

What do a Comb, an Egg Cup, and a Justin Bieber Vibrator Have in Common?

Citron pricks the bubble stock that is 3D Systems (NYSE:DDD).

For over 12 years Citron has been focusing on stocks that are frauds, intentionally overvalued, and those that are perched high atop a bubble. When it comes to calling out a bubble stock, **we are yet to be wrong**. Citron bubble picks stretch all the way back to the original dot-com bubble, to the online Real Estate bubble, and in more recent times, to our coverage of selected equities in the alternative energy bubble, such as a lithium battery maker honored with a mention in last year's State of the Union address ... in fact, the week before it filed for bankruptcy.

In this article, Citron will detail the bubble that has enveloped 3D Systems.

"Stock market bubbles don't grow out of thin air. They have a solid basis in reality, but reality as distorted by a misconception."

-- George Soros

We are **not** claiming that direct digital manufacturing has no place in the industrial landscape, and that it won't grow incrementally as new technology enables new applications. We simply observe that appearances have become completely unhinged from reality when it comes to the mania created in so-called "3D Printing" stocks, and 3D Systems in particular.

Additive manufacturing has been around for 30 years. The only thing that is new in recent years is availability of consumer-priced 3D printers – from many sources -- along with a frenzy of thoughtless and shallow media attention.



Just in case any reader believes the 3D Systems is breaking new ground with any transformational or disruptive products, we encourage you to watch this video. Citron would bet that **not one shareholder has ever seen** 3D Systems present their "Next Big Thing" product on Good Morning America – **IN 1989** – This is not a typo.

<http://www.engineering.com/3DPrinting/3DPrintingVideoPlayer/Videoid/2838/View-The-First-Massmedia-Exposure-Of-3D-Printing-.aspx>



1) Promotional management

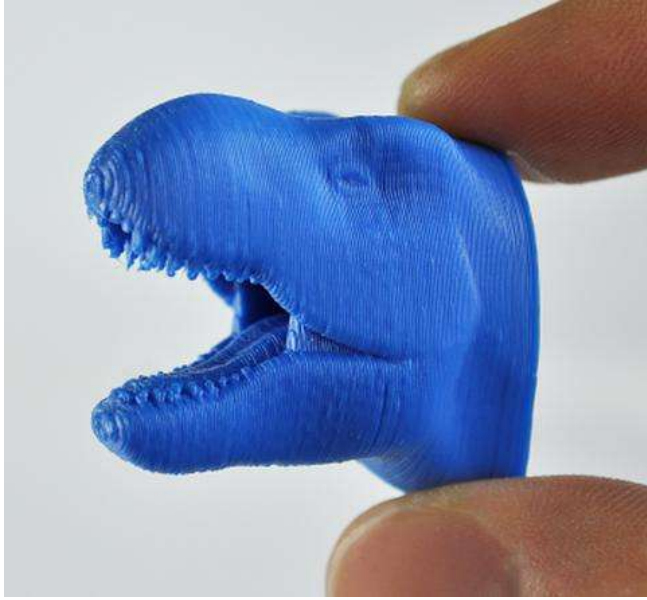
Behind every good bubble there is a good promoter, in this case we have the best in Abe Reichental:

While Citron gives DDD CEO Abe Reichental credit for being able to execute a roll-up strategy in a small and sleepy industrial specialty niche over the past several years, his commentary on his space sounds more like the words of PT Barnum than that of a well-polished CEO. In a recent interview with the Financial Times, he has described the recent transformation in his niche industry as:

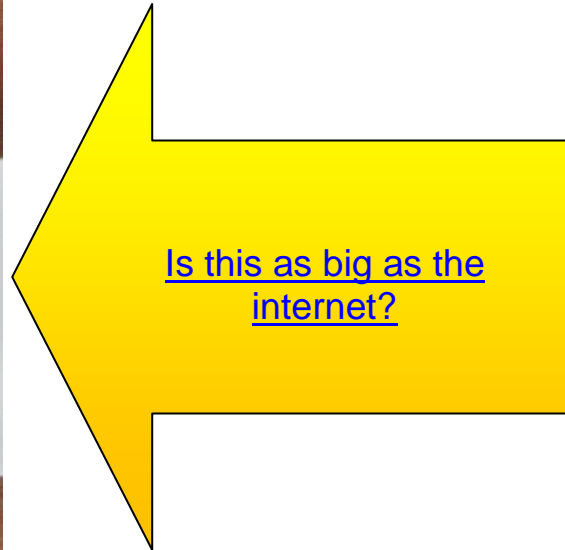
- “as big as the steam engine”
- “as big as the computer”
- “as big as the internet

-- Abe Reichental

<http://www.youtube.com/watch?v=LRv4jp-hhBE>



<http://www.cubify.com/>



We observe Mr. Reichental tipping his hand about his sensitivity to stock movements in this decision to split the stock (3 for 2). The announcement of this meaningless transaction makes it appear to Citron that the company would rather have you buy their stock than buy their products.



2) Promotional media

It is the opinion of Citron that over the past year, much of the move in the stock of 3D Systems can be attributed to the Motley Fool stock promotion piece that has been long circulating and re-promoted. Even though the video has been out for over a year, we received this email this past weekend:

From: The Motley Fool <Fool@foolsubs.com>
Date: February 9, 2013, 6:06:46 AM PST
To: > **Subject:** Dear China, it's over...
Reply-To: "Promo@FoolMart.com" <Promo@FoolMart.com>

*"That's why The Motley Fool has **JUST RELEASED** this [stunning new video](#) — to help individual investors like you jump on the 3 stocks that get you the biggest piece of the action."*

<http://www.fool.com/fool/free-report/18/sa-3Dprintingaudio-181284.aspx?source=isaspodft0000384>

Just released? Motley Fool has been promoting this same video since the stock was \$20! They found themselves with a superficially intriguing stock pick that long ago crossed over the "fully valued" line ... and they just kept on touting it. Now they've boldly gone forth into the land of dishonest stock promotion.

There is so much critical misinformation in this slide deck that we will not waste time dissecting it. Instead we will go right to this critically important disclaimer:

*"The Motley Fool owns shares of 3D Systems, General Electric, and Strataysys and has the following options: **Short Jan 2014 \$55 Calls on 3D Systems** and Short Jan 2014 \$30 Puts on 3D Systems"*

So even the biggest promoters of the stock do not believe it will be above \$55 in a year from now. If Motley Fool would like to contact Citron we will **detail every bit** of misinformation in their video so they may correct their presentation.

<http://www.fool.com/investing/general/2013/02/08/is-3D-printing-as-big-as-the-internet.aspx>

Citron even ordered the updated report from Motley Fool – it is so riddled with fiction we hardly know where to start.

How about here: "A strong commitment to R&D spending, new entrants would have to license 3D Systems' technology or develop their own, a potentially costly proposition" **WRONG WRONG WRONG!**

Look at this amazing article from the Atlantic. The author so drunk with possibilities that he's giving advice to Apple, no less, reveals the magic he created at home: An Egg Cup!



[\(click for link\)](#)

A machine costing hundreds of dollars, twenty bucks worth of materials, and hours of twiddling, to make ... **an egg cup? Really?**



Research and Development: What's that??

In order to have a transformative technology, one would think that research and development costs would be off the charts, as the company would be busy hiring the brightest minds that are going to change the world. For the previous year, R&D expenses were a paltry 6.5% * of revenuesthat's for multiple hardware product lines for consumers, designers and production professionals, plus software, plus materials.

(* corrected , mistakenly stated \$6.5 million)

For a \$3.6 billion dollar treasure trove of company, that is less research than we have EVER seen in a bubble stock. Granted it is a roll-up but NONE of the companies they have acquired to the best of Citron's knowledge come with significant research or proprietary technology.

In fact, DDD has made **no significant investments and no advances** to the main industrial process SLA (Stereo Lithography) or SLS (Selective Laser Sintering) which are the main production print engines, in the last five years.



Half a lie: With little research and development, you might ask how they sell parts for the F-18 jet to Boeing ? Easy! They Don't!

There is a giant disconnect between illusion and reality in this story. Every investor seems to think 3D Systems makes parts for F-18 jet engines -- or is it the whole engine?

(Search ["3D Systems" and "F-18"] in Google = 31,600 Results.)

Do not take it from us, take it from Boeing:

<http://active.boeing.com/doingbiz/d14426/geoprocess.cfm?ProcessCode=S758&State=&Country=AllLocations>

Fact or fiction?

Fiction: From the word-pictures painted by the company, you'd think 3D systems can spray manufacture turbine jet engines.

Fact: 3D Systems makes zero revenue from Boeing or anyone else for F-18 parts

Fact: 3D Systems makes no metal parts for the F-18, either directly or indirectly.

How do they get away with this?

Simple. Here's what 3D Systems' CEO says:

"On every Boeing [BA] F-18, about 90 parts installed on board are printed on our

equipment. "

<http://www.3Dsystems.com/company/investor/forbes-emerging-tech-abe-reichental-3D-systems.pdf>

"The company's printers already make about 90 different parts installed in F-18 fighters," Reichental said.

<http://news.investors.com/business-the-new-america/110612-632342-3D-systems-printer-technology.htm#ixzz2KplshOpM>

Now here's the truth: RMB Products, a privately held independent company, acquired the spinoff of Boeing's additive manufacturing operations several years ago, and was at one time Boeing's sole supplier of nylon SLS-manufactured parts. Nowadays Boeing has authorized SLS manufactured nylon plastic parts from 5 manufacturers, one of whom is still RMB products (see link below).

RMB Products buy 3D Systems' production machines on the secondary market, and modifies them. Using these machines and materials, neither of which are purchased from 3D Systems, they manufacture F-18 parts. **So the truth is 3D Systems does not make one dime in revenue from parts on the F-18, not the machines, not the materials, and not engineering or other services. RMB has done no business with 3D Systems in years.**

And did we mention that while 3D systems touts the ability of this technology to "print in metal", but in reality it does not produce one machine that has that capability. (It bought some service bureaus that use competitors' technology. Another half a lie.) .

OK, now back to the media circus about home 3D printing...

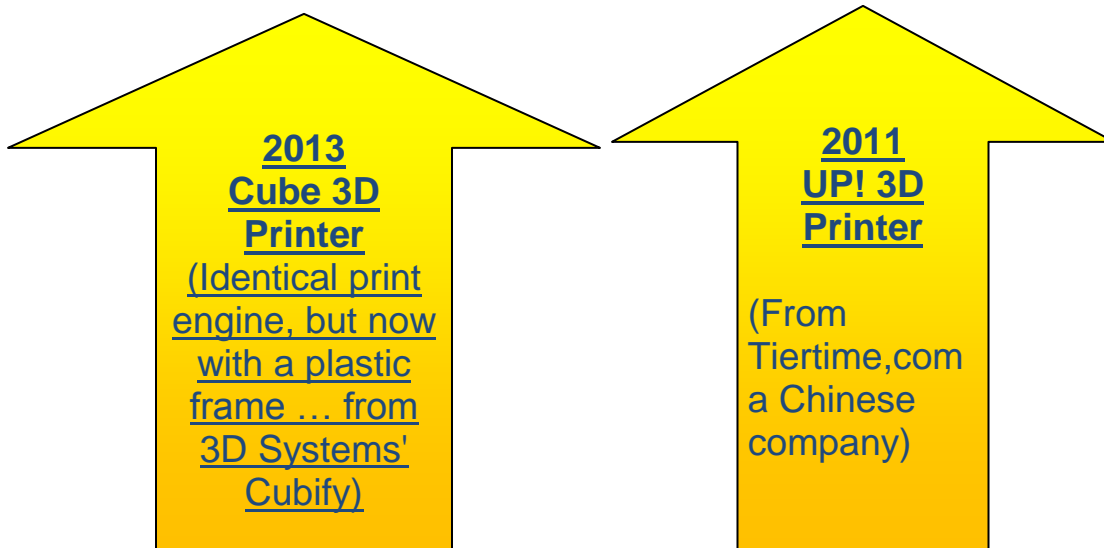


Old Products in a Wrapper of New Hype

Investors are getting the impression, again as painted by its CEO, that home 3D printing is going to be “as big as the iPad”:

<http://venturebeat.com/2012/05/10/3D-systems-ceo-we-want-3D-printing-to-be-as-big-as-the-ipad/>

But for those who still want to give credit to 3D systems for revolutionizing the home 3D printer business....sorry...it’s a myth.



But is the Cubify the best or the least expensive consumer 3D printer? – Not even close.

Printerbot comes fully assembled for \$499.

<http://prinrbot.com/product-category/assembled-printrbots/>

Solidoodle is also \$499.

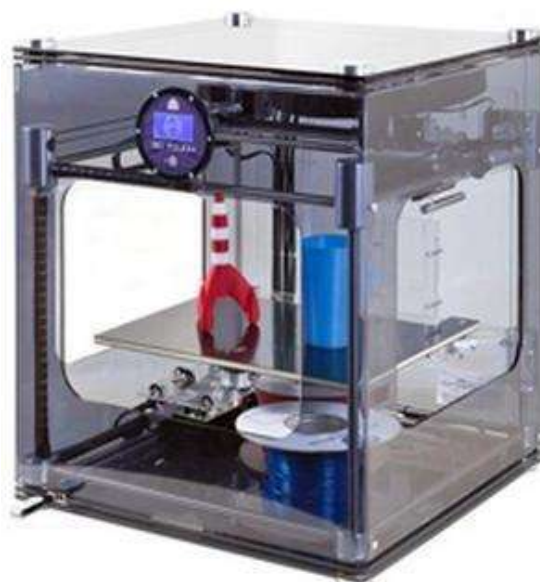
<http://www.solidoodle.com/>

These \$499 printers use ABS/PLA plastics that are dirt cheap. DDD locks users into using their overpriced materials. A budding entrepreneur has even built a "create your own materials for free" device from recycled soda bottlesit was a \$10,000 Kickstarter project. So much for razor/razor blades and "democratizing 3D printing".

Then of course there is Makerbot, which is around pricepoint of CubeX but likely much higher quality. There are truly too many names to list, not even including those out of China, to demonstrate that Cubify is neither unique or the lowest price point among its peers.

CES Award! CES recognized CubeX with the "2013 Best Emerging Tech Award" to glowing tech reviews...

But nobody noticed the product had been available in 2010....and 2011.....and 2012!



[The CubeX:](#)
[2013](#)

[2013 award](#)
[winning product](#)
[made by](#)
[3D Systems.](#)

[BFB 3000:](#)
[2010](#)

[2010 Model](#)
[printer from](#)
[Bits from](#)
[Bytes](#)

Note how they didn't even bother to change the form factor of the little plastic rocket! These are unmistakable markers of bubble land.



3) The Analysts

In order to perpetuate a bubble, a company needs the cooperation of its analysts. In this case the company has had plenty. Over the past 7 months nearly all the covering analysts have just moved their price targets higher as the stock has ascended by expanding their multiples.

We were going to chart these analysts until we found the coup de grâce out of Piper Jaffray early this week. On February 12, Piper published an analyst note touting DDD and the wonders of consumer product Cubify. Analyst Troy Jensen detailed his experience as a new owner of a 3D printer. We could not have written a better piece. Below is a picture of what Troy was able to do with his printer.

Although Piper Jaffray research is for institutional clients, we will post their report because it is important the retail investor reads this.

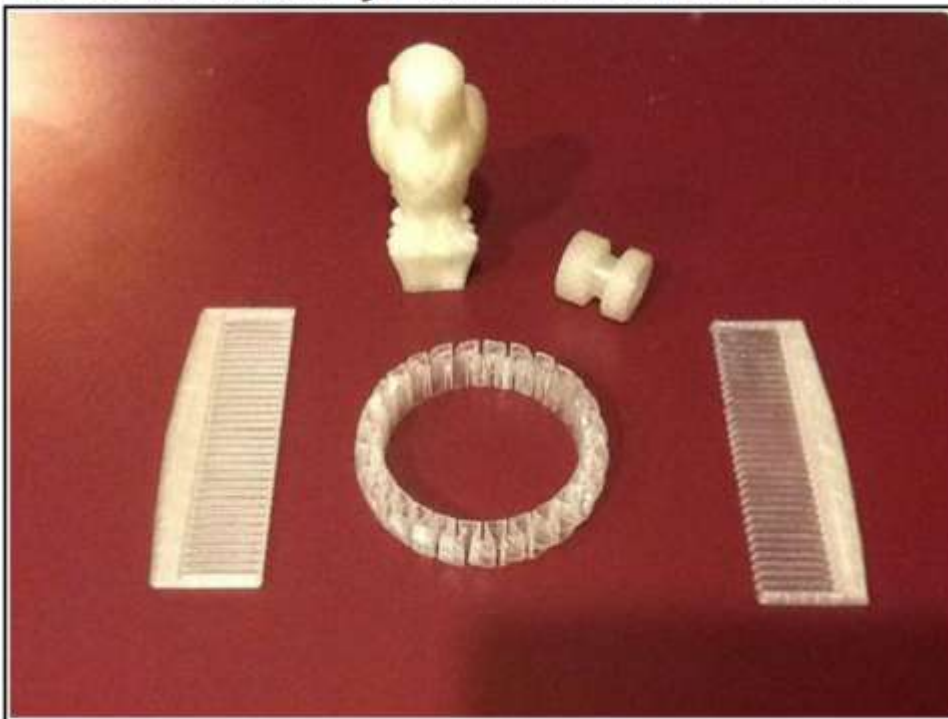
(The last time we did this with another Piper stock, we received a lawyers' letter to take it down, even though as of today's date their recommendation is down 85%.

<http://seekingalpha.com/article/267905-sky-mobi-why-our-price-target-is-at-3>

But this is just too good to pass up:

Exhibit 1

TROY'S ADVANCED 3D PRINTING CAPABILITIES



Source: Piper Jaffray

Citron wishes this was a joke, but it is not. As a matter of fact, the analyst admits that **it took 12 hours** to print that ugly beige Falcon. As a Citron reader joked, “Why would you ever buy a 7 cent plastic falcon in China when you can print one at your home for roughly \$17.50, after amortizing the printer? Maybe the Motley Fool is right...”

Here is a copy of their report ... we couldn't do a better job ourselves. **(Removed per company demand letter.)**

What is most crazy about the Piper coverage is that the analyst printed his objects using a Makerbot -- the higher end **competitor** to DDD. We know this from what he printed out. Obviously he should have disclosed this to the public.

Stop the Presses- This could be a game changer!!

We did find one industry that is being transformed by 3D printing with possibly the most practical application for a consumer product we have seen to date – the sex toy industry. Look what you can make with your 3D printer! A Justin Bieber vibrator. Goodbye China!!



<http://makerlove.com/Free-3D-Sex-Toys/index.html>

Needless to say, this piece illustrates the copyright nightmare about to be opened up as this technology gets pushed down to consumers. (See the link to the Atlantic piece below, which makes this point in some depth.)

So what you are looking at here is not a revolution, but rather the reincarnation of a really old story about a mature industry with a few new high-visibility cheerleaders around it.



4) President Obama and Citron's 'Déjà vu' moment

In President Obama's 2012 State of the Union address, he praised an alternative energy company called Ener 1. (AMEX:HEV) The president did as much as promote the individual company. **Ener 1 filed for bankruptcy a week later.** <http://rt.com/usa/news/energy-ener1-solyndra-state-915/>

It is too bad our president does not read Citron Research. If so, he would have seen our many reports on Ener 1 before he wasted his breath and more importantly \$100 million of taxpayers' money on the company.

<http://www.citronresearch.com/citron-reports-on-ener1-amexhev/>

<http://www.citronresearch.com/citron-research-updates-ener1-amexhev/>

So now he's back, touting 3D printing as the "Hail Mary" solution to resurrect America's manufacturing sector. And a special new technology hub set up to push the envelope.



Before investors get excited about the Youngstown Project mentioned by the President....Just take a look inside:

<http://www.3Ders.org/articles/20130119-namii-named-among-top-innovations-to-watch-by-brookings-and-rockefeller-foundation.html>

This is how a president postures an appeal to voters, demonstrating hope in America by promoting novel ideas before their time. Just because something could change the world in

the future does not translate to individual stock movements in the present.

At least Obama actually issued a disclaimer in that same 2012 State of the Union speech when he said, “Payoffs on these public investments don’t always come right away... Some technologies don’t pan out; some companies fail...”

It is obvious that Obama has been listening to Ping Fu, a representative for 3D Systems (CEO of a tiny software company acquisition target) as she has become a press darling and a mascot for the whole 3D printing industry. We are not going to use this column to disparage Ping Fu, but she is not shy of promoting herself or her industry beyond boundaries of realism: <http://www.thedailybeast.com/articles/2013/02/11/the-persecution-of-ping-fu.html>

What is encouraging for the bear case is that now that Obama has mentioned 3D printing, the criticism of it as a manufacturing panacea are already starting to roll in. Here is an insightful piece published yesterday. We expect more to follow regarding the uphill battle facing large scale adoption of 3D printing. <http://www.theatlanticwire.com/technology/2013/02/obama-3D-printers-manufacturing/62100/>



5) Don’t listen to a stock picker, listen to an industry insider

Our sentiments on the 3D printing space are shared by Todd Grimm, the Chairman of the 3D Data Capture/Reverse Engineering tech group ,and former member of the SME Rapid Prototyping Association's Peer Review Council.

This is from an industry insider without any stock market background.

“Yes, 3D printing is here to stay, and yes, it will experience strong, attractive growth over the coming years. But, this bubble of excitement will pass.”

-- Todd Grimm

<http://www.engineering.com/3DPrinting/3DPrintingArticles/articleType/AuthorView/authorID/106690/Todd-Grimm.aspx>

““There's not an easy way to cross those boundaries right now...”

-- Ping Fu, CEO of GeoMagic

Even the director of the [National Additive Manufacturing Innovation Institute](#) (NAMII) — the transformed lab Obama cited in his speech — has said that the 3-D printing moonshot has not

yet arrived.

<http://www.theatlanticwire.com/technology/2013/02/obama-3d-printers-manufacturing/62100/>

Notice the contrast in rhetoric between when they're talking to investors, and when they're talking within their industry to their professional peers.

This is not even the first incarnation of this hype cycle. We have witnessed this story 3 times in 20 years

1989 was the first hype stage of 3D Printing. The next hype stage was 6 years ago when the prestigious incubator Idealab backed a consumer 3D printer:

<http://www.youtube.com/watch?v=HdzooQQDWGg>

<http://www.youtube.com/watch?v=R-JOJ91p9Wc>

<http://www.dailytech.com/3D+Printers+to+Dip+Below+5000+USD+This+Year/article7199.htm>



6) Roll-ups of Low-Value Companies

With no material investment in R&D, what has 3D Systems done with their capital? The company has made a large number of acquisitions (32 in fact), but almost all of these are tiny. They've bought a few hardware and software companies, and also numerous service bureaus, most of which were showing slow or no growth. In fact, some of the service bureaus were on the brink of bankruptcy. Why are these bottom-dwelling acquisitions worth buying at 2 or 3 x revenues into a company selling at 11x revenues?

Citron could write another 10 pages on our analysis of 3D's roll-up accounting engineering and sheer gimmickry to grossly exaggerate their organic growth. Yet, this conversation has been opened and we do not feel like getting into an accounting argument over what is supposed to be a "revolution". Anyone who is looking at this stock over \$30 a share is obviously bullish on the next 5 years of hype, and less concerned about the details like accounting methods.

Showing growth through roll-up accounting will be far more difficult for 3D Systems over the next year as the acquisition target pool is almost dried up. And once a company becomes dependent on creative re-categorization of acquired entities' revenues and assets to make its own numbers, the strain and the scrutiny will intensify. The size of the acquisitions done so far (average acquisition size \$11.5 million, skewed upward a bit by the \$135m price tag on ZCorp) demonstrates the relatively small industry they operate in. If need be, Citron will do a full analysis on the bull/bear debate regarding 3D Systems' roll-up accounting.



Conclusion

So that completes Citron's tour of the products of the "Next Big Thing" ... you've seen the comb, the egg cup, and Justin Bieber. We hope you've learned a little about the 3D Printing business, and the stock promoting business along the way. Thanks for reading!

As bubbles go, the alternate energy bubble, in fact even the lithium battery sub-sector of the alternate energy bubble, had more going for it than this artifact of cultural misperception.

Before you dismiss all the new information provided in this report, consider this last quote:

“The four most dangerous words in investing are:

"This time it's different".

*-- Sir John Templeton
Legendary investment visionary*

Cautious investing to all.