

Frequently Asked Questions

HP Multi Jet Fusion™ technology

Disruptive 3D printing technology for a new era of manufacturing



Q: What is HP announcing?

A: HP is announcing new Multi Jet Fusion™ technology, which resolves 3D printing barriers with higher productivity and quality at a lower cost. HP's proprietary synchronous architecture can image an entire area versus one point at a time for faster build speeds and breakthrough economics.⁽¹⁾ Our unique 3D print intellectual property, which leverages HP Thermal Inkjet assets, provides quality that combines strength, accuracy, resiliency and finish for an overall product that is not currently available at the speed and price HP is committed to delivering to market.

Q: How is HP's solution unique compared to what is already available on the market?

A: HP's emphasis is on extreme detail and quality. To achieve new levels of part quality, HP Thermal Inkjet arrays—capable of utilizing multiple liquid agents—provide new levels of accuracy with uniform part strength in all three axis directions. Additionally, this technology has the potential to enable systems that are 10 times faster⁽²⁾ with breakthrough economics⁽¹⁾ and top-level part strength. HP Multi Jet Fusion™ technology can be applied to a broader application set than is available in current technologies and provide an ease-of-use advantage over current offerings.

Q: How is HP Multi Jet Fusion™ technology different from products that are already on the market like SLS (selective laser sintering), material jetting or high-end material extrusion solutions?

A: HP is working to bring to market a faster and less expensive solution that produces higher-quality products than competitive solutions. Currently, our competitors do not offer a significantly functional part that also has fine detail and smooth surfaces. HP Multi Jet Fusion™ technology can build a stronger, more accurate product with a better finish that has the potential to revolutionize manufacturing, offering small businesses a new way to produce goods and parts for customers.

Q: How is this different from SLS (selective laser sintering)?

A: While the SLS process can make parts with good mechanical properties, the process is slow and expensive, and the parts do not have fine detail or smooth surfaces. HP has developed a faster and less expensive method for producing parts that does not sacrifice quality.

Compared to SLS, HP Multi Jet Fusion™ technology helps reduce the overall focused energy requirements needed to attain full fusing, resulting in more consistent material properties. In addition, because the HP solution produces parts faster than SLS systems, it can provide higher material reuse rates, minimizing waste and reducing energy use.⁽³⁾

Q: How are HP materials different from what's already currently on the market?

A: Beyond the current use of thermoplastics, HP aims to lead the market by developing new 3D print materials, using color, biocompatible, ceramic, metal and other materials. Over time, HP plans to deliver color capabilities for the same set of full-color solutions it currently offers in the traditional printing space. In addition to HP-developed materials optimized for the HP Multi Jet Fusion™ solution, we will provide a certification process for partners to develop versatile materials and drive innovation in this area, helping quicken the manufacturing revolution.

Q: Why will it take so long for HP to get to market?

A: The core 3D printing technology capability is already a reality today. To ensure the full HP Multi Jet Fusion™ technology solutions deliver on the potential of the technology, HP is engaging early customers in the product testing and feedback process with its Open Customer Engagement Program, which enables HP to work with select customers for expedited solution development. This program is one way HP is fostering open collaboration. In addition, HP is engaging partners for open collaboration in materials and software, inviting companies to help accelerate and advance the technology.

Availability of the end-to-end HP 3D printing system is planned in 2016,⁽⁴⁾ as the product and HP partners' solutions meet the requirements and quality standards that HP customers expect.

Q: Are there similar technologies currently under development?

A: Over the last decade, there have been several concepts explored, however, we are unaware of any technology that is ready for market which competes with HP Multi Jet Fusion™ technology in terms of part quality and high part functionality at 10 times the build speed⁽²⁾ and with breakthrough economics.⁽¹⁾

Q: Why are you releasing the technology for enterprise versus consumer?

A: We want this solution to be available to everyone from large corporations to a single individual at an accessible price point. There will be options for the enterprise and consumer markets to access and use HP Multi Jet Fusion™ technology, enabling growth and profit opportunities. We are working to provide individual units to enterprise clients and service bureaus, while providing consumers with affordable access to our solution through service bureaus.

Q: Why HP?

A: HP has deep expertise in engineering accurate, fast, reliable systems that customers can trust. HP Multi Jet Fusion™ technology leverages decades of HP experience and intellectual property in HP Thermal Inkjet technology, as well as HP knowledge in chemistry, materials and precision placement of liquid agents for faster and higher-quality 3D printing. HP continues to innovate in the traditional printing market and is bringing that expertise to 3D printing. Because we are using HP proprietary Thermal Inkjet technology, we can take advantage of a worldwide supply chain to scale our business to diverse customer needs.

Q: Are you concerned HP's late entry to the market presents a roadblock to long-term success?

A: No. The potential of the 3D printing market has yet to be fully realized, and we see tremendous opportunity for the game-changing HP Multi Jet Fusion™ technology to disrupt the process of innovation, allowing one to imagine and make parts that cannot be fabricated today. We believe HP Multi Jet Fusion™ technology presents an opportunity to ultimately transform industries, fundamentally changing how and where things are made.

Q. When will HP have a 3D printer available on the market?

A. We are engaging customers starting in late 2014, involving them directly in an agile product testing and feedback process. We expect early customers to have access to printed parts and initial HP Multi Jet Fusion™ systems in 2015. We are working to ramp towards full availability in 2016.⁽⁴⁾

Q. How will HP bring the HP 3D printer to market? Will it sell direct to businesses? Will it sell direct to consumers?

A. HP Multi Jet Fusion™ technology covers a wide range of part categories with high functionality and is targeted to be available to manufacturing companies, medium and large in-house model shops and service bureaus.

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Q. Didn't HP already have a 3D printer on the market?

A. For a short time, HP was engaged in 3D solutions and viewed this effort as a go-to-market feasibility proof. We were able to show that the HP brand and go-to-market strategy added significant value by increasing sales and growing market share. However, we felt we did not have the breakthrough product that was needed, and shifted our energy to technology development. Now we believe we have the winning formula.

Q. How will the HP 3D printer be priced?

A. We believe HP Multi Jet Fusion™ technology will offer a strong value proposition, delivering 10 times faster speeds⁽²⁾ and higher quality at a significantly lower purchase price than comparable systems.

Q. Why should the average consumer care about HP Multi Jet Fusion™ technology?

A. HP Multi Jet Fusion™ technology is designed to enable individuals, entrepreneurs and specialty consumer goods providers to reach new markets and expand possibilities in their sectors and to also provide unique opportunities for the general public to access top-quality 3D print products and services.

Q. Why should the enterprise market care about HP Multi Jet Fusion™ technology?

A. A reasonably priced, high-quality 3D printer enabled by HP Multi Jet Fusion™ technology has the potential to bring an industrial revolution to the enterprise market with more efficient prototype and consumer/prosumer application production, short-run manufacturing and final part manufacturing.

- 1) HP Multi Jet Fusion™ technology leverages proprietary HP Thermal Inkjet technology, enabling lower cost systems that output similar quality to more expensive devices—such as selective laser sintering (SLS)—and speed.
- 2) Based on internal HP testing of part build time, for a set of representative parts in batch process comparing HP Thermal Inkjet based Multi Jet Fusion™ technology to the leading 3D printing technologies in the U.S.—selective laser sintering (SLS) and fused deposition modeling—as of October 2014.
- 3) By selectively combining multiple fluid agents, HP Multi Jet Fusion™ technology reduces the system requirements for large, vacuum-sealed ovens. In addition, the same support material for a given set of objects is aged less simply because the exposure to the adverse thermal and environmental conditions is shorter. These technology characteristics enable HP Multi Jet Fusion™ technology to help minimize waste and reduce energy use.
- 4) Availability is subject to change.

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