

*"Objet has completely changed our business... it's given us the ability to create working medical devices overnight that are ready for clinical trials."*

**Andre' A.DiMino,**  
Vice Chairman of the  
Board and Co-CEO,  
Ivivi Technologies



## Case Study

### At a Glance

**Company:** Ivivi Technologies  
**URL:** [www.ivivitechnologies.com](http://www.ivivitechnologies.com)  
**Location:** Northvale,  
New Jersey, USA  
**Industry:** Medical devices

### Challenges

- Ivivi sought to significantly cut time off the process of manufacturing medical devices for clinical trials

### Solution

Eden350™ 3D Printing System  
from Objet Geometries

### Results

- Cut an average of five to six weeks off the clinical trial device manufacturing process
- Yielded positive return on investment in less than one year
- Improved company's ability to develop new prototypes
- Strengthened relationships with key distribution partners

## With Objet, Ivivi Technologies rapidly, accurately and cost-effectively engineers, develops and manufactures medical devices in-house for clinical trials

Ivivi Technologies, a publicly traded medical technology company, develops non-invasive electrotherapies for a wide range of different medical applications. Ivivi's medical devices are used to treat pain and swelling by stimulating patients' anti-inflammatory responses. The firm is also developing electrotherapeutic devices for a wide range of other medical uses including cardiac, neurological and orthopedic applications as well as for the treatment of non-healing wounds (e.g., bed sores, diabetic ulcers), sports injuries and other health conditions.

The diverse and expanding opportunities for application of Ivivi's electrotherapies required the continuous production of small quantities of units for clinical trials. Preparation for each trial took costly months of planning, development and production – which, of course, significantly delayed the company's ability to bring products to completion.

"We were relying on outside resources and, often, it was taking months to create just one very expensive and extremely delicate prototype, which of course would have to be modified at least a few times to get the final product right for the trial," said Andre' A. DiMino, Vice Chairman of the Board and Co-Chief Executive Officer, Ivivi Technologies. "We needed a faster, more streamlined system: one that would let us do the engineering, development and production of clinical trial-ready devices in-house. We had heard about rapid prototyping and were very excited about seeing how it could help us."

### Eden350™ chosen for speed, accuracy and printed item's weight, finish, durability

DiMino spoke with representatives of each rapid prototyping system on the market. He found that these systems could enhance the production of single units of new medical devices but, except for Objet, each had significant drawbacks: the units they produced could be coarse, heavy and inaccurate and the production process could be frustratingly slow.



Only Objet's technology proved capable of quickly creating precise devices ready to be fit with electronic components and delivered to clinical trial participants.



DiMino chose the Objet Eden350 for its speed and accuracy, and the printed item's light weight, smooth finish and durability. In late 2007, after advising on the best location for the system at Ivivi and providing a comprehensive tutorial on the technology, Objet made the delivery and installation.

### Positive return in less than a year

The integration of the Eden350 into the product development and production cycle at Ivivi has been an unqualified success, yielding a positive return on investment in less than one year.

"We've cut an average of five to six weeks off the clinical trial device production process," said DiMino. The system is providing other major benefits as well:



- enhancing Ivivi's ability to develop new prototypes, empowering designers to make product changes overnight.
- strengthening relationships with key distribution partners, who have been amazed to discover that Ivivi can modify devices to meet business and patient needs in just one day's time.
- providing rapid, cost-efficient ways to design and manufacture customized production tools (e.g., jigs, fixtures) for finishing clinical trial devices. Prior, these required repeated and expensive outside machine shop support.

And to underscore just how responsive, versatile and creative the Objet system is, DiMino used the technology to print key chains for each member of Ivivi's board of directors.



Ivivi is now considering upgrading to Objet's revolutionary Connex500™, the first-ever system to allow simultaneous 3D printing of several materials with different mechanical and physical properties. According to DiMino, the new technology would allow the company to further streamline the production of devices consisting of both rigid electronic casements and softer components designed for patient comfort.

"Acquisition of the Objet system has proven to be one of the best business decisions I've ever made," said DiMino. "Objet is one of those rare examples of technology innovation that truly enable a company to reach higher levels of success."

## About Objet Geometries

Objet Geometries Ltd., the innovation leader in 3D printing, develops, manufactures and globally markets ultra-thin-layer, high-resolution 3-dimensional printing systems and materials that utilize PolyJet™ polymer jetting technology, to print ultra-thin 16-micron layers.

The market-proven Eden™ line of 3D Printing Systems and the Alaris™30 3D desktop printer are based on Objet's patented office-friendly PolyJet™ Technology. The Connex™ family is based on Objet's PolyJet Matrix™ Technology, which jets multiple model materials simultaneously and creates composite Digital Materials™ on the fly. All Objet systems use Objet's FullCure® materials to create accurate, clean, smooth, and highly detailed 3D parts.

Objet's solutions enable manufacturers and industrial designers to reduce cost of product development and dramatically shorten time-to-market of new products. Objet systems are in use by world leaders in many industries, such as Education, Medical / Medical Devices & Dental, Consumer Electronics, Automotive, Toys, Consumer Goods, and Footwear industries in North America, Europe, Asia, Australia, and Japan.

Founded in 1998, Objet serves its growing worldwide customer base through offices in USA, Mexico, Europe, Japan, China and Hong Kong, and a global network of distribution partners. Objet owns more than 50 patents and patent pending inventions. Visit [www.objet.com](http://www.objet.com).

Objet Geometries Ltd.  
Headquarters  
2 Holtzman st.,  
Science Park,  
P.O Box 2496,  
Rehovot 76124, Israel  
T: +972-8-931-4314  
F: +972-8-931-4315

Objet Geometries Inc.  
North America  
5 Fortune Drive  
Billerica,  
MA 01821  
USA  
T: +1-877-489-9449  
F: +1-866-676-1533

Objet Geometries GmbH  
Europe  
  
Airport Boulevard B 210  
77836 Rheinmünster  
Germany  
T: +49-7229-7772-0  
F: +49-7229-7772-990

Objet Geometries AP  
Asia Pacific  
Unit28, 10/f, HITEC  
1 Trademart Drive  
Kowloon Bay, Kowloon  
Hong Kong  
T: +852-217-40111  
F: +852-217-40555

Objet Geometries AP  
Limited China Rep Office  
Rm1701, CIMIC Tower,  
1090 Century Blvd,  
Pudong Shanghai  
200120 China  
T: +86-21-5836-2468  
F: +86-21-5836-2469

info@objet.com [www.objet.com](http://www.objet.com)

© 2010 Objet, Quadra, QuadraTempo, PolyJet, FullCure, SHR, Eden, Eden250, Eden260, Eden260V, Eden330, Eden350, Eden350V, Eden500V, Job Manager, Objet Studio, CADMatrix, Connex, Connex350, Connex500, Alaris, Alaris30, PolyLog, TangoBlack, TangoBlackPlus, TangoGray, TangoPlus, VeroBlue, VeroWhite, VeroBlack, VeroGray, Durus, Digital Materials, PolyJet Matrix and ObjetGreen are trademarks of Objet Geometries Ltd. and may be registered in certain jurisdictions. All other trademarks belong to their respective owners.

