



Using 3D Printing for the Win!

“Great things are evolving at iRT with the use of 3D printing and the formation of the [iRT Racing Pro Cycling Team](#).”

Ray Asante, Founder and CEO

COMPANY: iRT Wheels

INDUSTRY:

Bicycle Racing

YEAR RESHORING EFFORT BEGAN:

2012

LOCATION:

Pasadena, CA



“In 2013, iRT announced its commitment to bring manufacturing jobs back to the United States. ... more than 80% of iRT’s components for its road, cyclocross, and mountain bike wheels are sourced from U.S. companies.



BACKGROUND:

In this time of manufacturing evolution, the application of 3D printing is becoming more important. The U.S. 3D printer manufacturing market in 2014 reached \$4.5 billion, and the number is expected to grow by at least 280%. By 2020, the market is projected to reach \$17.2 billion.

Inertia Racing Technology, also known as iRT Wheels, is a California based hand-built carbon racing wheel producer. Established in 2010, iRT produces twelve lines of products for professional competitive cyclers and cycling enthusiasts. The founder and CEO, Ray Asante, started the business with the vision of reinventing the application for bicycle craftsmanship rather than reinventing the bicycle.

In 2013, iRT announced its commitment to bring manufacturing jobs back to the United States. Since the announcement of its Reshoring initiative, more than 80% of iRT’s components for its road, cyclocross, and mountain bike wheels are sourced from U.S. companies. To aid its Reshoring efforts, iRT invested in 3D printing for wheel hubs, which saved the company \$100,000 over a two-year period, enabling it to compete in the competitive bicycle racing industry.

Because of 3D printing in the United States, Asante is able to go above and beyond for customers. Asante received a request for wheels that needed to be delivered for a race in Northern California the very next day. The customized wheels were assembled by iRT that day but not in time for express delivery. Instead of telling the client it wasn’t possible, Asante took the wheels and drove overnight from Pasadena to Northern California. The wheels were then delivered to the client on time and ready for the race. The client contacted and thanked Asante for going above and beyond, and for having a personal driver deliver the wheels overnight. Little did the client know, the delivery person was actually the founder and CEO. The close attention to customer service would not have been possible if iRT was still manufacturing overseas and not using 3D printing.

DECISION FACTORS FOR RESHORING:

As a biking enthusiast, Asante was in love with the Italian Corrado bike, but when he ordered one he was surprised to see that it was imprinted with a “Made in Taiwan” label. “I thought I

was getting an Italian bike.” Asante expressed his confusion and decided to investigate ways to manufacture in the US.

Initially iRT worked with suppliers in Taiwan and found that like other companies manufacturing offshore they had latency in the supply chain due to time zones and international logistics. Communication was also difficult.

A major decision factor in bring manufacturing to the U.S. was the transportation of parts and components. Like most companies iRT transported all of its components via cargo ships and found that the 90-day lead-time was not only an inconvenience but could potentially cause a loss of business. If an issue was discovered in an order, iRT first had to correct the issue with the supplier and then wait another 90 days for a new shipment. In 2015, iRT also had to contend with union strikes at the Port of Los Angeles which caused delays of critical parts. Waiting over six months or more for critical parts meant financial hardship to this small business.

Initially, Asante ordered wheel hub prototypes from Taiwan at a cost of \$7,000 - \$10,000, plus \$5,000 - \$10,000 in duty, taxes, and shipping fees to be delivered within 60 to 90 days. If the prototype wasn't correct the process would have to be repeated, making new molds, with more cost and time delay. Frustrated, Asante

invested in a 3D Printer and that became a game changer.

3D printing enables iRT to rapidly produce a prototype at a much lower cost and saved the company over \$100,000 in two years. They no longer had to make molds before production. Since the 3D printing implementation iRT has created 7 new jobs, hired 6 contractors, and increased their purchase orders by \$270,000 dollars, thus benefitting their suppliers as well.

Asante leverages innovation by rapid prototyping. 3D printing enables iRT to make many changes in a short amount of time. Asante says, “3D Printing provides the opportunity to make as many mistakes as we want.” For example, the most expensive prototype iRT has made only cost \$8 to 3D print, while this prototyping would have cost \$50,000 using

Taiwanese suppliers. In 2013, iRT made 17 revisions to perfect a hub and did it inexpensively. “Not only can we be more efficient, we don't have to raise our prices based on the cost of innovation.” Asante believes that customers should only pay for the innovative product, not the iterative prototyping.

STRONGER CUSTOMER RELATIONSHIPS:

While iRT provides affordable and innovative products for its customers, it also puts emphasis on its strong customer relationships bolstered by manufacturing locally. The close proximity to its customers enables iRT to interact with its customers at a faster and more personal level.

Close attention to detail and dedication to customer service enable iRT to maintain strong relationships with customers, suppliers and employees. “I am not looking to take away jobs from Taiwan, but I do want to build products in the US with American workers.” As an immigrant escaping from dictator rule in the Philippines, Asante became a citizen and served in the U.S. military. He aims to help rebuild the American economy. “Never forget your roots; but don't ever forget the United States.”

iRT website: <http://www.irtwheels.com/about/>



ABOUT THE AUTHOR

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He is currently pursuing his Mediator Credential through the National Conflict Resolution Center and Natural Beekeeping Certification through San Diego Sustainable Living Institute. In his free time he enjoys cooking, creating art and solo backpacking.



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In collaboration with the University of San Diego Supply Chain Management Institute, we provide information, research and support for companies trying to Reshore manufacturing. This includes topics such as site selection, tax incentives, science and math education, marketing, public relations, cost comparison development and case studies.

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