cash at 30 June 2021, excluding cash from the 3D business (which is classified as an asset held for sale) was £17.1 million. This represents a decline of £1.0 million in net cash for continuing operations since 31 December 2020, which has been primarily driven by planned capital investment, including the relocation of Xaar's Cambridge office which will generate £0.7 million of annual cost

savings going forward. The Group maintains a strong cash focus and disciplined cost controls.

Non-current assets increased slightly from £24.7 million at 31 December 2020, to £25.0 million in the first half of the year. Property, plant and equipment reduced overall by £0.7 million, driven primarily by the depreciation of assets (£1.7 million) and £1.0 million of capital additions. The right of use asset increased overall by £0.8 million since 31 December 2020, principally due to the inception of the new lease for the corporate headquarters in Cambridge.

Current assets, excluding the disposal group assets held for sale, increased overall by £1.8 million. Overall inventory value has increased by £2.7 million, all of which relates to an increase in inventory held by the Printhead business, whilst the inventory value at EPS has remained flat.

Business performance (cont.)

Trade and other receivables reduced by £0.2 million driven by a strong focus on cash collection in the Printhead business.

Current liabilities, excluding liabilities associated with Xaar 3D (held for sale), increased overall by £3.0 million due to an increase in derivative financial liabilities of £1.3 million and an increase in trade and other payables of £4.0 million, relating mainly to improvement of payment terms with suppliers, the timing of the payment run processed over half year, offsetting a reduction in the bonus accrual since year end reflecting the payment made in H1 2021.

The 3D business is classified as held for sale, with £9.0 million of assets and £4.1 million of liabilities associated with the disposal group as at 30 June 2021.

Non-current liabilities, mainly relating to lease liabilities recorded under IFRS 16, increased by £0.7 million in the first half of 2021, due to the relocation of the corporate headquarters Cambridge offices.

Dividend

No interim dividend has been declared for 2021. The Board recognises the importance of regular income to many investors, but believes that it would be inappropriate to reinstate payment of dividends before sustainable profits are restored.



John Mills
Chief Executive
Officer

14 September 2021



Ian Tichias
Chief Financial
Officer

14 September 2021



Governance update

Key of change

⬆ Increase

➤ No change

⬇ Decrease

Risks and uncertainties

A number of potential risks and uncertainties exist which could have a material impact on the Group's performance over the second half of the financial year and could cause actual results to differ materially from expected and historical results.

The Group has processes in place for identifying, evaluating and managing the key risks which could have an impact upon the Group's performance. The key risks and a description of how they relate to the Group's strategy and the approach to managing them are set out on pages 40 to 49 of the Xaar plc Annual Report and Financial Statements 2020, which is available on the Group's website at www.xaar.com.


The Board has reviewed these risks and concluded that they will continue to remain relevant for the second half of the financial year. The potential impact of these risks on our strategy and financial performance, together with details of our specific mitigation actions, are set out in the Xaar plc Annual Report and Financial Statements 2020, with further detail included in the following table. No new risks have been identified. Where the risk rating assessed by the Group has changed, this is indicated in the following table.

The full list of principal risks relevant as at the half year comprises:

Risk area	Description	Likelihood / magnitude change	Update on actions and mitigation
Market	Competition Failure to achieve a market leading position and then retain that position, in order to maximise returns over the long-term in target applications through early adoption, may result in loss of market share.	Probable / Very High ➤	Continual improvement in approach to marketing of new product launches.
	Failure to identify market requirements Failure to successfully develop products with the characteristics that meet market requirements within the necessary timescale could impact on long-term revenue and profitability.	Possible / Very High ➤	Continued success in the approach to market, working closely with OEMs to develop new products to meet market requirements.
	Commercialising and maintaining products with cutting edge technology Failure to create value by producing innovative products could lead to unexpected costs and loss of reputation.	Probable / High ➤	As outlined in the strategy review (pages 2 to 4) there is a pipeline of new product development.
	Merger and acquisition opportunities Failure to seek opportunities to expand, to realise expected benefits and synergies, or post acquisition performance of the acquired business not meeting the expected financial performance, could adversely affect the strategic development, future financial results and prospects of the Group. Selling an asset at the wrong time or at the wrong value, or poor execution of the separation, also carries a risk to financial performance and business operations.	Possible / Very High ⬆ (2020 Annual Report: Possible / Medium)	Xaar will continue to review opportunities to invest in capability and capacity to accelerate our strategy and future growth. Following the acquisition of FFEL on 11 July 2021, business integration is in progress. External advisors were engaged to assist with the transaction and complete financial and legal due diligence. A robust process has been undertaken in relation to the planned divestment of the Xaar 3D investment.
	Coronavirus (COVID-19) – External Failure to track and respond to the potential global impact and external risks arising from the pandemic on Xaar and its supply chain could have an adverse impact on production and customer delivery.	Certain / High ➤	As outlined in the strategy review (pages 2 to 4), proactive measures are being implemented to mitigate the impact from COVID-19 related supply constraints.





Governance update (cont.)

Risk area	Description	Likelihood / magnitude change	Update on actions and mitigation
Operational	Organisational capability Not retaining or attracting the right people in the right roles could result in a failure to meet specific business needs and a loss of expertise and skills required to deliver the business strategy.	Possible / Medium >	A number of senior management appointments have been made in the first half of 2021 to drive the delivery of the strategy across the business.
	Coronavirus (COVID-19) – Internal / Operations Failure to track and respond to the potential local impact and response to the pandemic could lead to a reduction in operational capacity.	Certain / Medium >	As government enforced restrictions have eased, Xaar locations have maintained COVID-19 secure working practices exceeding government guidance, and continue to assess the risk and update practices on an ongoing basis.
	Brexit Risk of barriers to free trade and free movement of people could adversely impact revenues and the recruitment or retention of skills.	Possible / Low < (2020 Annual Report: Certain / Low)	Brexit update provided in the 'Notes to the interim financial information', note 1.
	Manufacturing facility The loss of the manufacturing facilities or their ability to fulfil production demands could result in operational and supply chain concerns for the business, and the profitability of the Group.	Possible / Very High < (2020 Annual Report: Unlikely / Very High)	Focused on monitoring and securing continuity of supply of components necessary to maintain production and the supply of printheads into 2022.
	Partnerships Failure to work with the right companies, at the right time on the right terms to deliver long-term value, could adversely affect the delivery of the business strategy and the results of operations.	Probable / Medium >	Work continues on developing close working relationships with OEMs for printheads and Stratasys for the launch of the 3D printer product.
IT	IT systems & information failures Failure of our IT infrastructure or key IT systems, and failure to build resilience at the time of investing in and implementing new IT infrastructure or IT systems, could cause business disruption and the inability to operate effectively.	Probable / Medium >	Review and optimisation of business processes combined with IT systems alignment, and investment in IT infrastructure and systems is ongoing.
	IT transformation Failure to achieve our IT transformation objectives due to poor prioritisation, ineffective change management and a failure to understand and deliver the IT infrastructure, IT systems, and business process changes required could cause a lack of alignment between processes and systems, as well as cause an inability to progress sufficiently quickly to meet business demands.	Probable / High >	The IT transformation programme is underway. There is improved IT governance and discipline within the business on prioritising the projects that deliver the strategy.
	Cyber threat and information security Loss of systems or confidential data due to a malicious cyber-attack, leading to disruption to business operations and loss of data.	Possible / Medium < (2020 Annual Report: Possible / High)	IT security has been strengthened through the introduction of new measures, protecting access to the Xaar network and systems. Improved data recovery infrastructure has been implemented.

Key of change
 Increase

 No change

 Decrease

Risk area	Description	Likelihood / magnitude change	Update on actions and mitigation
Financial	Ability to access sufficient capital Inability to access sufficient capital could restrict growth opportunities, meeting product demand, and bringing new products to market.	Probable / High 	Xaar has a sufficient cash position to enable continued funding of product development in support of the growth opportunity.
	Customer credit exposure Customer debt recoverability issues or extended beyond considered normal terms could lead to adverse impacts on the working capital of the Group.	Probable / Medium 	Continued focus on cash collection. Ongoing credit risk monitoring, pro-active response to changes in credit insurance/exposure.
	Inventory obsolescence Holding excess inventory levels when compared to demand leads to increased risk of obsolescence and write-off before consumption, and working capital restrictions.	Certain / Medium  (2020 Annual Report: Unlikely / Medium)	Inventory levels are reviewed against forecasted demand levels. Obsolete or slow moving inventory items have been written down in H1 2021 at EPS. Operational process improvements at EPS are underway.
	Volatility in exchange rates Significant adverse movements in currencies, due to global economic events which cause a foreign exchange loss, would reduce the profitability of the Group.	Possible / Low 	Ongoing review to mitigate impact of exposure through USD/EUR movements.

Internal control

As disclosed in the Xaar plc Annual Report and Financial Statements 2020, significant deficiencies in internal control were identified in the EPS subsidiary during the external audit process for the year ended 31 December 2020, in respect to the financial statement close process and management controls. An action plan was established and presented to the Board and Audit Committee, for implementation in 2021.

The significant deficiencies in internal control identified in the EPS subsidiary were in respect of the adequacy of controls in the financial reporting close process, controls over revenue recognition, and controls over inventory management and valuation.

The action plan covered the actions required to remediate the internal management and reporting controls, and remediate the identified deficiencies. The action plan was initiated in H1 2021 and is ongoing, as further work continues, to enable delivery of improved operational processes across the business, addressing the concerns raised during the external audit. The Board and the Audit Committee are being kept up to date with the progress made against the action plan, and management will present the improved controls to the Audit Committee for evaluation in 2021.

Directors' responsibilities statement

We confirm that to the best of our knowledge:

- The condensed set of financial statements has been prepared in accordance with International Accounting Standard 34 – Interim Financial Reporting as adopted by the UK
- The interim management report includes a fair review of the information required by:
 - DTR 4.2.7R of the Disclosure Guidance and Transparency Rules, being an indication of important events that have occurred during the first six months of the financial year and their impact on the condensed set of financial statements; and a description of the principal risks and uncertainties for the remaining six months of the year; and
 - DTR 4.2.8R of the Disclosure Guidance and Transparency Rules, being related party transactions that have taken place in the first six months of the current financial year and that have materially affected the financial position or performance of the entity during that period; and any changes in the related party transactions described in the last Annual Report that could do so.

By Order of the Board



John Mills
Chief Executive Officer

14 September 2021

Condensed consolidated income statement for the six months ended 30 June 2021

	Notes	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Revenue	3	26,302	23,672	47,984
Cost of sales		(18,725)	(17,335)	(34,974)
Gross profit		7,577	6,337	13,010
Research and development expenses		(2,619)	(2,093)	(4,535)
Research and development expenditure credit		200	176	142
Sales and marketing expenses		(3,106)	(2,851)	(5,970)
General and administration expenses		(4,507)	(2,340)	(8,022)
Impairment reversal of financial assets		14	388	946
Restructuring and investment expenses	2	(873)	(170)	(754)
Gain on derivative financial liabilities	9	1,269	1,094	77
Other operating income	2	-	819	819
Operating (loss)/profit		(2,045)	1,360	(4,287)
Investment income		2	24	47
Finance costs for leases		(45)	(51)	(82)
(Loss)/profit before tax		(2,088)	1,333	(4,322)
Income tax credit/(expense)	5	249	(366)	(52)
(Loss)/profit for the period from continuing operations		(1,839)	967	(4,374)
Loss from discontinued operations after tax	10	(3,419)	(6,154)	(10,295)
Loss for the period		(5,258)	(5,187)	(14,669)
Attributable to:				
Owners of the Company		(3,699)	(3,887)	(11,685)
Non-controlling interest		(1,559)	(1,300)	(2,984)
Loss for the period		(5,258)	(5,187)	(14,669)
Earnings/(loss) per share – Total				
Basic	6	(4.8p)	(5.0p)	(15.2p)
Diluted	6	(4.8p)	(5.0p)	(15.2p)
Earnings/(loss) per share – Continuing operations				
Basic	6	(2.3p)	1.3p	(5.7p)
Diluted	6	(2.3p)	1.3p	(5.7p)

No dividends were paid in the current or prior period.

Condensed consolidated statement of comprehensive income for the six months ended 30 June 2021

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Loss for the period attributable to shareholders	(5,258)	(5,187)	(14,669)
Exchange differences on translation of net investment	(22)	(22)	240
Tax benefit on share option and restructuring gains	-	-	(5)
Other comprehensive (loss)/income for the period	(22)	(22)	235
Total comprehensive loss for the period	(5,280)	(5,209)	(14,434)
Total comprehensive loss attributable to:			
Owners of the Company	(3,717)	(3,913)	(11,466)
Non-controlling interest	(1,563)	(1,296)	(2,968)
	(5,280)	(5,209)	(14,434)

Condensed consolidated statement of financial position as at 30 June 2021

	Notes	As at 30 June 2021 (unaudited) £'000	As at 31 December 2020 (audited) £'000
Non-current assets			
Goodwill		5,078	5,152
Other intangible assets		109	207
Property, plant and equipment		16,441	17,147
Right of use asset		2,884	2,078
Deferred tax asset		457	139
		24,969	24,723
Current assets			
Inventories		13,057	10,355
Trade and other receivables		9,936	9,751
Current tax asset		574	425
Treasury deposits		–	161
Cash and cash equivalents		17,079	17,956
Derivative financial instruments		–	160
Assets held for sale		–	43
		40,646	38,851
Disposal group assets held for sale	10	8,986	9,968
		49,632	48,819
Total assets		74,601	73,542
Current liabilities			
Trade and other payables		(13,914)	(9,940)
Provisions		(433)	(357)
Derivative financial instruments	9	(1,650)	(2,919)
Lease liabilities		(1,261)	(1,064)
		(17,258)	(14,280)
Liabilities associated with the disposal group	10	(4,082)	(1,589)
		(21,340)	(15,869)
Net current assets		28,292	32,950
Non-current liabilities			
Provisions		(250)	–
Lease liabilities		(1,996)	(1,515)
Total non-current liabilities		(2,246)	(1,515)
Total liabilities		(23,586)	(17,384)
Net assets		51,015	56,158
Equity			
Share capital		7,834	7,833
Share premium		29,328	29,328
Own shares		(1,929)	(1,957)
Translation reserves		800	818
Other reserves		21,301	21,167
Retained earnings		(8,527)	(4,802)
Equity attributable to owners of the Company		48,807	52,387
Non-controlling interest		2,208	3,771
Total equity		51,015	56,158

Condensed consolidated statement of changes in equity for the six months ended 30 June 2021

	Share capital £'000	Share premium £'000	Own shares £'000	Other reserves £'000	Translation reserve £'000	Retained earnings £'000	Total £'000	Non-controlling interest £'000	Total equity £'000
Balances at 1 January 2021	7,833	29,328	(1,957)	21,167	818	(4,802)	52,387	3,771	56,158
Loss for the period	-	-	-	-	-	(3,699)	(3,699)	(1,559)	(5,258)
Exchange differences on retranslation of net investment	-	-	-	-	(18)	-	(18)	(4)	(22)
Total comprehensive loss for the period	-	-	-	-	(18)	(3,699)	(3,717)	(1,563)	(5,280)
Issue of share capital	1	-	-	-	-	-	1	-	1
Own shares sold in the period	-	-	28	-	-	(26)	2	-	2
Credit to equity for equity-settled share-based payments	-	-	-	134	-	-	134	-	134
Balance at 30 June 2021	7,834	29,328	(1,929)	21,301	800	(8,527)	48,807	2,208	51,015
Balances at 1 January 2020, as reported	7,833	29,328	(2,676)	20,921	660	7,855	63,921	6,739	70,660
Correction of error *	-	-	-	-	(66)	(257)	(323)	-	(323)
Balances at 1 January 2020, as restated	7,833	29,328	(2,676)	20,921	594	7,598	63,598	6,739	70,337
Loss for the period, as restated (see note 11)	-	-	-	-	-	(3,887)	(3,887)	(1,300)	(5,187)
Exchange differences on retranslation of net investment	-	-	-	-	(26)	-	(26)	4	(22)
Total comprehensive loss for the period	-	-	-	-	(26)	(3,887)	(3,913)	(1,296)	(5,209)
Own shares sold in the period	-	-	647	-	-	(645)	2	-	2
Credit to equity for equity-settled share-based payments	-	-	-	103	-	-	103	-	103
Balance at 30 June 2020	7,833	29,328	(2,029)	21,024	568	3,066	59,790	5,443	65,233

* The nature of the prior period correction of error is described in note 36 of the Group's Annual Report and Financial Statements 2020.

Condensed consolidated cash flow statement for the six months ended 30 June 2021

	Notes	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited) £'000	Twelve months ended 31 December 2020 (audited) £'000
Net cash used in operating activities	8	(659)	(743)	(2,807)
Investing activities				
Investment income		11	45	64
Movement in treasury deposits		161	(503)	361
Purchase of derivative financial instruments		-	-	(130)
Purchases of property, plant and equipment		(1,221)	(606)	(1,098)
Proceeds on disposal of property, plant and equipment		-	136	167
Expenditure on software		(10)	-	-
Net cash used in investing activities		(1,059)	(928)	(636)
Financing activities				
Proceeds from sale of own shares		6	-	-
Payment of lease liabilities and related interest		(348)	(720)	(1,224)
Net cash used in financing activities		(342)	(720)	(1,224)
Net decrease in cash and cash equivalents		(2,060)	(2,391)	(4,667)
Effect of foreign exchange rate changes		(155)	425	(57)
Cash and cash equivalents at beginning of period		20,076	24,800	24,800
Cash and cash equivalents at end of period		17,861	22,834	20,076
Cash and cash equivalents attributable to assets held for sale		782	5,889	2,120
Cash and cash equivalents		17,079	16,945	17,956

Cash and cash equivalents (which are presented as a single class of asset on the face of the condensed consolidated statement of financial position) comprise cash at bank and other short-term highly liquid investments with a maturity of three months or less. The carrying amount of these assets is approximately equal to their fair value.

Notes to the interim financial information for the six months ended 30 June 2021

1. Basis of preparation and accounting policies

Basis of preparation

These interim financial statements have been prepared in accordance with the accounting policies set out in the Group's Annual Report and Financial Statements 2020 on pages 115 to 125 [available at www.xaar.com] and were approved by the Board of Directors on 14 September 2021. The interim financial statements for the six months ended 30 June 2021 have been prepared in accordance with IAS 34 "Interim Financial Reporting" as adopted by the United Kingdom. The interim financial statements do not include all the information and disclosures in the annual financial statements and should be read in conjunction with the Group's annual financial statements as at 31 December 2020.

The interim financial statements have not been audited or reviewed by the Company's auditor. They do not constitute statutory financial statements as defined in section 434 of the Companies Act 2006. The comparative figures for the financial year ended 31 December 2020 are derived from the Group's statutory accounts for that financial year. Those accounts have been reported on by the Company's auditor and delivered to the Registrar of Companies. The report of the auditor was (i) unqualified, (ii) did not include a reference to any matters to which the auditor drew attention by way of emphasis without qualifying their report, and (iii) did not contain a statement under section 498(2) or 498(3) of the Companies Act 2006.

Judgements and estimates

In preparing these interim financial statements, the significant judgements made by management in applying the Group's accounting policies and the key sources of estimation uncertainty were the same as those that applied to the consolidated financial statements for the year ended 31 December 2020.

Significant accounting policies

The accounting policies adopted in the preparation of the interim condensed consolidated financial statements are consistent with those followed in the preparation of the Group's annual financial statements for the year ended 31 December 2020.

Government and EU grants

Government and EU grants are not recognised until there is reasonable assurance that the Group will comply with the conditions attached to them and that the grant will be received. Government and EU grants relating to research and development are treated as income over the periods necessary to match them with the related costs. The treatment is consistent with IAS 20 Accounting for Government Grants and Disclosure of Government Assistance.

Principal risks and uncertainties

The Board has overall responsibility for the establishment and oversight of the Group's risk management framework. The Board has an established, structured approach to risk management, which includes continuously assessing and monitoring the key risks and uncertainties of the business. An outline of the key risks and uncertainties faced by the Group is detailed on pages 40 to 49 of the Xaar plc Annual Report and Financial Statements 2020, which is available on the Group's website at www.xaar.com.

The Board has reviewed these risks and concluded that they will continue to remain relevant for the second half of the financial year. The potential impact of these risks on our strategy and financial performance, together with details of our specific mitigation actions, are set out in the Xaar plc Annual Report and Financial Statements 2020, and on pages 9 to 11 of the Xaar plc Interim Report 2021. No new risks have been identified.

Brexit and other trade barriers

The Group operates globally and the impact following the transition phase of Brexit continues to be monitored. We have taken action where necessary in moving to freight carriers to ensure smooth customs clearance and to date have experienced little impact. We will continue to evaluate all transport methods and ensure we meet any increased burden of audit trail compliance. As for many businesses, a greater challenge is potentially that of EU workers and migration. As a result of Brexit, the Group is exposed to potential currency fluctuations.

Brexit and trade barriers continue to be an integral part of the Group's ongoing risk management and review process, for which solutions to address the risks identified are explored and implemented. We continue to believe that the direct consequences of Brexit will have no material impact on the Group.

Going concern

The Board continuously reviews the performance of the business and its future prospects, together with other factors likely to affect its future development, performance and position.

To date the impact of COVID-19 on the Group's trading has been minimal, however we are now seeing some COVID-19 related supply constraints, for which actions are being taken to mitigate their impact and therefore the Board continues to be optimistic on the future trading environment. The Group continues to enjoy a healthy cash position and is well positioned to cope with the current situation. The Board remains confident in the long-term future prospects for the Group and its ability to continue as a going concern for the foreseeable future.

The Group's day to day working capital requirements are expected to be met through the current cash and cash equivalents and the Group was debt free as at 30 June 2021. The Board has a reasonable expectation that the Group has adequate resources to continue in operational existence for the foreseeable future, based on the Group's forecasts and projections for the period to 31 December 2022, taking account of reasonably possible changes in trading performance. For this reason, the Group continues to adopt the going concern basis in preparing the interim financial statements.

2. Reconciliation of adjusted financial measures

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
(Loss)/profit before tax from continuing operations	(2,088)	1,333	(4,322)
Share-based payment charges	155	87	348
Exchange differences relating to intra-group transactions	267	(782)	347
Gain on derivative financial liabilities	(1,269)	(1,094)	(77)
Restructuring and investment expenses	873	170	754
Other operating income	-	(819)	(819)
Research and development expenditure credit	(200)	(176)	(142)
Adjusted loss before tax from continuing operations	(2,262)	(1,281)	(3,911)
Interest income	(2)	(24)	(47)
Interest charge arising from IFRS 16	45	51	82
Depreciation and impairment of property, plant and equipment	1,792	1,866	3,856
Amortisation of intangible assets	66	48	82
Adjusted EBITDA from continuing operations	(361)	660	62

EBITDA is calculated as statutory operating profit before depreciation, amortisation and impairment of property, plant and equipment, intangible assets and goodwill. Adjusted EBITDA is calculated as EBITDA excluding other adjusting items as defined.

Share-based payment charges include the IFRS 2 charge for the period of £134,000 (H1 2020: £103,000) and the expense relating to National Insurance on the outstanding potential share option gains of £21,000 (H1 2020: credit of £16,000). These costs are included in the general and administrative expenses in the consolidated income statement.

Exchange differences relating to the United States, Danish and Swedish operations represent exchange gains or losses recorded in the consolidated income statement as a result of operating in the United States, Denmark and Sweden. These costs are included in general and administrative expenses in the consolidated income statement.

Gain on derivative financial instruments relate to gains and losses made on written call option contracts. These amounts are included in the consolidated income statement under gain on derivative financial liabilities.

Restructuring and investment expenses in the first half of 2021 of £873,000 mainly relate to costs incurred and provisions made in relation to investment related expenditure and re-organisation costs (H1 2020: re-organisation costs of £170,000). Cash expenditure arising from restructuring costs related to restructuring and investment expenses in the first half of 2021 was £396,000 (H1 2020: £323,000).

The research and development expenditure credit relates to the corporation tax relief receivable relating to qualifying research and development expenditure. This item is shown on the face of the consolidated income statement. No cash was received in relation to RDEC in the first half of 2021 (H1 2020: £929,000).

Other operating income of £nil (2020: £819,000) relates to a forgivable \$1.0 million loan between Engineered Print Solutions (EPS) and TD Bank and is backed by the US Federal Government (Small Business Administration); further details are provided under note 4. The loan was taken out as part of the government backed scheme. The Company considers that it has met the requirements of the waiver, and therefore expects it to be waived; the loan has therefore been treated as a government grant under IAS 20. A cash receipt of the same amount was received.

Notes to the interim financial information (cont.) for the six months ended 30 June 2021

2. Reconciliation of adjusted financial measures (cont.)

	Six months ended 30 June 2021 (unaudited) Pence per share	Six months ended 30 June 2020 (unaudited, restated) Pence per share	Twelve months ended 31 December 2020 (audited) Pence per share
Basic and diluted (loss)/earnings per share from continuing operations (note 6)	(2.3p)	1.3p	(5.7p)
Share-based payment charges	0.2p	0.1p	0.5p
Exchange differences relating to the intra-group transactions	0.3p	(1.0p)	0.5p
Gain on derivative financial liability	(1.6p)	(1.4p)	(0.1p)
Restructuring and investment expenses	1.1p	0.2p	1.0p
Other operating income	-	(1.1p)	(1.1p)
Tax effect of adjusting items	(0.1p)	0.2p	(0.3p)
Adjusted basic and diluted loss per share from continuing operations	(2.3p)	(1.7p)	(5.2p)

This reconciliation is provided to align with how the Board measures and monitors the business at an underlying level.

3. Business segments

For management reporting purposes, the Group's operations are analysed according to the three operating segments of 'Printhead', 'Product Print Systems' and '3D'. These three operating segments are the basis on which the Group reports its primary segment information and on which decisions are made by the Group's Chief Executive Officer and Board of Directors, and resources allocated. The Group's chief operating decision maker is the Chief Executive Officer.

The Xaar 3D business, which we expect to divest in the second half of 2021, has been reclassified as held for sale and discontinued operations, hence the 3D segment is presented separately in note 10 and the 2020 comparatives have been restated accordingly.

Segment information for continuing operations is presented below:

Continuing operations	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Revenue			
Printhead	20,183	16,794	35,283
Product Print Systems	6,119	6,878	12,701
Total revenue	26,302	23,672	47,984

Result – Continuing operations	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Printhead	(364)	82	(4,437)
Product Print Systems	(1,526)	1,365	498
Total segment result	(1,890)	1,447	(3,939)
Net unallocated corporate expenses	(155)	(87)	(348)
Operating (loss)/profit	(2,045)	1,360	(4,287)
Investment income	2	24	47
Finance costs	(45)	(51)	(82)
(Loss)/profit before tax	(2,088)	1,333	(4,322)
Tax	249	(366)	(52)
(Loss)/profit for the period	(1,839)	967	(4,374)

Unallocated corporate expense relates to administrative activities which cannot be directly attributed to any of the principal product groups, consisting of share-based payment charges.

4. Government grants

The accounting policy in relation to the adopted and applicable treatment of government grants is disclosed in note 1 to the Interim Report.

Xaar plc and its UK based subsidiaries have not taken part in any of the government support schemes arising from the COVID-19 crisis.

- No employees have been placed on furlough and no claims made via the Coronavirus Job Retention Scheme ('CJRS')
- No submissions have been made for financial support via either the Coronavirus Business Interruption Loan Scheme ('CBILS') or Bounce Back Loan Scheme ('BBLs')
- The UK entities operate primarily under a VAT repayment position due to the significant level of export sales, so have not utilised the government scheme in deferring VAT payments
- Xaar 3D ApS based in Denmark has also not taken part in any government support measures in response to COVID-19
- No submission has been made for salary compensation, which could arise due to employees being retained that could otherwise have been released. No employees have left the business
- Xaar 3D ApS operates in a repayment position for Danish VAT, and like the UK has not utilised the extension available for payments.

A Xaar group company based in the USA, Engineered Print Solutions (EPS), has taken part in the US Government Loan scheme which has provided a \$1.0 million loan (£819,000) in 2020, which under certain provisions linked to maintaining employment and avoiding redundancy can be waived. The company considers that it has met the requirements of the waiver, and therefore expects it to be waived, the loan has therefore been treated as a government grant. The Group has presented this amount as exceptional income in the consolidated income statement. Government support grants are recognised in the consolidated income statement on a systematic basis over the periods in which the related revenue or expense for which the grants are intended to compensate. Further details are provided under note 2.

5. Income tax

The major components of income tax (credit)/expense in the income statement are as follows:

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Current income tax			
Income tax charge	139	265	325
Deferred income tax			
Relating to origination and reversal of temporary differences	(299)	173	(83)
Income tax (credit)/charge	(160)	438	242
Income tax (credit)/charge reported in the statement of profit and loss	(249)	366	52
Income tax charge attributable to discontinued operations	89	72	190
Income tax (credit)/charge	(160)	438	242

Whilst the Board believes in the long-term potential and profitability of the Printhead business unit, the forecast losses for the current year mean that the tax losses will not be utilised in the short term. Therefore, no deferred tax asset has been recognised relating to losses for 2021.

In the reporting periods shown, the Group is claiming R&D expenditure credit (RDEC), where the R&D credit receivable is included in operating loss.

Notes to the interim financial information (cont.) for the six months ended 30 June 2021

6. Earnings per ordinary share – basic and diluted

The calculation of basic and diluted earnings per share is based upon the following data:

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Earnings			
Earnings for the purposes of earnings per share being net loss attributable to equity holders of the parent	(3,699)	(3,887)	(11,685)
from Continuing operations	(1,750)	968	(4,374)
from Discontinued operations	(1,949)	(4,855)	(7,311)
Number of shares			
Weighted average number of ordinary shares for the purposes of basic earnings per share	77,514,560	77,259,359	77,103,593
Effect of dilutive potential ordinary shares:			
Share options	–	–	–
Weighted average number of ordinary shares for the purposes of diluted earnings per share	77,514,560	77,259,359	77,103,593
Loss per share – Total	30 June 2021	30 June 2020	31 Dec 2020
Basic	(4.8p)	(5.0p)	(15.2p)
Diluted	(4.8p)	(5.0p)	(15.2p)
(Loss)/earnings per share – Continuing operations			
Basic	(2.3p)	1.3p	(5.7p)
Diluted	(2.3p)	1.3p	(5.7p)

7. Share capital

During the six months ended 30 June 2021 a total of 9,138 new ordinary shares of 10 pence each were issued under the Company's LTIP schemes with a £nil exercise price.

8. Notes to the cash flow statement

	Six months ended 30 June 2020 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
(Loss)/profit before tax from continuing operations	(2,088)	1,333	(4,322)
Loss before tax from discontinued operations	(3,330)	(6,082)	(10,105)
Total loss before tax	(5,418)	(4,749)	(14,427)
Adjustments for:			
Share-based payments	135	87	353
Depreciation of property, plant and equipment	1,864	2,148	4,223
Depreciation of right of use assets	425	598	1,236
Amortisation of intangible assets	328	334	685
Impairment of assets	–	117	391
Research and development expenditure credit	(305)	(385)	(454)
Investment income	(2)	(45)	(72)
Interest expense – finance cost for leases	50	57	94
Foreign exchange losses/(gains)	289	(1,098)	523
Gain on re-measurement of derivative liability	(1,269)	(1,094)	(77)
Loss on disposal of property, plant and equipment	95	6	99
Other gains and losses	–	–	202
Decrease/(increase) in provisions	92	(1,278)	(2,572)
Operating cash flows before movements in working capital	(3,716)	(5,302)	(9,796)
(Increase) /decrease in inventories	(2,637)	2,558	4,849
(Increase)/decrease in receivables	(882)	1,878	(1,337)
Increase/(decrease) in payables	6,741	(666)	2,011
Cash used in operations	(494)	(1,532)	(4,273)
Income taxes (paid)/received	(165)	789	1,466
Net cash used in operating activities	(659)	(743)	(2,807)

9. Derivative financial instruments

Fair value of the Group's financial assets and financial liabilities that are measured at fair value on a recurring basis:

Some of the Group's financial assets and financial liabilities are measured at fair value at the end of each reporting period. The following table gives information about how the fair values of these financial assets and financial liabilities are determined (in particular, the valuation technique(s) and inputs used).

Financial asset/financial liabilities	Valuation technique(s) and key input(s)	Significant unobservable input(s)	Relationship and sensitivity of unobservable inputs to fair value
Derivative financial instrument (Level 3)	Black-Scholes model. The following variables were taken into consideration: current underlying price of the underlying share, options strike price, time until expiration (expressed as a percent of a year), implied volatility of the underlying share and LIBOR.	Underlying price of the share. Volatility of the underlying share.	10% increase / (decrease) in price would result in a £571,000 increase in the fair value and a £483,000 decrease. 10% increase / (decrease) in volatility would result in £358,000 increase in the fair value and £343,000 decrease.

There were no transfers between Level 1 and 2 during the current or prior year.

Notes to the interim financial information (cont.) for the six months ended 30 June 2021

9. Derivative financial instruments (cont.)

Reconciliation of Level 3 fair value measurements of financial instruments:

The only financial liabilities measured subsequently at fair value on Level 3 fair value measurement represent written call options relating to a business combination. In July 2018 Xaar signed an investment agreement with Stratasys Solutions Limited (Stratasys) which granted Stratasys a 15% share of Xaar 3D Limited (Xaar 3D) and two written call options to acquire a further 10% and 5%. These options gave Stratasys the right, but not the obligation, to acquire GBP denominated shares in Xaar 3D for a fixed price which was denominated, and to be settled, in USD. On 1 January 2019 the fair value of these options was £936,000. On 4 December 2019 Stratasys exercised the first of the two options granting them a further 10% share in Xaar 3D. At the same time Xaar 3D and Stratasys agreed to extinguish the second option, thereby settling both options in the year. On 4 December 2019 Xaar 3D Holdings Limited (Xaar 3D Holdings) sold to Stratasys a 20% share in Xaar 3D. Consequently, Stratasys now owns 45% of Xaar 3D with the remaining 55% owned by Xaar 3D Holdings. As part of the agreement between Xaar 3D Holdings and Stratasys, Xaar 3D Holdings granted Stratasys a written call option to acquire its remaining 55% shareholding in Xaar 3D for a consideration of \$33 million. As with the original option agreement between Xaar 3D and Stratasys the new options are USD denominated giving rise to a new derivative financial liability.

This liability was valued at a fair value of £2,919,000 at 31 December 2020.

A revaluation of the option was undertaken by third party professional advisors as at 30 June 2021; the gain calculated from the revaluation primarily arises from a reduction in the time to maturity, and changes in share valuations, foreign exchange rates and volatility and the reduction in the USD Treasury rate in the period.

	Six months ended 30 June 2021 (unaudited) £'000
Balance at 1 January 2021	2,919
Total gains or losses – in profit or loss	(1,269)
Balance at 30 June 2021	1,620

10. Discontinued operations

The Thin Film business, which was discontinued in 2019, incurred costs in 2020 and 2021 which mainly related to supplier liabilities and inventory for last time buy sales. All liabilities were settled in 2020 and all these inventories have now been sold by 30 June 2021.

As detailed in the strategic and financial update the Xaar 3D business, which we plan to divest in the second half of 2021, has been reclassified as held for sale and a discontinued operation given the disposal has been assessed as highly probable.

The results of Thin Film and 3D related activities for the period are shown below:

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited) £'000	Twelve months ended 31 December 2020 (audited) £'000
Thin Film			
Revenue	334	28	258
Expenses	(485)	(3,286)	(3,922)
Loss before income tax	(151)	(3,258)	(3,664)
Income tax charge	–	(9)	–
Loss after income tax from discontinued operations	(151)	(3,267)	(3,664)
3D			
Revenue	1,472	56	734
Expenses	(4,848)	(2,880)	(7,175)
Loss before income tax	(3,376)	(2,824)	(6,441)
Income tax charge	(89)	(63)	(190)
Loss after income tax from discontinued operations	(3,465)	(2,887)	(6,631)

Out of the £4,848,000 expenses, £197,000 relates to a service charge from the Group undertaking which has to be eliminated in the Group's consolidated income statement.

10. Discontinued operations (cont.)

The net cash flows incurred by Thin Film and 3D are as follows.

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited) £'000	Twelve months ended 31 December 2020 (audited) £'000
Thin Film			
Net cash inflow/(outflow) from operating activities	120	(3,091)	(5,058)
Net cash outflow from investing activities	–	(25)	(25)
Net cash inflow/(outflow) from discontinued operations	120	(3,116)	(5,083)
3D			
Net cash outflow from operating activities	(1,210)	(2,842)	(6,213)
Net cash outflow from investing activities	(41)	(344)	(645)
Net cash outflow from financing activities	(74)	(92)	(160)
Net cash outflow from discontinued operations	(1,325)	(3,278)	(7,018)

The major classes of assets and liabilities of 3D classified as held for sale as at 30 June 2021 are as follows:

	As at 30 June 2021 £'000	As at 31 December 2020 £'000
Assets		
Property, plant and equipment	988	1,041
Intangible assets	4,387	4,649
Deferred tax asset	39	68
Right of use asset	369	440
Inventory	805	919
Debtors	1,425	737
Corporate income tax	191	–
Cash and cash equivalents	782	2,120
Assets held for sale	8,986	9,974
Liabilities		
Creditors	(3,668)	(1,115)
Corporate income tax	–	(6)
Provisions (Warranty)	(27)	(11)
IFRS 16 lease liability	(387)	(463)
Liabilities associated with the assets held for sale	(4,082)	(1,595)
Net assets associated with disposal group	4,904	8,379

	Six months ended 30 June 2021 (unaudited) £'000	Six months ended 30 June 2020 (unaudited, restated) £'000	Twelve months ended 31 December 2020 (audited) £'000
Earnings per share			
Basic, loss for the period from discontinued operations	(2.5p)	(6.3p)	(9.5p)
Diluted, loss for the period from discontinued operations	(2.5p)	(6.3p)	(9.5p)

Potential ordinary shares are treated as dilutive if their conversion to ordinary shares would decrease earnings per share or increase loss per share. Therefore, the diluted earnings per share is not impacted by the effect of dilutive potential ordinary shares.

Notes to the interim financial information (cont.) for the six months ended 30 June 2021

11. Restatement of prior period

The financial statements include a prior period restatement in relation to the 3D business unit as a discontinued operation. As required under IFRS, the financial statements have been restated to present the results from discontinued operations associated with the planned and ongoing sale of the 3D business unit as a single line in the comparative period, which is consistent with the current year presentation (further information and other required disclosures can be found in note 10).

Furthermore, there was a reversal of an adjustment on intercompany sales which had been made in April 2020 in error. The adjustment impacts general and administrative expenses (£365,000) and inventory (£365,000). The following tables summarise the impact of the prior period restatement on the financial statements of the Group for the period ended 30 June 2020:

	Six months ended 30 June 2020			
	As reported £'000	3D £'000	Inventory £'000	Restated £'000
Consolidated income statement				
Revenue	23,728	(56)	–	23,672
Cost of sales	(17,359)	24	–	(17,335)
Gross profit	6,369	(32)	–	6,337
Research and development expenses	(4,230)	2,137	–	(2,093)
Research and development expenditure credit	336	(160)	–	176
Sales and marketing expenses	(2,975)	124	–	(2,851)
General and administrative expenses	(2,745)	770	(365)	(2,340)
Impairment reversal on financial assets	388	–	–	388
Restructuring and investment expenses	(170)	–	–	(170)
Gain on derivative financial liabilities	1,094	–	–	1,094
Other operating income	819	–	–	819
Operating (loss)/profit	(1,114)	2,839	(365)	1,360
Investment income	45	(21)	–	24
Finance costs	(57)	6	–	(51)
(Loss)/profit before tax	(1,126)	2,824	(365)	1,333
Income tax (expense)/credit	(429)	63	–	(366)
(Loss)/profit for the period from continuing operations	(1,555)	2,887	(365)	967
Loss for the period from discontinued operations	(3,267)	(2,887)	–	(6,154)
Loss for the period	(4,822)	–	(365)	(5,187)
Attributable to:				
Owners of the Company	(3,522)	–	(365)	(3,887)
Non-controlling interests	(1,300)	–	–	(1,300)
	(4,822)	–	(365)	(5,187)
Earnings/(loss) per share – Total				
Basic	(4.6p)	–	(0.4p)	(5.0p)
Diluted	(4.6p)	–	(0.4p)	(5.0p)
Earnings/(loss) per share – Continuing operations				
Basic	(0.3p)	–	1.6p	1.3p
Diluted	(0.3p)	–	1.6p	1.3p

11. Restatement of prior period (cont.)

Consolidated statement of comprehensive income	Six months ended 30 June 2020			
	As reported £'000	3D £'000	Inventory £'000	Restated £'000
Loss for the period	(4,822)	–	(365)	(5,187)
Exchange differences on retranslation of net investment	(22)	–	–	(22)
Other comprehensive loss for the period	(22)	–	–	(22)
Total comprehensive loss for the period	(4,844)	–	(365)	(5,209)
Total comprehensive loss attributable to:				
Owners of the Company	(3,548)	–	(365)	(3,913)
Non-controlling interest	(1,296)	–	–	(1,296)
	(4,844)	–	(365)	(5,209)

Consolidated cash flow statement	Six months ended 30 June 2020			
	As reported £'000	3D £'000	Inventory £'000	Restated £'000
Loss before tax from continuing operations	(1,126)	2,824	(365)	1,333
Loss before tax from discontinued operations	(3,258)	(2,824)	–	(6,082)
Decreases in inventories	2,193	–	365	2,558

12. Related party transactions

During the period to 30 June 2021 transactions with related parties who are not members of the Group were entered into. There were both product sales between Xaar and Stratasys, and related party transactions associated with the 'go-to-market' functions where SSYS employees have been seconded to Xaar 3D Limited and the costs recharged:

- Sales between Xaar and Stratasys of £1,448,634 (outstanding at 30 June 2021 £435,851)
- Purchases between Stratasys and Xaar of £3,737 (outstanding at 30 June 2021 £nil)
- Employees seconded to Xaar from Stratasys for £166,305 (accrued at 30 June 2021 £385,506)
- Deposits paid to Xaar from Stratasys of £1,490,246.

There have been no material changes to the related party arrangements as reported in note 34 to the Annual Report and Financial Statements for the year ended 31 December 2020.

Transactions between the Company and its subsidiaries, which are related parties, have been eliminated on consolidation and are not disclosed in this note.

13. Non-adjusting post balance sheet event

On 11 July 2021, Xaar completed the acquisition of print systems and printbar specialist FFEI Limited. The deal will accelerate the Company's existing growth strategy and will enable Xaar to capture additional opportunities in vertically integrated solutions. The initial cash consideration of £3,687,000 was paid on completion, which reflects existing FFEI free cash reserves, with an additional £5,441,000 deferred consideration to be paid out over three years. The Board expects the acquired expertise and resource to be utilised for projects that will drive long-term profitable growth in Xaar's core printhead business.

14. Date of approval of interim financial statements

The interim financial statements cover the period 1 January 2021 to 30 June 2021 and were approved by the Board on 14 September 2021.

Further copies of the interim financial statements are available from the Company's registered office, 3950 Cambridge Research Park, Waterbeach, Cambridge CB25 9PE and can be accessed on the Xaar plc website, www.xaar.com.

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Unsolicited mail:

The Company is obliged by law to make its share register publicly available should a request be received. As a consequence, shareholders may receive unsolicited mail from organisations that use it as a mailing list. Shareholders wishing to limit the amount of such mail should either write to Mailing Preference Service, DMA House, 70 Margaret Street, London W1W 8SS, register online at www.mpsonline.org.uk or call the Mailing Preference Service (MPS) on +44 (0)845 703 4599. MPS is an independent organisation which offers a free service to the public.

Warning to shareholders – boiler room scams

Each year in the UK, £1.2bn is lost to investment fraud, with the average victim losing around £20,000. What is more, it is estimated that only 10% of the people that become victims of investment fraud actually report it.

Investment scams are becoming ever more sophisticated – designed to look like genuine investments, they are increasingly difficult to spot. They are targeted at those most at risk, typically people in retirement who are actively seeking an investment opportunity.

Protect yourself

1. Reject cold calls

If you have been cold called with an offer to buy or sell shares, it is likely to be a high-risk investment or scam. You should treat the call with extreme caution. The safest thing to do is hang up.

If you are offered unsolicited investment advice, discounted shares, a premium price for shares you own, or free company or research reports, you should get the name of the person and organisation contacting you and take these steps before handing over any money.

2. Check the firm on the Financial Services Register at www.fca.org.uk/register

The Financial Services Register is a public record of all the firms and individuals in the financial services industry that are regulated by the FCA.

Use the details on the Financial Services Register to contact the firm.

3. Get impartial advice

Think about getting impartial financial advice before you hand over any money. Seek advice from someone unconnected to the firm that has approached you.

REMEMBER, if it sounds too good to be true, it probably is!

If you use an unauthorised firm to buy or sell shares or other investments, you will not have access to the Financial Ombudsman Service or Financial Services Compensation Scheme if things go wrong.

Report a scam

If you suspect you have been approached by fraudsters please tell the FCA using the share fraud reporting form at www.fca.org.uk/scams, where you can find out more about investment scams.

You can also call the FCA Consumer Helpline on +44 (0)800 111 6768.

If you have lost money to investment fraud, you should report it to Action Fraud on +44 (0)300 123 2040 or online at www.actionfraud.police.uk.

 Find out more at www.fca.org.uk/scamsmart

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