LYON, France – September 19, 2019: “The inkjet printhead industry is again moving into a new era of restructuring and huge investments”, announces Jérôme Mouly, Senior Technology & Market Analyst & Business Developer, Inkjet & BioMEMS at Yole Développement (Yole). “The digital (r)evolution is pushing the printing industry into emerging markets. Textile printing, packaging and labels as well as functional printing for printed electronics or displays promise great growth.”

With US$3.3 billion revenue expected in 2024 and a 4.7% CAGR\(^1\) between 2018 and 2024, industrial printing is fuelling printhead market growth. Yole announces an impressive 13.2% CAGR YoY\(^2\) for the same period. Changes in end-user needs, customization, and point-of-need requirements are motivating the industrial market, fostering digital printing with a huge interest in inkjet technology.

Yole Group of Companies proposes a dedicated online event taking place on September 26 at 5:00 PM CET: **Key Events Create New Momentum in the Inkjet Printhead Industry.** Powered by Yole and System Plus Consulting, this webcast will offer a detailed description of the industry, technical challenges and market issues. During one-hour event, both partners propose to get a better understanding of the fast changing inkjet market: [Register today!](#)

During this webcast, analysts will share key results coming from the latest reports, respectively from Yole and System Plus Consulting: [Inkjet Prinheads: Dispensing Technologies & Market Landscape](#) and Inkjet die report portfolio whole the [HP746 HDNA Inkjet Die from HP](#).

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\(^1\) CAGR: Compound Annual Growth Rate  
\(^2\) YoY: Year-Over-Year
The 1st technology & market analysis highlights the main market trends for printhead devices, from consumer to functional printing, and through graphics, industrial, and 3D inkjet printing. Yole’s analysts describe the evolution of the MEMS 3 and conventional printhead markets, and provides 2018 – 2024 penetration rates for the main applications.

System Plus Consulting has long experience of reverse costing studies on printheads, having done more than 15 custom projects. Today its expertise in printhead reverse costings is available with two first, Epson and Xaar products. And the HP’s HDNA Inkjet Die is now part of System Plus Consulting’s portfolio. This reverse costing study provides insights into technological data, manufacturing cost, and selling price of the inkjet MEMS manufactured by both STMicrowirelectronics and HP.

“The HP inkjet die uses CMOS and DMOS transistors for the integrated driver and specially-designed layers for the new generation of high-density heaters”, explains Sylvain Hallereau is in charge of costing analyses for IC and MEMS at System Plus Consulting. And he adds: “The ceramic and organic microfluidic elements have been enhanced to increase nozzle density. System Plus Consulting’s analysis shows that the circuit has been developed to last with complex and expensive passivation.”

Today, piezoelectric ejection printheads are dominant in industrial printing applications, with more than 85% of printhead shipments based on conventional technologies (non-MEMS based printheads). On the other hand, the consumer market is expected to continue decreasing (despite a small rebound from HP in 2018), due partially to its ink loyalty program. A YoY decrease of 1.1% for consumer and office printing is forecast until 2024, mostly because of the consumer applications that are not fully offset by office printing, despite the launch of full-page-width printhead module-based printers from the three top players: HP, Canon, and Epson. HP still leads the consumer and office printing market with 32% market share, but for everyone else the cake is shrinking.

Epson has just completed construction of its new factory at its Hirooka Office campus, which cost more than US$180 million, to dramatically

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3 MEMS: Micro Electro Mechanical Systems
increase its production of PrecisionCore printheads. Konica Minolta has acquired Inkjet printhead assets from Panasonic to access MEMS production capacity and to grow internal knowledge about the technology. MEMS technologies are on the roadmap of several piezoelectric device players, who want to access high volume and high printing resolution markets. Fujifilm is maintaining its leading position with its Samba printheads, while Xaar 5601 printheads are providing strong performance to customers in Textile applications. And MEMS is not the only solution. Bulk lead zirconate titanate (PZT) printheads are still the best-in-class for functional inks or ceramic printing applications.

“There is new momentum, but also several challenges for inkjet printhead players, in a fragmented commercial and industrial market”, asserts Jérôme Mouly from Yole.

In the past three years, the inkjet printhead industry has seen several major investments and significant changes amongst inkjet printhead players, in what once was a mature market. OEM printhead makers are in fierce competition to access the new business opportunities available through the use of inkjet printheads. From thermal to piezo printheads, conventional to MEMS technologies, and consumer to industrial printing, major drivers are reshaping the printhead industry and expanding OEM manufacturers’ product portfolios… Make sure to attend the online event powered by Yole and System Plus Consulting on September 26. Stay tuned on i-Micronews.com!

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OEM: Original Equipment Manufacturer
ABOUT THE REPORTS:

**Inkjet Printheads: Dispensing Technologies & Market Landscape**
Piezo printheads are accelerating commercial and industrial printing growth. – Performed by Yole Développement (Yole).

**Companies cited:**
3D Systems, Applied Materials, Arrayjet, Bosch, Brother, Canon, Cellenion, Cellink, Ceramtec, Cytena, CTS, EPI, EOS, EPSON, Evatec, Fuji Ceramics, FujiFilm Dimatix, Funai, HP, IBM, Kateeva, Kodak, Konica Minolta, Kyocera, Lexmark, Makerbot, Micor Technologies, Markem Imaje, Meggitt, MEMJET, Microjet, Mimaki, MIT, Mitsubishi Materials, NGK-NTK – Spark Plugs... and more

**HP746 HDNA Inkjet Die from HP**
New generation of the HP high definition ‘dual drop weight’ thermal inkjet die for professional printers. – Performed by System Plus Consulting...

**PrecisionCore Inkjet from Epson**
First thin film PZT MEMS inkjet on the market from Epson for consumer and professional printers. – Performed by System Plus Consulting...

These reports contain a complete physical and cost analysis of the HDNA thermal inkjet die from HP and the MicroTFP chip from Epson. A comparison between HP inkjet die with and without HDNA is included.

**Authors of these reports:**
- **Jérôme Mouly** serves as a Senior Technology & Market Analyst & Business Developer specialized in microtechnologies for inkjet & bioMEMS sensors at Yole Développement (Yole). Since 2000, he is also engaged in more than 100 marketing and technological analyses for industrial groups, start-ups and institutes related to semiconductor & medical technologies industry, in the field of inkjet functional printing, wearable sensors and connected medical devices. Jérôme is also regularly involved in international conferences, giving presentations and delivering keynotes. Jérôme Mouly holds a Master of Physics from the University of Lyon (France)
- **Sylvain Hallereau** serves as a Senior Technology and Costing analyst in charge of IC, LED, MEMS, Piezo and Microfluidic. He has more than 15 years of experience in semiconductor device manufacturing cost analysis and has studied a wide range of technologies. He holds a Master degree in Microelectronics from the University of Nantes.
- **Yvon Le Goff** has joined System Plus Consulting in 2011, in order to setup the laboratory of System Plus Consulting. He previously worked during 25 years in Atmel Nantes Technological Analysis Laboratory as fab support in physical analysis, and 3 years at Hirex Engineering in Toulouse, in a DPA lab.

ABOUT YOLE GROUP OF COMPANIES

System Plus Consulting specializes in the cost analysis of electronics, from semiconductor devices to electronic systems. Created more than 20 years ago, System Plus Consulting has developed a complete range of services, costing tools and reports to deliver in-depth production cost studies and estimate the objective selling price of a product.

System Plus Consulting engineers are experts in Integrated Circuits - Power Devices & Modules - MEMS & Sensors - Photonics – LED - Imaging – Display - Packaging - Electronic Boards & Systems. Through hundreds of analyses performed each year, System Plus Consulting offers deep added-value reports to help its customers understand their production processes and determine production costs. Based on System Plus Consulting’s results, manufactures are able to compare their production costs to those of competitors. System Plus Consulting is a sister company of Yole Développement. More info on [www.systemplus.fr](http://www.systemplus.fr) and on LinkedIn and Twitter.

Founded in 1998, Yole Développement (Yole) has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services, reverse engineering and reverse costing services and well
as IP and patent analysis. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole group of companies has expanded to include more than 80 collaborators worldwide covering MEMS & Sensors - Imaging - Medical Technologies - Compound Semiconductors - RF Electronics - Solid State Lighting - Displays - Photonics - Power Electronics - Batteries & Energy Management - Advanced Packaging - Semiconductor Manufacturing - Software & Computing - Memory and more...

The “More than Moore” market research, technology and strategy consulting company Yole Développement, along with its partners System Plus Consulting, PISEO and KnowMade, support industrial companies, investors and R&D organizations worldwide to help them understand markets and follow technology trends to grow their business. For more information, visit [www.yole.fr](http://www.yole.fr) and follow Yole on [LinkedIn](https://www.linkedin.com) and [Twitter](https://twitter.com).

- Consulting & Financial Services: Jean-Christophe Eloy (eloy@yole.fr)
- Reports: David Jourdan (jourdan@yole.fr)

Yole Développement, System Plus Consulting, Knowmade, PISEO and Blumorpho are part of Yole Group of Companies. Yole Group of Companies - Press Relations & Corporate Communication: Sandrine Leroy (leroy@yole.fr).

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