

## Our progress in 2022

**Our business strategy for Xaar plc is to sell more printheads – by extending our range of products to access all digital print markets, and by making it easier for customers to use our printheads by supplying the supporting systems components.**

To ensure we are successful we carefully manage how we invest resources in the business and take a proactive approach to handling external challenges.

### Extending our product range

**In March we launched the Xaar Versatex print engine which provides users who have limited inkjet experience with the ability to fast track the digital inkjet development and integration process, allowing a speedy, cost effective and agile way for manufacturers to explore new potential applications.**

The product is manufactured by FFEI and sold under the Xaar brand. Also launched in March was the Xaar Nitrox Elite GS3 printhead, a small drop variant delivering improved print uniformity and drop placement, creating high-definition image resolutions for smoother skin tones, gradients and colours. This product was produced for OEMs developing print systems for label and graphic applications, and also functional fluid applications, such as PCB printing.

The acquisition of Megnajet, also in March, has given Xaar easy access to a much wider range of fluid management systems which make it easier for OEMs and UDLs to adopt Xaar as a long-term development partner.

During the second half of 2022 customer feedback guided the development of the Roadmap for the Versatex print engine to ensure that we develop and manufacture according to customer requirements. In October we released an updated inkjet development kit which included new components (such as bracketry) which make it easier to use for first time developers.

In November, we launched the most significant new printhead for around 20 years – the Xaar Aquinox. The Aquinox is the latest development from Xaar's ImagineX platform, with revolutionary aQ Power Technology which provides a radically new approach to how water-based fluids are jetted reliably, delivering a truly transformational industrial printhead.

 **See page 10 for a full overview**

With its unique technologies, exceptional print speeds, a high native resolution of 720dpi and compatibility with multiple aqueous fluid types, the Aquinox is a versatile printhead, which is ideal for printing textiles, highly absorbent substrates, or thick film coatings. In addition, thanks to Xaar's Ultra High Viscosity Technology the Aquinox is capable of jetting fluid viscosities of up to 100cP. By enabling a wider colour gamut and fluids with larger particles and more pigment for higher opacity, colours are more vibrant and whites and blacks stronger, ensuring the Xaar Aquinox can bring the latest imaginative designs and finishes to life.

In November, in Shenzhen, China, Xaar opened a state-of-the-art inkjet printing laboratory, comprising the latest printhead test equipment and print process experimentation platforms. Utilising Xaar's printheads, fluids and fluid management systems, the new lab focuses on providing our customers and partners in China, including scientific research institutions, with a variety of services such as sample printing, application development, printhead nozzle status detection and waveform adjustments for new applications. The lab also provides a way to showcase applications and provide technical consultations to drive a greater use of inkjet technologies. Sectors supported include ceramics, glass, PCB, textiles, 3D printing, packaging and labels. A key priority is to provide support to our customers in China, helping them to develop more targeted application solutions and achieve faster innovation cycles, all whilst reducing their R&D investment.

### New markets and customers

The new products launched during 2022 open up a number of new markets for Xaar's printhead business including textile printing and packaging, and have broadened our opportunities in existing markets such as ceramics, where there are new opportunities to explore such as printing glazes.

We have also been working with customers in PCB markets (legend printing in particular, with an opportunity to explore solder mask printing in the future) and our Ultra High Viscosity Technology gives us advantages for 3D printing which are of interest to new OEMs in China.

 **See pages 12 to 15 for more information**

In addition, we have added 91 new customers this year across a broad range of applications, most of whom are in early stages of development, with five launching new machines this year.

Printbars manufactured at FFEI, which use Xaar 2002 printheads, delivered growth in the labels embellishment market in Italy.



## Reshaping R&D

The acquisition of Megnajet (2022) and FFEI (2021) presented an opportunity to review our inkjet R&D capabilities across the Group. With a rich new product and technology roadmap, ensuring that our inkjet Group R&D operates at high output in an efficient and innovative manner is key. The consequent reshaping has delivered a new Group R&D structure of Technology, Print Head and Print Systems. R&D within the FFEI Life Science business unit remains important to us, as does the R&D team within the EPS business unit.



**By enabling the sharing of R&D best practice and technologies across the Group, our team will continue to develop best-in-class printheads and systems to meet our customers' needs for today and tomorrow.**

## Focused investment in the business

**We have invested in our senior leadership team to strengthen our capabilities and drive strategy in Operations, HR and R&D and the team has a proactive focus on delivering on our profit goals which drives decision making across the Group.**

During the year we invested £10.0 million in inventory for the Printhead business to successfully secure materials to meet 2022 production requirements and to increase our holding of finished goods. This enabled us to deliver on customer demands throughout 2022 and also into 2023. We believe we are winning business through a competitive advantage of offering shorter lead times than our competition. We have taken further proactive actions to adapt product designs to accommodate alternative components, increasing our resilience to supply chain constraints.

We have continued to actively manage costs and take appropriate action in response to the significant cost inflation that is prevalent globally. Our electricity unit costs are fixed into H2 2023 and we have invested in raw materials to further mitigate against rising costs. Where possible we have passed cost increases on to our customers through increased sales prices.

Substantial time has been spent planning for the upgrade of our Huntingdon facility which started in January 2023, now reopened and involves a significant modernisation of our manufacturing capabilities. Benefits will be much improved efficiency, yields and reduced product costs in the longer term.

The investment in working capital we have made ensured we are able to meet fully all customer demands whilst the factory was closed for the work to be carried out.

With the launch of our Sustainability Roadmap in March, Xaar has committed to achieving some key sustainability goals which will determine the focus of our investment in the business over the coming years. The Roadmap was covered in the 2021 Annual Report and Accounts, and can be found here:

**ESG**  
**Xaar plc Annual Report and Accounts 2021**



With one pillar of our Roadmap centred on 'Community', we announced our charity partnership with Break in the UK and Manchester Machines in the US. See ESG update on pages 30 to 41. To drive the fundraising for our chosen charities, we put in place a cross functional team of charity champions who have volunteered to create and drive our fundraising activities, working in close partnership with charities. To date, in the last nine months the UK business has raised almost £11,539. The Company will match the funds raised by Xaar UK employees. In the US, Xaar company EPS has donated \$2,500 to a 4-H club that competes in a robotics competition. We provide additional support such as engineering, project reviews and internships for older students. EPS also recently started donating food to the local community food cupboard.

