Stealth Inkjet Printer Startup Could Rock Industry

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Silverbrook Research has developed the Memjet, a nanotech-fueled, consumer inkjet printer that can print sixty pages a minute for under $200. And it works.

An Australian entrepreneur betting his company on a nanotech-fueled, consumer inkjet printer that can print sixty pages a minute for under $200 has successfully demonstrated the technology.

Silverbrook Research has spent the last ten years developing Memjet, a printer that uses an array of ink jet nozzles that spans the width of the paper. Company executives have said they feel that they can ship an 8x10 color inkjet by the end of 2008 that will cost less than $200 and print 60 pages a minute.

Whether or not the company will be able to deliver on its promises is the question that plagues any startup. But one leading printer analyst said he's witnessed the demonstration personally, and that he's been briefed on the company's plans to manufacture components and license the technology to interested parties.

"I've seen it with my own eyes," said Charlie LeCompte, president of Lyra Research, which tracks the printer market. "They've been showing several models since January. I've seen the photo printer running; I haven't seen the letter printer running, but other people - at Lyra - have."

"I've been following this industry for 20 years, and I've never seen

anything of this scale: 10 times faster, 20 times cheaper, all at once," LeCompte added.

Silverbrook plans to offer the Memjet technology as part of several products: a photo printer, which the company hopes to sell for less than $150; the 8x10 color inkjet, due to arrive at the end of 2008 for under $200; a label printer; and a large-format photo printer, expected to cost about $5,000, and capable of printing poster-sized prints "twenty times faster than anything I've ever seen," LeCompte said.

"Conventional wisdom is that you cannot have high speed, quality color and low cost all at once," said Bill McGlynn, chief executive of Memjet's home and office business, in a statement. "This technology turns that notion on its head, making page-wide color printing practical and cost-effective. We believe this breakthrough technology will change the printing industry by eliminating the cost and performance barriers of color, and by allowing both incumbents and non-incumbents to compete on a new playing field."

Silverbrook executives could not be reached by post time, although a spokeswoman for the company said that they were in Prague for an international inkjet conference.

The maximum resolution achievable is 1600x1600, according to Silverbrook. Photo-quality printing on the 8x10 printer can be achieved at 30 pages per minute; standard office-quality color prints are printed at 60 pages per minute, and draft mode prints 90 pages per minute.

Typical inkjet printers, known as "serial printers," use an inkjet nozzle that passes back and forth along a horizontal axis, spraying ink along the surface of the paper. The Memjet technology uses a series of individual MEMS-based inkjet nozzles, fabricated using conventional semiconductor manufacturing techniques. Each chip measures 20

millimeters across and contains 6,400 nozzles, with five color channels, the company said. A separate driver chip calculates 900 million picoliter-sized drops per second. For a standard A4 letter printer, the result is a total of 70,400 nozzles.

Silverbrook has already signed deals with third-party manufacturers to actually manufacture the components, using the company's intellectual property, a key requirement if the company is going to be able to scale up production to compete with the millions of printers HP, Epson, and others sell each year. TSMC will make the print heads, LeCompte said. Right now, Silverbrook itself is manufacturing the machine that butts, or assembles, the print heads next to one another, although LeCompte reported that Silverbrook management didn't believe that to be a problem.

The ink that the Memjet printers are currently using is dye-based, similar to that used by the rest of the industry. Silverbrook executives believe that they can design a printer that holds five times as much ink – 50 ml – as a conventional print cartridge, and sell for about $20 or less. How the company will solve clogging problems – the bane of inkjet printers – hasn't been fully disclosed, LeCompte said.

According to LeCompte, the technology could be licensed to a struggling competitor in the inkjet arena, allowing it to take on companies like Hewlett-Packard through established sales channels. Silverbrook itself has filed 1,500 patents, with 2,000 more pending.

"The first thing HP will do is look at all their patents," LeCompte said. "With 1,500 patents and 2,000 pending, they're going to be praying that they're going to find some overlap. And there probably will be areas in which they overlap one another. So there probably will be some sort of cross-license…with some wheeling and dealing going on."

Silverbrook Research is owned by Kai Silverbrook, who runs a secretive research facility in Australia. About 300 employees are focused on this one product alone. Like Bill Gates and other technology entrepreneurs, Silverbrook is supposedly self-taught, and never finished college.

"[Silverbrook] has been focusing on this thing for ten years," LeCompte said. "My gut says this is going to work."

Editor's Note : This story has been corrected to reflect the correct printing rates of the Memjet technology.
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