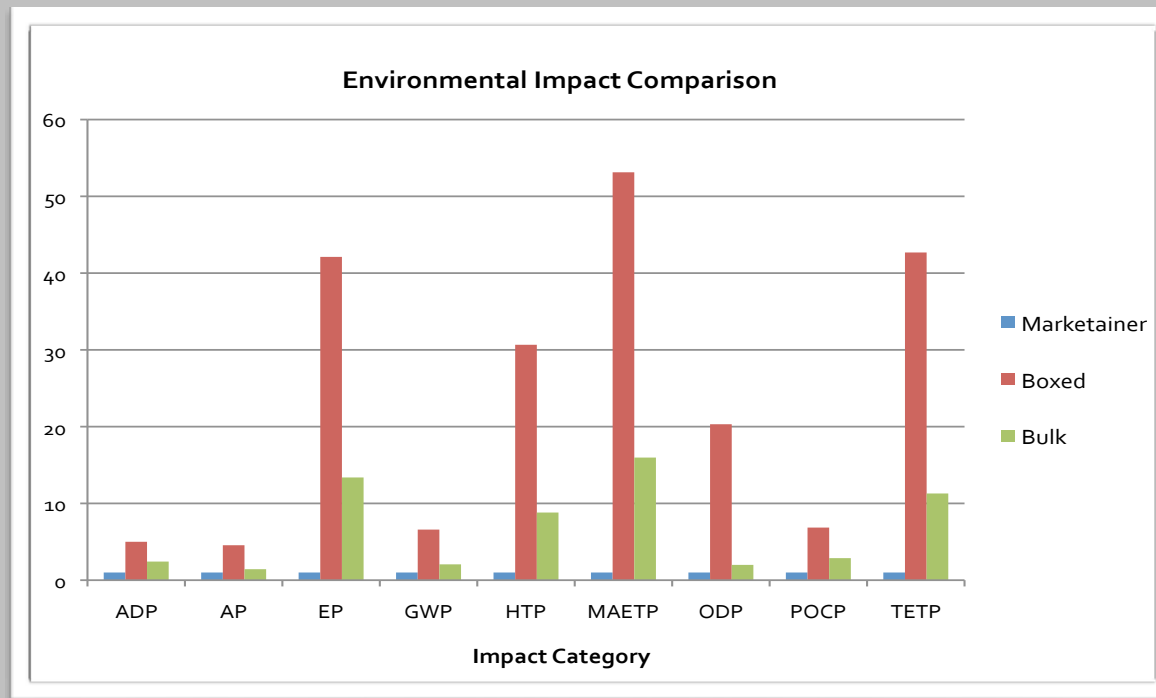


	BOXED	BULK	MARKETAINER
PACKAGING COST	\$1,650.00	\$705.31	\$256.79
FUEL COST	\$50.23	\$10.08	\$60.16
SANITIZATION COST	\$0.00	\$81.85	\$81.85
EOL COST	\$82.96	\$27.38	\$0.73
<b>TOTAL COST</b>	<b>\$1,783.19</b>	<b>\$824.62</b>	<b>\$399.53</b>
LABOR COST ADJUSTMENT	-\$496.04	\$0.00	-\$186.02
<b>TOTAL LABOR-ADJUSTED COST</b>	<b>\$1,287.15</b>	<b>\$824.62</b>	<b>\$213.51</b>
COMPARED TO BOXED	100.00%	64.07%	16.59%



#### Environmental Impact Indicators:

- ▶ ADP - Abiotic Depletion Potential
- ▶ AP - Acidification Potential
- ▶ EP - Eutrophication Potential
- ▶ GWP - Global Warming Potential
- ▶ HTP - Human Toxicity Potential
- ▶ MAETP - Marine Aquatic Ecotoxicity Potential
- ▶ ODP - Ozone Depletion Potential
- ▶ POCP - Photochemical Ozone Creation Potential
- ▶ TETP - Terrestrial Ecotoxicity Potential

#### Life-Cycle Assessment

A comparative life-cycle assessment (LCA) was performed to demonstrate the environmental benefits of the Marketainer system. The LCA evaluates conventional disposable packaging, the current bulk system and the Marketainer system. Golden Temple of Oregon's cereal was used as a baseline product, and its life-cycle impacts were tracked from its production to the final point of sale. The above graph illustrates the environmental impacts of the three systems in nine categories, normalized by Marketainer.

References - 1: Elitzak, Howard. "Food Marketing Costs at a Glance." *FoodReview* 24,3 (December 2001). 29 November 2008. <<http://www.ers.usda.gov/publications/FoodReview/septdeco1/FRv24i3g.pdf>>. 2: Trade Fixtures. "Why Sell Bulk Foods." 2008. <<http://www.tradefixtures.com/whybulk.htm>>. 3: Ackerman, Frank. "Environmental Impacts of Packaging in the U.S. and Mexico." 1997. Tufts University. 29 November 2008. <<http://scholar.lib.vt.edu/ejournals/SPT/v2n2/pdf/jackerman.pdf>>. 4: Ragsdale, Tristan E. "Food Packaging Study: A Report on Environmental Impact." Ashland Food Cooperative, 2005.



## MARKETAINER: CLOSED-LOOP PACKAGING SOLUTIONS

AN ECO-ENTREPRENEURSHIP VENTURE

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### Abstract

The goal of Marketainer is to phase out single-use packaging by creating a reusable distribution infrastructure. Conventional disposable packaging is characterized by resource-intensive production, supply chain inefficiencies, and extensive end-of-life management issues. These factors combine to create a substantial environmental burden and unnecessarily high economic costs. Marketainer aims to eliminate sources of waste throughout the supply chain for a wide range of flowable liquid and solid products. Building upon the existing bulk distribution infrastructure, the Marketainer system is designed to satisfy the product distribution needs of manufacturers, retailers, and consumers. The reduced environmental footprint of the Marketainer system was verified through a comprehensive life-cycle assessment, comparing its impact to that of both typical disposable packaging and current bulk distribution. A detailed economic analysis confirmed the financial gains achievable with this new system. Additionally, extensive market research was conducted to formulate an effective marketing strategy, design a functional prototype, and shape the Marketainer business model. The result is a highly efficient, sustainable, state-of-the-art system that the Marketainer team believes is the future of product packaging.

### The Problem

Disposable packaging has a significant impact financially, not just for manufacturers, but during consumption and disposal as well.

- ▶ The food industry alone spends over \$50 billion per year on packaging<sup>1</sup>
- ▶ Disposable packaging makes up an average of 15-35% of the direct cost that consumers pay for food products<sup>2</sup>
- ▶ U.S. taxpayers spend billions of dollars every year sending disposable packaging to landfills<sup>3</sup>

When calculating the full cost of the disposable packaging life cycle however, we must consider not just the economic, but also the environmental costs of its manufacture and disposal.

- ▶ The manufacture of disposable packaging relies on the extraction of raw materials such as nonrenewable fossil fuels – a significant contributor to global climate change
- ▶ Packaging makes up one-third of the municipal waste we send to our landfills<sup>3</sup>
- ▶ Excess waste and large landfills negatively impact local environmental quality<sup>4</sup>

There exists the potential for significant economic and environmental gains by developing a system that eliminates our dependence on disposable packaging.

### Our Mission

Marketainer rethinks packaging solutions with the goal of making sustainable product distribution the industry standard. By developing an integrated system of reusable containers that links consumers, distributors, retailers and manufacturers, Marketainer aims to conserve natural resources and minimize environmental impacts while creating a convenient and cost saving experience for all user groups.

### Our Vision

Marketainer will catalyze the sustainable food distribution revolution in order to realize a world free of one-time-use disposable packaging.

## The Opportunity

Marketainer intends to phase out single-use packaging by creating a reusable packaging solution for flowable liquids and solids. This will be done by leveraging the potential economic and environmental gains and profitably converting the current wasteful supply chain into a closed-loop, sustainable system. Research conducted by our team over the past year has indicated that there is a significant demand for a better bulk system, with improved convenience and product protection. Marketainer has developed such a system, where all components are



seamlessly integrated and closed-loop by design. The Marketainer system has been designed to phase into current retail facilities, manufacturing operations and distribution processes. It is intended to create a convenient transition away from single-use disposable packaging for all consumers. By working with existing businesses, Marketainer continues to develop its product line in a way that matches the needs of both small local markets and multinational corporations, along with their supplier and consumer base.

## Financing

Marketainer is initially seeking \$50,000 to refine the design of its system and acquire necessary patents. From here, Marketainer hopes to secure an additional \$200,000 to fund an initial proof-of-concept bulk bin and dispensing unit production run. Marketainer will avoid debt financing, relying exclusively on initial equity and profits to fund its expansion. Once the system has been successfully implemented, Marketainer may consider a third round of funding (either from additional partnerships or venture capital) to accelerate growth.

## Supply Chain Implementation

Manufacturer	Retailer	Consumer
<p>Manufacturers purchase heavy-duty reusable bulk bins and fill them with their products. Once purchased, they have the option of customizing any bulk container with their own labels or advertising. By adopting the Marketainer system, manufacturers will be able to:</p> <ul style="list-style-type: none"> <li>▶ Save on packaging costs -- we found that our bulk bins pay for themselves in only 20 cycles</li> <li>▶ Reduce environmental footprint and reliance on disposable packaging suppliers</li> <li>▶ Customize bulk bins with poster-sized advertisements</li> <li>▶ Easily communicate product information (e.g. nutritional content) to consumers</li> <li>▶ Integrate bulk bins with retailers using Marketainer dispensers, or use them to replace disposable containers</li> </ul>	<p>Retailers purchase gravity-fed dispensing units and provide consumers with a swipe card for shopping with the Marketainer system. The Marketainer system will allow retailers to:</p> <ul style="list-style-type: none"> <li>▶ Efficiently stock full bulk containers by plugging them into dispensing units</li> <li>▶ Automatically monitor the level of each product via the store's central computer</li> <li>▶ Collapse empty bulk containers for easy storage and transportation</li> <li>▶ Reduce product loss &amp; spillage by requiring a card with a unique customer ID</li> <li>▶ Streamline the check out process with a simple swipe of a Marketainer card</li> <li>▶ Save on labor costs from efficient stocking &amp; check out</li> </ul>	<p>Consumers "buy-in" to the Marketainer system by obtaining a swipe card and providing the retailer with a nominal amount of personal information, in addition to purchasing reusable personal containers. Benefits to the consumer include:</p> <ul style="list-style-type: none"> <li>▶ Paying 15-35% less for bulk products at checkout<sup>1</sup></li> <li>▶ Being able to purchase desired portion size</li> <li>▶ Shopping quickly &amp; conveniently through the bulk section without weighing or recording product codes</li> <li>▶ Using their swipe card at the register to instantly account for all bulk purchases</li> <li>▶ Having access to purchase history via a web interface which offers nutritional content, expiration dates, recipes, &amp; coupons</li> </ul>

## The Dollars Make Sense

The table on the next page exemplifies the cost-savings that can be achieved using the Marketainer system. Our findings indicate that, for every 5,000 kg of GT cereal sold by the IVFC, the sum of all these costs would be \$1,287 using the boxed cereal system, \$825 using the bulk system, and \$214 using the Marketainer system.

Marketainer conducted a thorough economic analysis that compares our system to conventional single-use packaging and the current bulk system. The analysis incorporates the same model that was used to perform the life-cycle assessment, and compares the estimated cost of conveying the same product (cereal) using each of the three systems from a particular manufacturer (Golden Temple of Oregon, LLC) to a particular retailer (Isla Vista Food Cooperative). The scope of the analysis includes the costs of manufacturing packaging materials, transportation, labor, sanitization (for current bulk and Marketainer systems), and packaging end-of-life management per kg of Golden Temple cereal delivered to the consumer via the Isla Vista Food Cooperative. The findings indicate that Marketainer's overall life-cycle cost is nearly 75% less than the current bulk system, and nearly 85% less than the disposable packaging system.