

Industrial revenue £62.2m <small>(2014: £78.0m)</small>	Packaging revenue £15.5m <small>(2014: £13.4m)</small>	Graphic Arts revenue £9.6m <small>(2014: £11.4m)</small>	Royalties revenue £6.2m <small>(2014: £6.4m)</small>
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Business segments

Industrial

The Industrial segment presently includes ceramic tile decoration, decorative laminate, and advanced/additive manufacturing processes.

Ceramic tile production

Ceramics is a 12.1 billion m² market currently and digital conversion was estimated to be approximately 60-70% at the end of 2015. There are c.10,000 production lines around the world, with almost half of these in China. The creative design is the key feature which sells a tile. Xaar's digital inkjet solution provides an end result which is superior in terms of image quality, at a lower cost, plus with the advantages of flexibility, inventory reduction, and larger tile size capability. Tile manufacturing operates in a harsh industrial environment with high reliability/duty cycle requirements; hence any technology deployed needs to be appropriately robust. The market has been moving to digital inkjet decoration over the last ten years with the pace of change accelerating after the launch of the Xaar 1001 which achieved volume sales from 2009 onwards. Today the Xaar 1002 family of printheads with TF Technology™ continue to deliver both quality and cost advantages over traditional analogue methods within a robust architecture suitable to this harsh environment, giving rise to maximum production uptime.

Decorative laminates

Decorative laminates is estimated to be at 7.8 billion m² of annual output with c.1,600 production lines around the world supplying simulated wood materials to the furniture and building industries. Realistic wood finishes or creative design are the key features which sell the board/plank/finished item and the digital quality that is now being demonstrated with Xaar printheads matches the analogue process, thereby offering the opportunity for more economic short run work to be undertaken whilst reducing inventories and improving time to market. Inkjet is the only digital solution which meets the high reliability and high duty cycle requirements needed within this industry. Digital adoption is still at the very early stages in this application, and the rate of adoption is expected to grow over the next few years.

Advanced/additive manufacturing

Applications include demand for the fine coating, patterning and printing of functional fluids onto numerous substrates in numerous industries. Applications are challenging and push inkjet to its known limits and beyond in fields such as nano imprinting, solar cell manufacturing and display screen production. Xaar has been working with multiple partners in laboratories all over the world exploring what may be possible in the future. Technical progress is promising but the commercial implementation of many of these applications is still believed to be some years into the future.

Packaging

The Packaging segment presently includes coding and marking, primary labels, and Direct-to-Shape printing.

Coding and marking

Coding and marking is an application of printing predominantly monochrome bar codes and logos on outer case/secondary packaging of consumer goods. This is an established and stable business based on bulk piezo technology which competes with alternative technologies including laser and thermal inkjet.

Primary label

Primary label printing is estimated to be a market producing over 57 billion m² annually, with only 9% of this market converted to digital printing to date. The change driver is the delivery of lower cost per copy on run lengths up to 100,000 impressions (versus only 50,000 impressions three years ago). There is a large range of substrates and inks in this application which adds complication to the conversion process.

Direct-to-Shape

Direct-to-Shape is a new application where bottles and containers have the image printed directly onto their surface without the need for a label. The solution is aimed at shortening time to market whilst simultaneously reducing inventory and unit costs versus existing methods. This approach also enables mass customised marketing and event targeting.

Graphic Arts

The Graphic Arts segment presently includes Grand/Wide-format graphics.

Grand/Wide-format graphics

Grand/Wide-format graphics (GWFG) includes both internal and external signage and advertising, including billboards, posters and point of sale advertising. It is the most mature industrial inkjet market, active for over 15 years. Xaar's growth to date has been based on its original set of bulk piezo products, which delivered annual growth from 2003 to 2007. To stimulate further material growth for Xaar in this end market new product developments are required to enhance the portfolio.