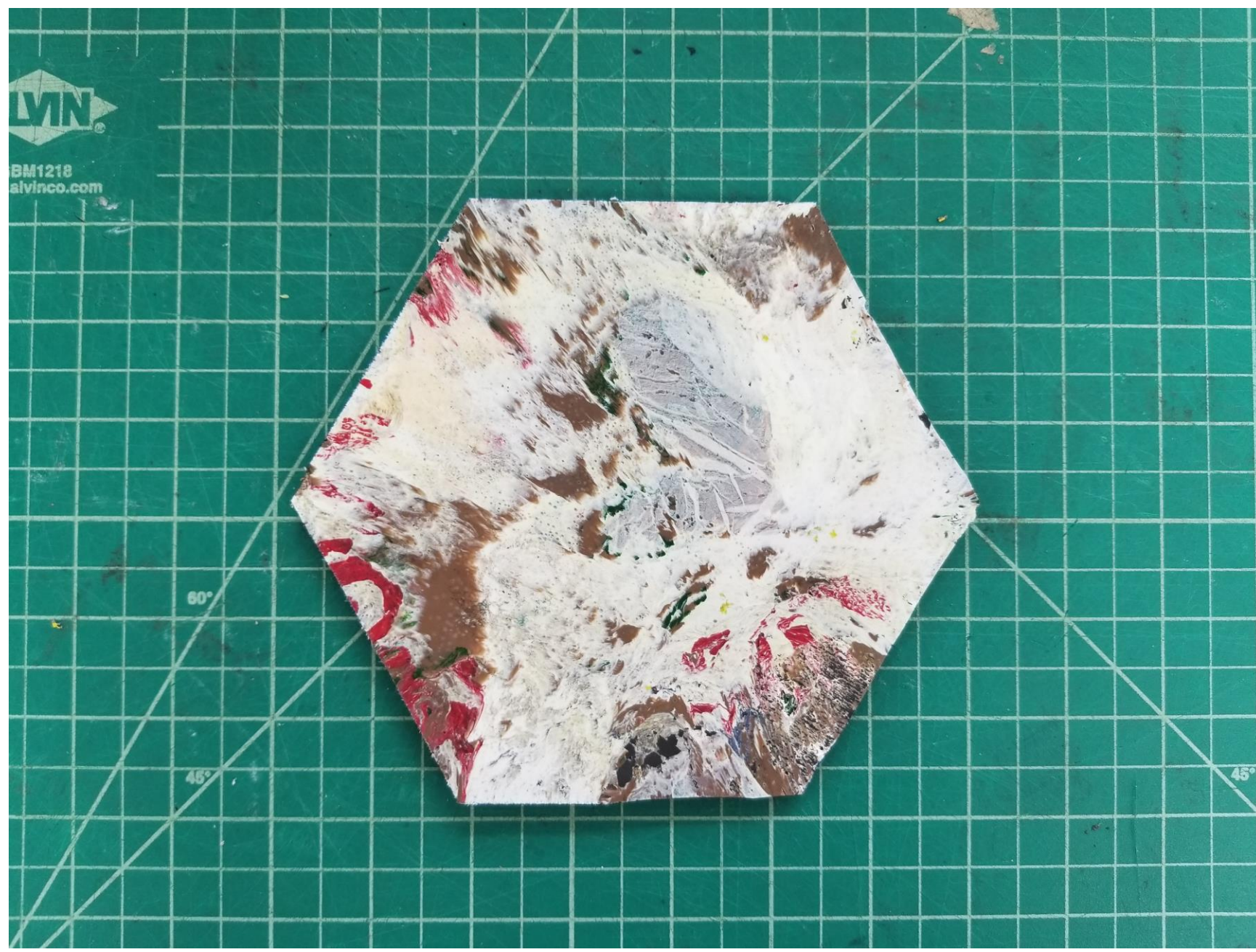


Community Approaches to Recycling Plastics

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Abstract

The existing vacuum in small scale community approaches to recycling plastics is highlighted and how they can enable a scaled implementation of plastics recycling is discussed. A greater understanding of these approaches will establish the need to implement small-scale processes that benefit the environment and create economic opportunities to support the livelihoods of such communities. Considerations for implementing these small-scale processes are discussed.



Research Results

1. Founding of partnered social enterprises *PlasTech Ventures* (US) and *Cloop* (PH).
2. Successful validation through stakeholder summits of the need for small scale recycling facilities to fill in gaps left by the industry.

Prototyping Output

Societal Pollution Cost: **\$33,000**
per ton of plastic.

Tile Weight: **150 g.**

Tile Dimension: **6" Hexagon.**

Projected Cycle Time:
1 tile/5 min

Time to cycle 1 ton of plastic at
typical operating hours:
3 months

Unit Revenue: **\$15/ft²**

Annual Revenue: **\$82,088.00**



Research Objectives

1. Connect with plastic waste stakeholders
2. Validate & crystallize business framework
3. Assess machinery in action and ideate necessary adjustments
4. Conduct plastic recycling workshop with women of Paradise Village Community
5. Leverage network of stakeholders to assist early adopters

Impacts

1. Established a network of stakeholders involved in plastic recycling and similar environmentally conscious fields in the Philippines
2. Expanded cohort of partner research projects between Lehigh and University of the Philippines.

Future Work

1. Research the compressive strength of recycled PET bricks with varying HDPE impurities.
2. Research the Filipino Junk shop and understand their role in community scale recycling.
3. Implement a community scale recycling venture in Manila and conduct feasibility studies.



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