Smart Crosswalk Dynamic Lighting System

Executive Summary

While in crosswalks, pedestrians are exposed to an increased risk of being involved in life threatening collisions with motor vehicles. Despite the numerous deaths associated with using crosswalks each year, they have remained relatively unchanged for decades. In order to help combat collisions between pedestrians and motor vehicles in crosswalks, the Smart Crosswalk Dynamic Lighting System (SCDLS) was developed. SCDLS consists of several lighting modules attached to a crosswalk. These modules illuminate the interior and exterior of the crosswalk when a pedestrian enters the crosswalk, thus dynamically alerting drivers to the presence of the pedestrian. They also collect vehicle traffic metrics for analysis by the system's owner.

Figure 1 below shows sales projections for the first three years of operation.

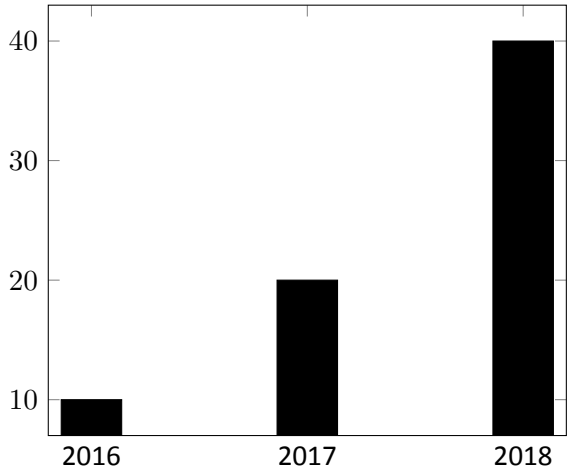


Figure 1: Projected sales in systems for first years of operation

Objectives

- Produce and sell 200 SCDLS units within the first three years of operation.
- Become cash flow positive by end of year three.
- Decreate initial tooling costs by 50%.

Keys to Success

- Use pre-established network connections to deploy early SCDLS units to the Mississippi State University campuses, expanding growth to other universities soon after.
- Provide pedestrians and purchasers a way to submit feedback, allowing the team to consistently improve the product to make raodways even safer.

4. Market Summary

4.1 Market Analysis

SCDLS is designed to protect pedestrians from vehicle collisions in crosswalks with moderate to high pedestrian traffic. Municipalities and universities are the target market for SCDLS, since both are responsible for construction and maintenance of crosswalks. Demand for SCDLS is set to increase in the future since more people are adopting walking as their primary mode of transportation for reasons such as health, environmental concerns, and automobile related expenses. SCDLS is the perfect solution to protect the pedestrians already found in cities and university campuses, as well as any future pedestrians.

4.2 Marketing Strategy

SCDLS will start with marketing to local municipalities and university campuses. Mississippi State University will be the first client we pursue. We will then expand our marketing to local municipalities, such as Starkville. The first contracts will be used for a soft launch. The soft launch will be where the clients will use SCDLS for a period of time and then give us feedback about their experience with SCDLS. SCDLS can then make any needed adjustments or modifications before the main launch of the product. This will also give us an opportunity to get pictures, videos, testimonials, and live traffic metrics from the SCDLS product in real life use for marketing purposes. For the main launch, SCLDS will be marketed to college campuses and municipalities through a sales representative with strategic marketing material created after the soft launch.

4.3 Sales Projection

For the initial system production, SCDLS will produce 80 modules which will be enough modules for 10 systems which we hope to sell for the soft launch in the first year. Once the soft launch is complete, we will resume system production. The second year goal is to sell 20 systems, and the third year goal is to sell 40 systems. The systems will be purchased by new customers for their first crosswalks and old customers that are looking to expand SCDLS in their city or on their campus. The systems can be produced for $1003.50 per system and will be sold for $5000 per system. Resulting in a $4000 contribution margin per system. Bulk pricing will also be available.

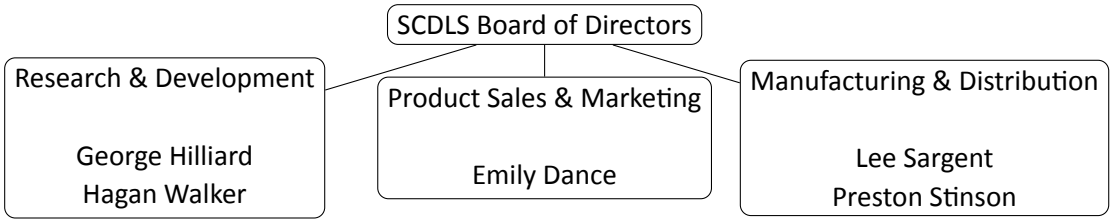
4.4 Manufacturing and Distribution Strategy

Manufacture and distribution of SCDLS systems will be handled the by the SCDLS Manufacturing and Distribution Department, housed in the small business incubator office space. The printed circuit board and the aluminum housing manufacturing will be outsourced, but all assembly will be completed in house. Each system will by thoroughly tested by our team before it is packaged and distributed to the customer.

5. Organization Overview

SCDLS, LLC is a company that strives for excellence in all areas and we believe excellence in our product begins with excellence in the workplace. SCDLS is built on the foundation of integrity, initiative, and integration, and these principles are key to our management style as well. There are five founding board members: Emily Dance, George Hilliard, Lee Sargent, Preston Stinson, and Hagan Walker. Based on strengths and potential, each board member is in charge of a section of the company. Emily Dance is the Sales and Marketing lead over a sales representative that will be hired during the second year to cope with increased sales. George Hilliard and Hagan Walker are the Research and Development leads. Lee Sargent and Preston Stinson are the Manufacturing/Distribution leads with an additional packaging technician being hired during the second year. Although each member has their own section of the company to take care of, there is a system of checks and balances for each department. The board has weekly meetings to discuss weekly happenings and plans so that each department can work efficiently together and so that the board members can approve of each departments projects. To ensure that the finances and legal documents are handled correctly, SCLDS will outsource professional service contracts for human resources, legal, accounting, and payroll processing services. With these services outsourced, the board members can focus on the engineering and the sales of our SCLDS products.

5.1 Company Structure



5.2 Personnel Plan

	2016	2017	2018
Research and Development			
George Hilliard	50,000	50,000	50,000
Hagan Walker	50,000	50,000	50,000
Sales and Marketing			
Emily Dance	50,000	50,000	50,000
Marketing Assistant	—	30,000	30,000
Manufacturing and Distribution			
Lee Sargent	50,000	50,000	50,000
Preston Stinson	50,000	50,000	50,000
Packaging Technician	—	36,000	36,000
Human Resources	1,000	1,000	1,000
Legal	2,000	2,000	2,000
Accounting and Payroll	6,000	6,000	6,000
Total Payroll	259,000	325,000	325,000
Payroll Burden	38,850	48,750	48,750
Total Payroll Expenditures	$297,850	$373,750	$373,750

6. Financial Plan

6.1 Profit and Loss

Our current projections for the next three years rely on the sales of seventy SCDLS systems during that time frame, resulting in $350,000 in sales. During the first three years we expect sales of SCDLS units to grow from ten per year to forty per year. Each SCDLS system is sold for $5,000 and requires $800 in materials and $203.50 in wages. During year two the manufacturing process for the SCDLS module housings will change from CNC machining to injection molding in order to reduce the production costs for each SCDLS system. The change to injection molding will reduce the materials cost from $800 to $500 and the wages cost from $203.50 to $152.63 for each SCDLS system produced. Every sale results in annual gross profit of $3,997.50 for the first two years and $4,347.38 for the third year. In the first three years sales of SCDLS systems is projected to generate approximately $290,000 in gross profit.

The primary expense affecting SCDLS during the first three years is employee salaries. During the first year SCDLS will consist solely of the five founders. A marketing assistant and technician will be hired in the second year in order to handle increased sales. Employee salries will result in $1,045,350 in expenses from years one to three. The other major expense is the $10,000 manufacturing change from CNC machining to injection molding during year two. However, the increase in gross profit from sales during year three will more than compensate for this expenditure. Other expenses such as rent, utilities, and advertising make up less than 5% of the total expenses each year.

	2016	2017	2018
Income			
Sales	50,000	100,000	200,000
Cost of Sales			
Materials	8,000	16,000	20,000
Wages	2,035	4,070	6,105
Subtotal (Cost of sales)	10,035	20,070	26,105
Gross Profit	39,965	79,930	173,895
Gross Profit (%)	80%	80%	87%
Operating Expenses			
Recurring Salaries	297,850	373,750	373,750
Rent	4,200	4,200	4,200
Utilities(Elec/Gas/Phone)	1,200	1,200	1,200
Insurance	500	500	500
Bldg Maintenance	—	—	—
Travel	—	—	—
Advertising	1,000	5,000	5,000
Bank Finance Charges	—	—	—
Capital Expenditure	—	10,000	—
Loan Payments	47,690	47,690	47,690
Misc	1,000	1,000	1,000
Depreciation	1,200	1,200	1,200
Total Operating Expenses	354,640	444,540	434,540
Operating Profit	-314,675	-364,610	-260,645
Misc Income	—	500,000	—
Net Profit (before tax)	-314,675	135,390	-260,645
Taxes	—	40,617	—
Net Profit (after tax)	-$314,675	$94,773	-$260,645
Net Profit/Sales (%)	-629%	95%	-130%

6.2 Projected Cash Flow

	Startup	2016	2017	2018
Income				
Sales		50,000	100,000	200,000
Capital Received/Loans	483,965	—	500,000	—
Other Income		—	—	—
Total Inflow	483,965	50,000	600,000	200,000
Expenditure				
Materials		8,000	16,000	20,000
Wages		2,035	4,070	6,105
Recurring Salaries		297,850	373,750	373,750
Rent		4,200	4,200	4,200
Utilities		1,200	1,200	1,200
Insurance		500	500	500
Bldg Maintenance		—	—	—
Travel		—	—	—
Advertising		1,000	5,000	5,000
Bank Finance Charges		—	—	—
Capital Expenditure		—	10,000	—
Loan Payments		47,690	47,690	47,690
Misc		1,000	1,000	1,000
Taxes		—	40,617	—
Total Outgo		363,475	504,027	459,445
Income Less Expenditure		-313,475	95,973	-259,445
Cash Balance	$483,965	$170,490	$266,463	$7,018

6.3 Projected Balance Sheet

	Startup	2016	2017	2018
Current Assets				
Cash Balance	483,965	170,490	266,463	7,018
Merchandise Inventory	10,035	10,035	20,070	20,000
Subtotal	494,000	180,525	286,533	27,018
Capital Assets	6,000	6,000	6,000	6,000
Depreciation	—	1,200	1,200	1,200
Subtotal	6,000	4,800	13,600	12,400
Total Assets	500,000	185,325	300,133	45,523
Liabilities				
Current Liabilities	311,400	—	—	—
Long Term Liabilities	—	—	500,000	—
Total Liabilities	311,400	—	500,000	—
Capital	500,000	185,325	-208,667	37,923
Total Liabilities and Capital	$500,000	$185,325	$291,333	$37,923