Calvin Dass

STATEMENT OF CONFIDENTIALITY

This document is confidential and the information contained herein may not be shared with any third parties without the explicit written permission of Plastic2Printer.

Plastic2printer

Issued: October 2, 2017

Printer2Plastic LLC.

Henle Village 17

Georgetown University

Washington D.C.

+1 (202) 713-4839

# Executive Summary

Plastic2Printer is a LLC that recycles plastic by turning it into a high-quality 3D printer filament. Using PET plastic, a type of plastic that is typically used to create disposable water bottles and packaging, Plastic2Printer creates a product that is not only sustainable, but also cheaper than regular 3D printer filament. In order to align with Plastic2Printer’s core values, the LLC pays a living wage and provides a dignified and comfortable work environment for its employees.

Plastic2Printer has a simple strategy: to buy PET plastic from large universities throughout California for slightly more than the state rebate rate and resell the resulting 3D printer filament back to the university at a discounted rate. Plastic2Printer has the technical expertise and has done the research into how to produce a printer filament that is still high-quality despite being made from recycled plastic and thus is a key player in this partnership. Furthermore, the University of California network has some of the nation’s more renowned engineering programs such as Henry Samueli School of Engineering and Applied Science and the Viterbi School of Engineering, Los Angeles[[1]](#footnote-1) and make use of large amount of 3D printer filament every year.

# Company Description

Plastic2Printer is an LLC that takes the plastic produced by different organizations around California and turns it into 3D printer filament that is sold throughout the state and across the country.

Our mission is to provide cheap yet high quality 3D printer filament to the state of California through the recycling of specific kinds of plastic and our vision is to enable creators while making our planet a greener and happier place.

# Benefits to the community

The primary stakeholders that will be affected by our organization is the environment and the university because the university would be saving money on resources and would be getting more money for their recycling efforts. Furthermore, by using recycled plastic, Plastic2Printer would be reducing the amount of “virgin” plastic that is introduced into the eco-system. This has obvious benefits for the environment as there would be less plastic in local habitats such as the ocean. Moreover, it is very easy to train people how to use the machines that create the filament, which means that anyone in the community can work for Plastic2Printer.

# Products and services description

0.3mm 3D printer filament made from recycled PETT plastic bought from organizations that we are supplying. A variety of colors will be offered after a number of months, but the initial offering will consist of black filament and white filament as these are the most popular.

# SWOT Analysis

|  |  |
| --- | --- |
| Strength | Weakness |
| * Ability to undercut competitors by being able to use recycled plastic to create filament rather than virgin plastic * Local to the state of California where rebate rates for PET plastic are cheap and can be easily matched | * Starting capital is expensive and must be custom made to create filament from recycled plastic * While tests have shown that the quality can be maintained while using our method, it is unclear as to whether or not the volume of production will impact quality |
| Opportunity | Threat |
| * There aren’t many organizations that create printer filament from recycled plastic as they are unable to maintain quality. * There are many subsidies available for business that are environmentally friendly. | * Other organizations with more resources may be discover how to create 3D printer filament from recycled materials which would make us less competitive |

# Management Team

Numerous skills will be needed for the smooth operation of Plastic2Printer. Because the majority of transactions will involve contracts and negotiations, Plastic2Printer will need a team that has strong legal skills, especially when navigating the potential subsidies and tax cuts that may be awarded due to the low waste production.

Because the manufacturing process is labor intensive, it’s imperative that Plastic2Printer has a manager with the strong understanding of human resource management as well as an affinity for

# Marketing Strategy

Plastic2Printer would target the University of California network as engineering programs have begun to make use of 3D printers in their curriculum. Furthermore, research institutions are always looking to reduce costs of resources because of tight budgets.

This would involve contacting the UC network directly and negotiating a deal. Because Plastic2Printer is a new LLC, our pricing strategy would be to undercut other 3D printer filament competitors, such as “matterhacker” who sell PET filament at approximately 45USD depending on the filament types, in order to gain market share.

Furthermore, Plastic2Printer will be positioned as an eco-friendly company and an organization that could be used to improve the image of the institutions that benefit from our services. This is because of our low carbon footprint and mission to reduce waste.

# Manufacturing and Operations Plan

PET plastic would be cleaned to remove any residue. Then it would be ground into tiny pellets so that storage is more efficient and the plastic is easier to work with throughout the rest of the process. From there, the plastic will be loaded into an extruder which raises the temperature to just above melting point. The tip of the extruder is even hotter to improve the consistency of the plastic. The filament is then wound around large spools. Only 2 different filament colors will be manufactured: black and white. This is to keep costs surrounding rent and machinery low during the sunrise period.

# Financial Projection

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Product Data | |  | Data per employee | |
| PET Cost per pound | $1.23[[2]](#footnote-2) |  | Labor Cost per hour | $15 |
| Average Filament Cartridge Price | $45 |  | Maximum Hours | 40 |
| Our Sale Price | $36.0 |  | Cartridges per hour | 3 |
|  |  |  |  |  |
| Revenue | $ 86,400.00 |  |  |  |
| COGS | $ 147.60 |  |  |  |
| Gross Margin | $ 86,252.40 |  |  |  |
| Expenses |  |  |  |  |
| Rent Expense | $ 10,681.08[[3]](#footnote-3) |  |  |  |
| Utilities Expense | $ 21,362.17[[4]](#footnote-4) |  |  |  |
| Distribution Expense | $ 24.69 [[5]](#footnote-5) |  |  |  |
| Income Before Tax | $ 54,184.46 |  |  |  |
| Tax Expense | $ 16,255.34[[6]](#footnote-6) |  |  |  |
| Operating Income | $ 37,929.12 |  |  |  |

The above is a snapshot of a month’s income and is assuming that 20 people can be hired to work fulltime every week for a total of 800 labor hours. This model assumes that we also sell all of the printer cartridges that are created. Profits would be reinvested into training and expansion of capital for the first 3 years, and then accordingly depending the contract that is negotiated with the UC network and any other universities that we may work with.

# Capital needs

Each extrusion machine would cost 224USD (192 Euros) and each shredder would cost 211USD (180 Euros)[[7]](#footnote-7). This means the total cost for each line is 435USD. Employees would need their own line to work at optimum efficiency. At the current number of employees, the total amount needed to purchase all the machines would come to $8700. The return on this investment will be seen within the month.

The warehouse will need to be fitted with plumbing so that the plastic that is collected can be cleaned and decontaminated before being processed in the machines. It is difficult to approximate the cost of this investment, but it is hypothesized that these costs will have a return within the month.

# Milestones

**1st Month:** Birth Stage (Estimate ~6 months)

* Become and LLC
* Purchase and install capital needed for manufacturing
* Train employees on the use of machinery
  + Specification technique for employees as this increases efficiency as they develop their skills in a particular job. However, trade off may be employee motivation as the work is repetitive.
* Obtaining funding
  + Plastic2Printer would like $175,000 for 20%
  + Other funding would be sourced from government grants and through the reinvestment of retained profit
* Getting customers
  + Currently looking at the UC network in California but could expand to other renowned engineering schools around the country. This would require further research into the transportation and distribution of the printer filament

**2nd Month:**  Breakthrough stage (~12 month period after Birth)

* Reinvestment of retained profit
  + Developing a balance and continuing to expand by purchasing more machines and hiring more employees. Through economies of scale, employees will become more efficient so not as many machines will need to be hired
* Expanding into other type of filament
  + This would include conductive filament, glow in the dark filament, as well as filaments made from other kinds of recycled plastic. This would require some R&D as we d not have a refined process for these kinds of plastics

**3rd Month:**  Maturity stage

* Strategy pivot
  + Depending on the outcome of the direct engagement strategy, Plastic2Printer may start selling to private users through an online commerce store. The reason for not starting with the store from the beginning is because of the high fixed costs.
* Recognition
  + It is important for Plastic2Printer that we remain true to our values and do not begin to cut corners as we grow. This is especially important as our brand becomes more recognizable.
  + Plastic2Printer may also consider some CSR opportunities in order to further develop the brand as a environmentally and socially conscious.

1. <http://engineering-schools.startclass.com/d/e/California> [↑](#footnote-ref-1)
2. Sourced from <http://www.calrecycle.ca.gov/BevContainer/Notices/2017/2017MidYrAt1.xlsx> [↑](#footnote-ref-2)
3. <http://www.loopnet.com/Listing/20436433/1047-1059-Montague-Expressway-Milpitas-CA/> [↑](#footnote-ref-3)
4. Going by the $2 per Sqft rule [↑](#footnote-ref-4)
5. Determined using <http://www.californiagasprices.com/tripcalculator.aspx> [↑](#footnote-ref-5)
6. Assuming an income tax rate of 30% [↑](#footnote-ref-6)
7. <https://preciousplastic.com/en/machines/> [↑](#footnote-ref-7)