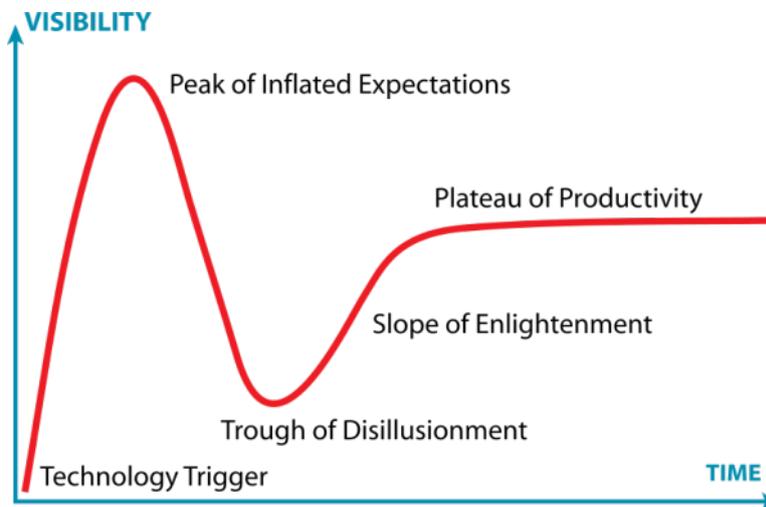


3D Printing (DDD, SSYS, XONE, VJET)

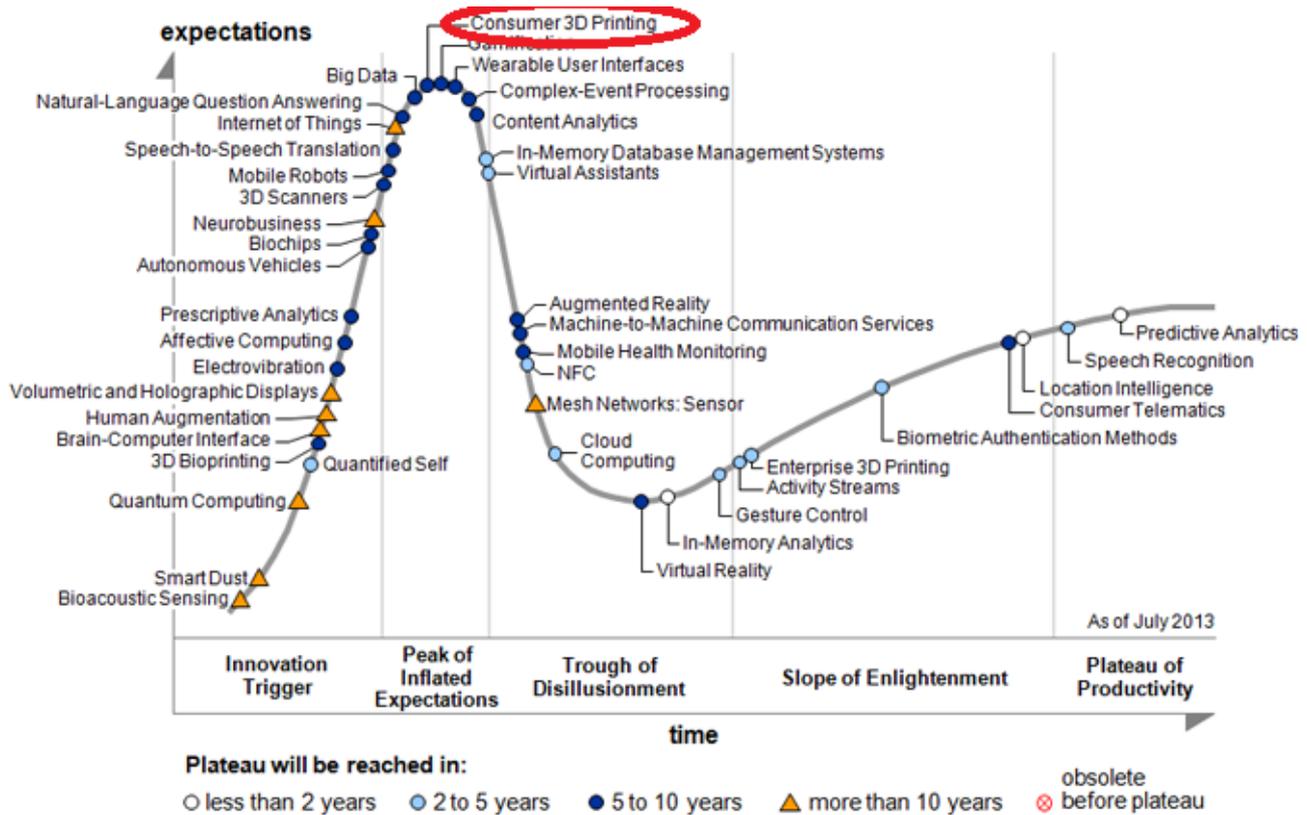
Date: January 19, 2014



I find the Gartner Hype Cycle to be a useful analytical framework because it marries technological trends with behavioral finance. It's not a perfect timing tool, but it does help crystallize the role that hype plays in the adoption of new technology and it helps explain the valuation (or over-valuation) of certain sub-sectors of the market.

Case in point: 3D printing.

3D printing is all the rage. It's a factory in a box - it's changing the world. With 3D printing, everything you wear will be customized to fit your unique body. It's this remarkable story, re-cast and re-told by the media that has led us to where we are today - the peak of the hype cycle.



I believe last week's [announcement between Hershey's and 3D Systems](#) marks the top of the hype cycle. Yes, I am going on record saying that **the top is in. It's time to short all of 'em: DDD, SSYS, XONE and VJET.**

For the unaware, 3D printing is not new. It has been around for decades but it's been relegated to where it's most effective: on factory floors. Thanks to Moore's Law, component prices have fallen and parts have gotten smaller. So small and cheap that you can now fit a 3D printer on your desk. Which begs the question... why would you want a 3D printer on your desk? Ummm, so you can [build a toy dinosaur](#), of course. Wait, what?

You see, [consumer 3D printers](#) - the printers driving the current media hype cycle - offer very little to anyone besides hobbyists and trinket builders. And for me, this is where the story we're being told completely falls apart. Don't get me wrong: there is a real and wonderful usage for [commercial-grade 3D printers](#) - doctors can build complex bone joints and engineers can rapidly prototype hardware designs. But the media stories and valuations of these 3D printing companies suggest every consumer in America will own one. And I can say with a high degree of confidence that this is just not going to happen - at least not anytime soon. Which sets up every investor for big-time disappointment and a trip towards the "trough of disillusionment".

Just as one example, let's take a look at the valuation of DDD, an industry leader. At today's price, it would take 8 years growing the top line at 25% per year to get to a respectable 12x

EBIT multiple – and that bakes in EBIT margin expansion to 21% (from the teens today).

Something tells me this is a bit too optimistic, especially given that (1) there actually is quite a bit of competition in this market ([see page 25 of this DB report](#)), and (2) over time this will become a commodity business, likely following a lifecycle similar to regular 2D printers.

The success of this sector's growth depends on integration at a factory floor, not on sugar-cube designs that move HSY's "timeless confectionery treats into the future".

Last week [ExOne disappointed](#) and Stratasys [lowered their earnings forecast](#).

Candy marks the top.

P.S. As always, I could be wrong so manage your positions and have stops in place.