

# Company Name: Paste Inc.

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## Story

In 1976, Steve Jobs and Steve Wozniak formed Apple Computer, selling the first personal computer, the Apple I, to hobbyists and the like. The rest of the story is history –personal computers are a mainstay in our lives.

Neil Gershenfeld, director of the Center of Bits and Atoms (CBA), believes personal fabricators are at a similar crossroad as personal computers once were in the 1970s. Consumer friendly fabrication machines will soon reach our living rooms and allow us to fabricate everyday necessities like buttons, mp3 players, and even candy.

Paste Inc. is a spin-off from the Massachusetts Institute of Technology (MIT) Media Lab -Center of Bits and Atoms. Our goal is to help artists, designers, and engineers realize solutions to our personal needs. Our vision is to create a platform for them to sell their creations.

## First Product

The A-to-Z is the simplest and cheapest circuit board fabricator in the world. It was designed to mill printed circuit boards (PCBs) via inscribing copper-coated composite sheets. The resolution of the machine is .001" and the compactness of the machine (9"x10"x10") makes it unrivaled for personal circuit board production.

Our unfair advantage is that the A-to-Z costs 400USD in parts and can be assembled in an afternoon. We expect to cut cost of parts by more than 60% to 150USD soon. Currently, professional PCB fabrication machines in the market cost 4,000USD. In the future, the A-to-Z will evolve to a variety of sizes and perform other functions such as 3D printing, surface milling, and cutting.

## Initial Target Market

The A-to-Z garnered instant attention in the fabrication community immediately after it was posted on the MIT CBA website late November 2009. Comments on popular blogs such as hackaday.com demonstrated potential customers looking for our solution:

*I am interested in buying this as a kit for ... \$600. The nature of my workspace limits my choice of means for PCB manufacture, but this is the best solution I have seen so far...*  
Posted at [8:21 pm](#) on Nov 24th, 2009 by nedodelkin

*... if anyone could get a half decent CNC mill (like this) to market in the UK... they would clear up in no time. There is nothing at all ... currently available at anywhere near this price... I make between 10 and 50 circuit boards a month using the photo-resist UV/developer/ferric chloride method – messy and time intensive.*  
Posted at [9:58 am](#) on Nov 26th, 2009 by tom

We estimate the initial target market size of DIY/hobbyists to be between 1.25 billion USD and 3.75 billion USD. According to the Wall Street Journal, SparkFun Electronics Inc., which sells electronic parts to tinkerers, expects sales of about 10 million USD this year, up from 6 million USD in 2008. "Make" magazine, with articles on building items such as solar hot tubs and autopilots for robots, has grown from 22,000 subscribers in 2005 to more than 100,000 today. Its annual "Maker Faire" attracted 75,000 people this year.

60% readers of Everyday Practical Electronics, the UK's leading electronic hobbyist magazine, buy from mail order advertisements. Elektor Electronics is a magazine aimed at active electronic enthusiasts. Its circulation is 100,000 around the world in 2003. 64% of the readers are electronic engineers with an annual purchasing budget of £50,000.

We expect to market to our initial target market via building an online community around our open sourced A-to-Z machine and also purchasing advertisements in electronics/hobbyist magazines.

As soon as we ramp up a streamlined kit fulfillment process where our Chinese vendors ship directly to customers, we also plan to sell the A-to-Z through related ecommerce websites such as Thinkgeek.com, Adafruit.com, and Sparkfun.com.

## Financial Projections\*

|                     | <b>Q1 Y1</b> | <b>Q2 Y1</b> | <b>Q3 Y1</b> | <b>Q4 Y1</b> | <b>Q1 Y2</b> | <b>Q2 Y2</b> | <b>Q3 Y2</b> | <b>Q4 Y2</b> |
|---------------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| <b>Units Sold</b>   | 78           | 158          | 238          | 241          | 244          | 247          | 250          | 253          |
| <b>Revenues</b>     | 43,586       | 134,054      | 139,144      | 144,428      | 149,912      | 155,604      | 161,512      | 167,645      |
| <b>Expenses</b>     | 102,958      | 40,700       | 40,700       | 40,700       | 40,700       | 40,700       | 40,700       | 40,700       |
| <b>Net Income</b>   | (90,787)     | 61,139       | 64,997       | 69,002       | 73,160       | 77,475       | 81,955       | 86,606       |
| <b>Gross Profit</b> | (256,004)    | (150,925)    | 40,175       | 243,143      | 458,430      | 686,505      | 927,854      | 1,182,983    |

\*Assumptions:

- No sales first 2 months of business
- Sales similar to Makerbot Industries (see competitors below) –450 machines in first 9 months of store opening
- Yearly sales growth 15%
- Consulting and Prototyping services performed not included in revenues

| <b>Q1 Y3</b> | <b>Q2 Y3</b> | <b>Q3 Y3</b> | <b>Q4 Y3</b> |
|--------------|--------------|--------------|--------------|
| 256          | 260          | 263          | 266          |
| 174,011      | 180,618      | 187,476      | 194,595      |
| 40,700       | 40,700       | 40,700       | 40,700       |
| 91,433       | 96,444       | 101,646      | 107,046      |
| 1,452,415    | 1,736,696    | 2,036,389    | 2,352,081    |

## Competitors

Our two closest competitors, RepRap and Makerbot Industries, both open source their technology under the GNU General Public License.

RepRap is a research initiative at the University of Bath and their 3D printing fabrication machine, the RepRap Mendel, costs 520USD in parts. Makerbot Industries also offers a 3D printing machine, the CupCake CNC Basic Kit, for \$750 on their web store. Due to demand, Makerbot Industries is out of stock and have had trouble fulfilling demand since starting to take orders this past March 2009. Their next shipment, Batch #9, ships to wait-listed customers on December 1<sup>st</sup>, 2009.

## Team

### Steffen Reichert

Steffen Reichert received a Diplom (Honors) in Product Design from the Academy of Art and Design Offenbach. His past experiences include assistantships and workshops at the MIT Media Lab 'How to Make (Almost) Anything', Harvard Graduate School of Design, University of Applied Arts Vienna, Academy of Fine Arts Vienna and the Academy of Arts and Design Offenbach. He is currently completing a Master of Science in Architecture Studies in Computation and Design at MIT.

### Jonathan Ward

Jonathan Ward developed the A-to-Z during his "How To Make Something That Makes (almost) Anything" course at MIT. He is strongly involved in the Fabrication Lab network, helping to setup labs in India, and is currently completing his Masters of Arts and Science at MIT Media Lab CBA.

### Erik Chan

Erik Chan's past management experiences include working in games and finance at companies like Activision, Citigroup, and his own game studio, Bottomless Pit Games, based in Bellevue, WA. Erik holds a BSc from Johns Hopkins University in Biomedical Engineering and is currently completing a dual-degree Master of Science in Management Studies and Master of Business Administration at MIT Sloan and Tsinghua University.

## Current Milestones

1. Build Community Website around open sourced A-to-Z machine
2. Customer Research & Validation – Pricing, Feature set, and Begin Accepting Preorders
3. Seek 250,000USD Financing to setup a Fabrication Lab and move towards Profitability