

Stanford University Social Entrepreneurship Startup

Mexico Business Plan and Recommendations

Last Modified: June 25, 2003

Elliot John Patrick Sather	ogre@stanford.edu
Steven Bishop	sbishop@stanford.edu
Thuy Thanh Bich Le	thuyle@stanford.edu
Darren Johnston	johnston_darren@gsb.stanford.edu
Hector Armstrong	armstrong_hector@gsb.stanford.edu
Maria Gonzalez	gonzalez_maria@gsb.stanford.edu

Table of Contents

1	EXECUTIVE SUMMARY	3
2	THE BUSINESS AND ITS PRODUCTS	5
3	THE CUSTOMER	9
4	THE ECONOMICS OF THE BUSINESS	16
5	PRODUCT AND TECHNICAL DETAILS	18
6	DISTRIBUTION PLAN	19
7	MARKETING PLAN	23
8	MANUFACTURING AND OPERATIONS PLAN	27
9	ORGANIZATION	28
10	OVERALL SCHEDULE	31
11	PARTNERS AND KEY RELATIONSHIPS	33
12	CRITICAL RISKS AND ASSUMPTIONS	35
13	THE FINANCIAL MODEL	37
14	APPENDICES	42

1 Executive Summary

The opportunity

ILumina will be a social venture for-profit company operating in Mexico. It will be a freestanding sales and marketing organization tasked with marketing and distributing the goods that ILumina and Light Up the World Global design, create, and produce. The main goal of the organization will be to provide, in a sustainable manner, lighting for the poor rural communities that are currently off the grid.

Mexico is one of the most electrified Latin American countries, but it still has approximately one million households without electricity in over 74,000 communities concentrated mainly in the Southern part of the country. The opportunity lies in providing an LED light product to the estimated 988,000 non-electrified households.

Rural non-electrified households have a variety of lighting needs that our LED product could address:

- ❖ More energy-efficient lighting for use outside the home
- ❖ More indoors lighting
- ❖ Safety and health concerns: fumes from burning candles or kerosene
- ❖ More quality light for social activities inside and outside the home

The product

The initial product is an LED (light emitting diode) lamp that can replace a household flashlight and can also replace or augment candles and kerosene lamps for lighting the home. LEDs are ideally suited to the harsh conditions that can exist in the developing world, as they have no delicate glass or filaments and can withstand severe shock and vibration, a common cause of premature failure with traditional light sources.

Value proposition

- ❖ The LED lamp's main use is to replace a household's flashlight. The end-user will obtain savings from a significant reduction (estimated at about 6x) in the amount of batteries he/she purchases per month.
- ❖ A secondary use is to augment household lighting provided by candles and/or kerosene lamps by utilizing the LED lamp as an indoor light fixture.

The LED lamp has the following advantages over competing products:

Energy efficiency: LEDs outlast incandescent bulbs by 10 times and use 95% less energy.

Simplicity of operation: The product is very similar in design to already used products.

Durability: LEDs are ideally suited to the harsh conditions that can exist in the developing world.

Varied functionality: The LED lamp has variety of task/ambient light functionalities.

Cost: The LED lamp is priced low enough to produce savings if used as an incandescent flashlight substitute.

Safety: LED technology produces no fumes and has no hazardous components.

The Economics of the Model

Based on our calculations, our lamp saves a substantial amount of money annually if used as a substitute of the current incandescent flashlights. The two fundamental premises are:

- In rural areas flashlights are used widely, and the monthly battery consumption is \$6¹
- LED lamps consume 1/6 (1 Luxeon LED) or 1/3 (2 Luxeon LEDs) of the energy consumed by an incandescent flashlight.

The payback period for rural users that replace incandescent flashlights with our lamp is around two months. The end-user will achieve annual savings of \$50 (See Section 4.1 for further detail). This represents annual savings of 5.6% over the yearly budget of the poorest segments of the population, which are the most likely end-users of the LED lamp.

Company Strategy

ILumina will be mainly a sales and marketing company, and thus, successful implementation and execution of its marketing strategy will be critical to its survival. Our business plan looks to initially target ten Southern Mexican states that account for 69% of all non-electrified households. Within these states there are also large population centers with large retailers. Although ILumina's primary target market will be rural households that do not have electricity, the plan is to sell its products in both rural and urban areas.

Since our goal is to minimize the retail cost to our rural off-grid end-users, we need to achieve large enough sales volumes to become a sustainable company. For this reason, in addition to selling to rural areas we will be marketing our LED lamp to more affluent urban consumers through mainstream distribution channels such as supermarkets and stores.

Distribution

ILumina will maintain relationships with a number of urban and rural distributors. Distributors will either receive shipments directly from the manufacturing company or from ILumina, which will have a facility for inventory storage. Initially ILumina plans to work with two rural distributors and two urban distributors, this number will increase up to four for each segment in year 5. In addition, ILumina will serve some urban and rural stores directly.

The Rollout Strategy

The initial 4-year strategy will be a four-phase process:

Phase 1	Phase 2	Phase 3	Phase 4
Development	Pilot Program	Initial Rollout	Southern Expansion
Manufacturing agreements Request for quotes Design, marketing agreements Distributor agreements	Small roll-out Location: <ul style="list-style-type: none"> ▪ Mexico DF ▪ State of Mexico 	Potential rural market of +263,000 households <ul style="list-style-type: none"> ▪ Mexico ▪ Puebla ▪ Veracruz 	Potential rural market of +560,000 households <ul style="list-style-type: none"> ▪ Oaxaca ▪ Chiapas ▪ Guerrero ▪ S. Luis Potosi
<i>Duration: 6 months</i>	<i>Duration: 6 months</i>	<i>Duration: 12 months</i>	<i>Duration: 24 months</i>

¹ Source: Instituto de Investigaciones Eléctricas.

2 The Business and its Products

2.1 The Industry – Existing Alternatives and Competition

The following table lists current end-user options for lighting up a household in Mexico:

Light Source	Cost	Lumens ²	Regional use	Advantages	Drawbacks
Candles	\$1	20	Rural; off-grid	<ul style="list-style-type: none"> Familiar technology 	<ul style="list-style-type: none"> Safety hazard Short life
Incandescent Flashlight	\$3-10	20	Rural/ Urban; on and off-grid	<ul style="list-style-type: none"> Portable Widely used and accepted 	<ul style="list-style-type: none"> Replacing batteries expensive Battery charge- 8 hrs
Incandescent Bulb – 40-W	\$2	480	Urban/Rural; grid	<ul style="list-style-type: none"> Highest lumens output Long life 	<ul style="list-style-type: none"> Unit is fragile Inefficient use of energy Need grid access
CFL³ 5-W	\$10	280	Urban; grid	<ul style="list-style-type: none"> Better light output per cost Long life 	<ul style="list-style-type: none"> Difficult to make unit small Unit is fragile
Kerosene lamp	\$1	10	Rural; off-grid	<ul style="list-style-type: none"> Portable 	<ul style="list-style-type: none"> Produces fumes Safety hazard Kerosene expensive Short life

Candles: Candles are widely used in Mexican homes in both rural and urban areas and represent a major source of lighting at night for non-electrified communities. Their low cost and availability make them attractive despite its low lumen output.

Standard Flashlight: Many non-electrified households use a flashlight to help light up their homes at night and provide illumination for outside activities. They devote part of their monthly budget to acquiring batteries, which they purchase from shops and other vendors.

Incandescent Bulb: Standard and most widely used light source for both urban and rural electrified households.

Compact Fluorescent Light (CFL): Main use is in businesses and higher-income households in both urban and rural areas.

Kerosene: Kerosene accounts for approximately 10% of rural energy supplies. In Mexico it is not as widely used as in other countries such as India or China due to the high level of electrification of the country and the availability of biomass. The lamp is relatively expensive and the kerosene fuel represents a considerable monthly expenditure.

² Measured in lumens, which is amount of light through a predefined area.

³ Compact Fluorescent Light

2.3 The Product

The LED light product has the following features:

LED technology: LED technology is solid state, very durable, and runs on low voltage (2.5- 3V). Its has a long life in comparison to an incandescent bulb (more than 50,000 hours), and uses 5% ⁴ of the energy of a regular incandescent bulb.

Flashlight functionality: Enables to end-user to utilize the product as both a flashlight and as a light fixture to be hung from the ceiling/wall or be placed in any part of the room as a source of light. In rural areas it is often necessary to go outside for household/social activities.

Adjustable stand: An adjustable stand allows the product to be oriented as a task or ambient lighting system and gives it the flexibility to be placed on a variety of household surfaces.

Lightweight/portable: Portability is important as it allows the end-user to take it outside the household and also the flexibility to change from task/ambient capability.

Uses commonly available batteries: Our end-users, even if accepting of new technologies, are more likely to accept the LED product if several aspects of its design and use are familiar to them. In addition, most rural households in Mexico have small flashlights and purchase batteries on a weekly or bi-weekly basis.

Ambient light: Even though it can be used as a flashlight, its main intended use is as a source of ambient light.

Battery vs. PV panel

For our LED lamp, we considered either PV panels or batteries as our power source. The following table lists their use and characteristics in Mexico:

Power Generation	Startup Cost	Ongoing Cost	Advantages	Drawbacks
PV Panel	High	Low	<ul style="list-style-type: none"> No ongoing cost except maintenance Appropriately sunny climate in Mexico 	<ul style="list-style-type: none"> Unit is fragile Need steady sunlight Difficult to fix Low usage flexibility
Batteries- 2 D-cell	\$ 1.50- 2.00	same	<ul style="list-style-type: none"> Widely available Relatively cheap 	<ul style="list-style-type: none"> Need constant replacing

We chose a battery-based system for the following reasons:

- The PV option was only feasible if an entrepreneurship model was followed, where a storeowner or other entrepreneur would rent or sell the LED light and charge a fee to re-charge the lights. Feedback from PV experts in Mexico mentioned that our target market does not realistically support or depend on charging a light every two days.

⁴ Source: :Light Up the World Foundation <http://www.lutw.org/LEDtechnobenefits.html>

- Charging the LED lamp with a PV panel would require 7 hours of exposure to sunlight. We believe this feature is too restrictive and the end-user would prefer a simpler-to-use battery-powered product.
- The Mexican government has implemented solar home system solutions in rural areas, and as a consequence:
 - People are familiar with the solar technology, however;
 - They use solar home systems that cover more than one light;
 - They have also gotten used to obtaining these systems for free from the government, and they would be less willing to pay for it.
- The target market already uses batteries, so they are familiar with the technology and there subsequently won't be issues regarding the adoption and familiarization with new technology
- Batteries are widely available throughout rural areas.
- Our solution can help substantially decrease the amount of disposable batteries that rural people use, and thus contribute to a cleaner environment.

2.4 Competition and Competitive Edges

Strategic advantages

The key strategic advantages of the LED product are higher energy efficiency, simplicity of operation, durability, varied functionality, cost, and safety.

Energy efficiency: LEDs consume 6 to 10 times less energy than incandescent bulbs .

More light: Incandescent flashlights have a lumens output of 16-20, while the LED of our lamp has an output of 40.

Simplicity of operation: The LED product is very similar in design to products already used by our target customer segments. If they are convinced by our value proposition, they do not have to deal with the uncertainty in adopting and using an unfamiliar, new technology.

Durability: LEDs are ideally suited to the harsh conditions that can exist in the developing world. With no delicate glass or filaments, LEDs can withstand severe shock and vibration, - a common cause of premature failure with traditional light sources such as incandescent bulbs and CFLs.

Varied functionality: Given its design, the LED product can be placed on the wall, be hanging from the ceiling and used as a regular flashlight. This gives the end-user a variety of task/ambient light functionalities that fit the various user scenarios of our customer segments.

Cost: The LED lamp will cost \$9.95, and we believe that the consumer will be able to recover this investment in 2 months, thanks to savings in battery consumption.

Safety: LED technology produces no fumes and has no hazardous components. It is solid-state technology and is nearly indestructible.

Sustainable Advantages

Given current sourcing partnerships and the continuous improvement of LED technology, our LED lamp enjoys several sustainable advantages:

Low cost LED bulbs: LUTW's current partnership with Lumileds enables the Foundation to purchase Luxeon 1-Watt LEDs at a discount, allowing ILumina to keep the price low, increasing its affordability to the end-user. As long as LUTW continues with its mission to market the LED products to need-based populations, it is expected that Lumileds will continue providing LEDs at a discount. This partnership is the key component of the Foundation's product strategy.

Improvement of LED technology: LEDs have evolved significantly in the last 5 years, with growth rates as high as 58% a year. The newly forecasted market size is \$3 billion by 2006. The rate of improvement of LEDs (lumens/Watt), is at least comparable with the rate that computers are speeding up. LED technology has a theoretical limit in excess of 200 lumens/Watt and it is still relatively low on its development curve. For comparison, an incandescent bulb currently puts out 12 lumens/Watt.

First-mover advantage: By being first to market with a low-priced, multiple-use LED product, ILumina can build a strong brand equity that will help to establish the product's strength in the marketplace and help withstand potential competitor pressures.

Competitive Outlook: Flashlights

Since our LED lamp will be used mainly as a flashlight, the following table lists the characteristics of comparable products in Mexico that use D batteries (AA batteries have different energy usage and efficiency):

Manufacturer ⁵	Cost	Light source	# of D batteries	Lumens	Comments
Eveready	\$10.20	incandescent	3	34	• Batteries included
Eveready	\$5.00	Incandescent	2	16	• Batteries included
Varta	\$13.90	incandescent	2	16	• Batteries included
Varta	\$4.90	Incandescent	2	16	• Pocket flashlight • Batteries included
LED Lamp	\$9.95	LED		40	• Batteries not included

Competitive Outlook: Power Source

There is no clear-cut national PV program in Mexico but over 60,000 such systems have been installed to date in more than 2,000 rural communities, benefiting more than 250,000 people.⁶ In the long run, ILumina plans to offer battery recharges that will be compatible with the solar systems and will allow the consumer to decrease its expense in batteries even further.

⁵ Source: Soriana, a northern Mexico retailer

⁶ www.euronet.nl/users/oke/PVPS/ar00/mexico.htm

3 The Customer

3.1 Customers

Our main end-user is a household that is off the main electricity grid and is using candles, flashlights, or kerosene (or a combination) to light up their house at night. However, the value proposition of a more energy efficient flashlight will make the LED product attractive to urban consumers. Taking advantage of this, ILumina will target urban consumers to improve financial results.

The following table outlines the key needs of the end-user in a low-light setting and how these are met by the offering:

Need	Result from Usage Scenario
More light	Enable the end-user to better conduct household activities in the early morning and at night
More time for household activities	Enables end-user to extend the workday if desired and also to continue or begin educational activities for household adults and/or children
Safety and health	No more fumes from biomass, candles, or kerosene and no more potential for fire or injuries due to contact with flame
Social activities	Enables end-user to participate in social activities inside or outside the house where darkness had previously prevented it from happening

The following table is a breakdown of all customer segments:

Characteristics	Rural Non-Electrified households	Rural Vendors	Lower-Income Urban Electrified Households	Other Urban Electrified Households
Market Size	~1M (in 2000)	~30,000	~10M (in 2000)	~10M (in 2000)
Ability to Pay	Low	Medium	Low/Medium	High
Demographics	Mainly indigenous, agricultural	Permanent stores in towns; weekly markets	Shanty-towns bordering large urban areas	All other electrified households
Ease of Distribution	Low	Very Low	Medium	Medium/High
Mission Alignment	High	Medium	Medium	Low
Promotion	Medium	High	Medium	Medium
Customer Need	High	Medium	Medium	Medium
Previous Light	Flashlights, Biomass, Candles, PV systems	Gasoline generators	Grid, flashlights	Grid, flashlights
Overall Attractiveness	<i>High</i>	<i>Medium</i>	<i>Low/Medium</i>	<i>Medium/High</i>

Target End-User Segments

ILumina has chosen to target rural non-electrified households as well as more affluent urban households as its main customer segments.

- 1) **Rural Non-Electrified Households:** The highest concentrations of non-electrified households are located in rural areas. These end-users do not have access to the electricity grid and rely mainly on candles and flashlights to provide lighting for household activities. They are the end-users most likely to benefit from the savings in batteries and the improved and more useful light.
- 2) **Other Electrified Urban Households:** This customer segment, while not directly aligned with the Foundation's main mission to bring light to those that don't have it, is an important source of revenues that will help subsidize losses incurred with the LED product rollout on an ongoing basis. Large retail stores are located in all the states in which we are rolling out the LED lamp.

Other potential customer segments:

Although we initially considered two more segments, rural vendors and lower-income electrified urban households, we discarded them for the following reasons:

Lower-Income Electrified Urban Households: This end-user segment is not attractive mainly because lower-income urban households often connect themselves to the grid illegally and don't generally need flashlights to venture outside their homes. Even homes that are connected legally to the grid do not spend a substantial amount of money in electricity.

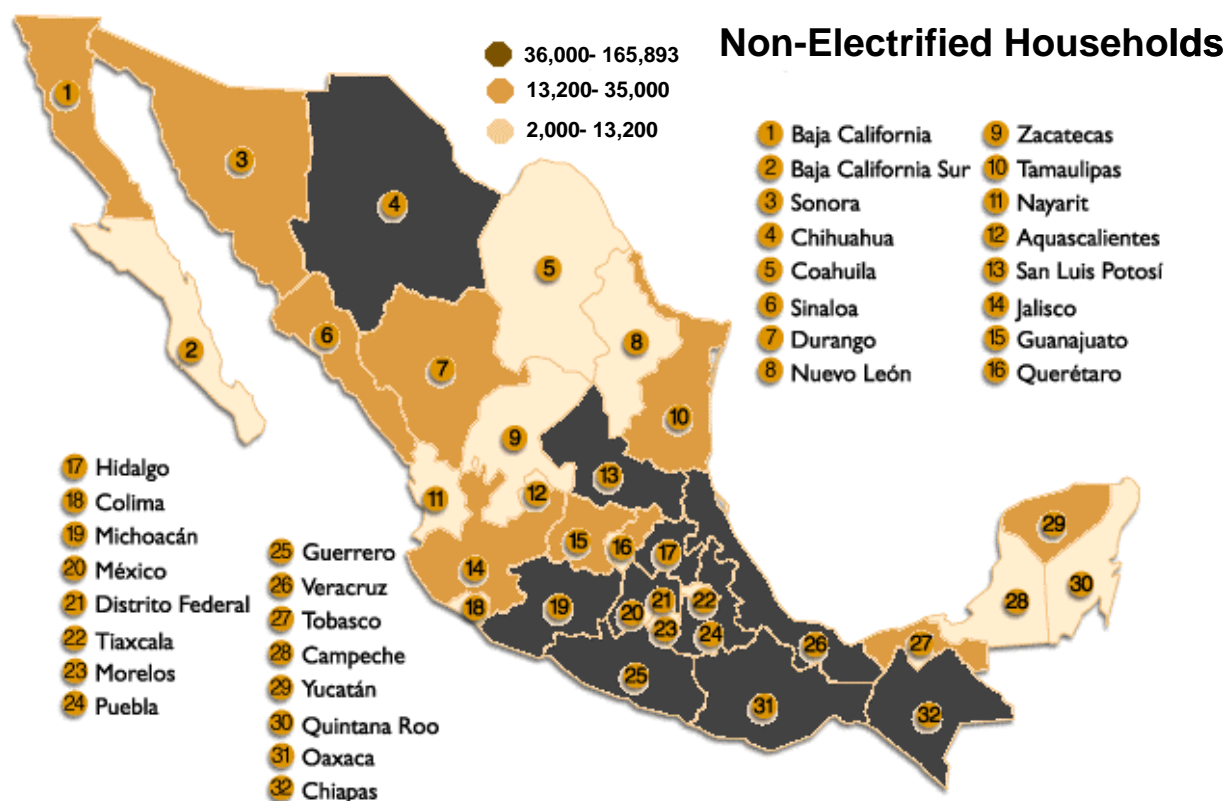
Rural Vendors: Many lower-income segments go once a week or more to shops located at a short or medium distance from their communities. These shops stock basic goods and other household items such as batteries. Although this segment provides fast marketing of our product, we did not choose them as a main target segment because most of these shops are already electrified through either solar home systems or generators.

3.2 Market Size and Trends

Rural Market

Mexico, which is one of the most electrified Latin American countries, still has around 1 million people without electricity in over 74,000 communities. 70,000 of these communities have a population of less than 100 people, and approximately 4,000 communities have a population of 100-2,500 people.⁷

Below is a map of Mexico showing the concentration of non-electrified households. The ten states colored in dark have the largest number of non-electrified households. The medium-colored are the next ten; and the lightest part of the map shows the 12 states with the least number of non-electrified households.⁸



The largest concentration of non-electrified households is in the Southern and Southeastern parts of the country, where most of the lowest income populations in Mexico are located. The Northern part of Mexico is heavily electrified, as the government has instituted a comprehensive electrification program to reach most areas. Currently, the government is undergoing an effort to reach some of these poorer communities, but this has proven more difficult than in the North because many lower-income Southern communities are located in remote areas.

⁷ Source: CONAE

⁸ Source: General Census of Population and Households 2000, Mexican Statistical Institute

The following table is a summary of all Mexican non-electrified households divided into the three sections:

No. of states	Average % Electrified	Total Households	Non-Electrified Households
10	91.6%	10,364,950	679,584
10	95.5%	6,124,821	220,784
12	96.6%	5,452,764	88,454
Total		21,942,535	988,822

The ten Mexican states with the largest number of non-electrified households are below⁹:

State	% Electrified	Total Households	Non-Electrified Households
Veracruz	89.4%	1,597,311	165,893
Oaxaca	87.3%	738,087	90,818
Chiapas	87.9%	778,845	89,986
Guerrero	89.3%	651,149	65,344
San Luis Potosí	88.5%	489,828	54,388
Puebla	94.8%	1,028,692	50,127
México	97.9%	2,743,144	46,682
Chihuahua	93.9%	733,379	41,659
Hidalgo	91.9%	491,482	38,631
Michoacán	95.4%	846,333	36,056

Approximately 50% of all non-electrified households are located in just 5 states: Veracruz, Oaxaca, Chiapas, Guerrero, and San Luis Potosí. Our plan is to reach to the states that are bolded in the table in the first five years. After a pilot program that will take place in Mexico State, the initial rollout phase will cover Veracruz, Puebla and Mexico State. In the following phase, we will reach Guerrero, Oaxaca, Chiapas, and San Luis Potosí.

Urban Market

In urban areas, we are targeting large urban retailers such as Wal-Mart and CCM. Even though the retail supermarket market in Mexico is very fragmented, with 80% of business concentrated in Mexico City, most of the large retailers in Mexico have a presence in large urban centers in Mexico.

The following table lists the retailers with a presence in the initial rollout states of México, Puebla, Veracruz, Oaxaca, Chiapas, Guerrero, and San Luis Potosí.

Stores in large urban centers	Mexico ¹⁰	Puebla	Veracruz	Oaxaca	Chiapas	Guerrero	San Luis Potosi
Wal-Mart	95	13	6	1	4	6	4
CCM	32	6	3	0	0	7	4
Gigante	48	4	6	3	2	0	3
Costco	7	0	1	0	0	1	0
Carrefour	7	0	0	0	0	0	1
Soriana	0	2	5	1	1	0	1

⁹ Some respondents did not specify electrified or non-electrified

¹⁰ Includes Mexico City

Rollout Illustration (Phase3): Location of End-Users by Municipality

Our plan is to market to municipalities that have the bigger concentrations of non-electrified households, to have efficient distribution strategies. The following maps of Mexico State, Puebla, and Veracruz highlight municipalities with 700- +1,000 non-electrified households. In all three states, these municipalities have about 60% of total non-electrified households.

Mexico Breakdown

28,019 Non-Electrified households comprise 60% of total

Location

- o West 26,706
- o East 1,313

Puebla Breakdown

26,644 Non-Electrified households comprise 60% of total

Location

- o North 15,724
- o Central 2,924
- o South 7,996

Veracruz Breakdown

98,946 Non-Electrified households comprise 60% of total

Location

- o North 55,048
- o Central 20,511
- o South 23,387

3.3 User Experience Summary

In order to understand our customer needs and lifestyle, we have done field research in poor rural areas in Mexico. Our main tools have been information collected from surveys and pictures as well as conversations with field experts.

The following is an average user scenario that illustrates the usage and value of the LED light product to our main target customer of rural non-electrified households.

A family in rural southern Mexico:

Our target family, the Perez's, lives in a small two room house – one room is a bedroom, the other acts as a living room and kitchen. Light comes in through several small windows during the day, and is supplied mainly by the fireplace and candles at night. They also use a small battery powered flashlight, but sparingly because batteries are costly.

In any normal day, the Perez's return from the fields and join the children and their grandmother in the house. Dinner is prepared as the children use the last daylight to study. The family enjoys a meal together as the sun sets, leaving them bathed in the flickering light of the fireplace. After dinner they clear the table and finish the chores in the dim light. They light some candles so the children can read their schoolbooks, as the adults discuss their day and make plans to move to the city.

The LED product:

We propose a small battery powered LED flashlight-style light with an adjustable stand. It is lightweight and portable. It can be used in a number of positions to light a room, or be carried outside for trips to the neighbors or to the outhouse. The light can be powered by the disposable batteries that the Perez's already use, but at a greatly reduced rate. Going forward, it will also be used with rechargeable batteries.

The Perez's found about the new lighting device from the owner of the village market, where they normally purchase flashlight batteries. They decided it would make sense for their family, and saved for three weeks to purchase the \$9.95 light. They realized it would save them money in the long run, as well as offer them opportunities to improve their children's' educations. With the light the father can also pursue his craft of hand painted pottery, which he has no time for since he works in the field all day.

3.4 Customer Financing

The following table ¹¹ illustrates monthly expenditures for communities of less than 2,500 people (including electrified and non-electrified areas):

Monthly Expenses (\$) FX: 10NP= \$1	Decile I	Decile II	Decile III	All Communities (of less than 2,500 people)
Food	33.17	45.01	53.42	177.86
Health	7.48	6.23	7.31	14.90
Transportation	7.51	10.83	10.26	32.55
Education, tourism, parties	6.44	8.71	9.82	22.51
Goods for home	5.98	7.47	9.70	16.26
Clothing	5.82	6.57	8.27	14.34
Misc.	5.22	5.60	7.88	16.54
Electricity and fuel	3.58	5.20	7.36	13.09
Total	\$75	\$96	\$114	\$308

Information from the field tells us that many rural lower-income non-electrified households spend up to \$6.00 per month in batteries ¹². The table above represents electrified and non-electrified households, so we are assuming that a budget expense for batteries draws from some of the categories listed above. Unfortunately, there is no available breakdown of household expenses for non-electrified households.

Paying for the product

As our value proposition states, the end-user will purchase of the LED product because he/she will subsequently save money on batteries and candles. The end-user can either save money or divert funds from the household budget to finance the purchase. Depending on vendor approval, he/she could also follow an installment plan where the cost of the light is amortized over a period of months.

ILumina does not envisage offering microfinance activities to the end consumer, however this is an option that could be explored further in the future.

¹¹ Source: 2000 National Survey of Income and Expenses, Mexican Statistical Institute. Includes electrified and non-electrified households. Survey information divides data into 10 sections (deciles). I have included the bottom three deciles, which represent the lowest- income segments in areas of less than 2,500 people.

¹² Source: Instituto de Investigaciones Electricas

3.5 Estimated Market Share and Sales

Rural Market: The opportunity to sell to rural end-users in Mexico is composed of a customer universe of ~989,000 non-electrified households. Our plan is to cover half of those customers by focusing in seven of the states with the highest rates of non-electrified households. Given our projections for expansion, we hope to capture the following percent of the total market per year:

Potential Market in Rural Areas (non-electrified households):

	Phases 1&2 Year 1	Phase 3 Year 2	Phase 4 Year 3	Phase 4 Year 4	Phase 4 Year 5	Phase 4 Year 6
	Mexico	+ Puebla, Veracruz	+Pot, Guerr, Oax, Chiap			
Mexico	46,682	46,682	46,682	46,682	46,682	46,682
Puebla		50,127	50,127	50,127	50,127	50,127
Veracruz		165,893	165,893	165,893	165,893	165,893
Guerrero			65,344	65,344	65,344	65,344
San Luis Potosi			54,388	54,388	54,388	54,388
Oaxaca			90,818	90,818	90,818	90,818
Chiapas			89,986	89,986	89,986	89,986
Total market size	46,682	262,702	563,238	563,238	563,238	563,238
Rural target sales	400	4,000	4,050	5,603	7,158	7,216
Penetration rate	0.86%	1.52%	0.72%	0.99%	1.27%	1.28%

Urban Market:

Potential Market in Urban Areas

	Phases 1&2 Year 1	Phase 3 Year 2	Phase 4 Year 3	Phase 4 Year 4	Phase 4 Year 5	Phase 4 Year 6
	WM (DF) Gigante (DF)		WM (Pue) Gigante (Pue) CF(DF)		WM (Vz) Gigante (Vz)	
WalMart (DF)	79,800	79,800	79,800	79,800	79,800	79,800
Gigante (DF)	40,320	40,320	40,320	40,320	40,320	40,320
WalMart (Puebla)			45,500	45,500	45,500	45,500
Gigante (Puebla)			3,360	3,360	3,360	3,360
Carrefour (DF)			5,880	5,880	5,880	5,880
Walmart (Veracruz)					5,040	5,040
Walmart (Veracruz)					5,040	5,040
Total market size	120,120	120,120	174,860	174,860	184,940	184,940
Urban target sales	200	9,000	9,300	12,630	15,993	16,392
Penetration rate	0%	7%	5%	7%	9%	9%

(*) Potential market = Number of lamps sold per month per store x Number of stores in each city x 12 months.

We assume each store can sell 70 lamps/month, or 16/week

4 The Economics of the Business

Our business model consists of selling a lamp that works with two D batteries and one Luxeon. It can be used as a flashlight for outdoors work as well as an indoors light for ambient purposes. Our lamp will initially have the following purposes:

- It replaces current flashlights
- It replaces candles and kerosene lamps used indoors
- It is an additional light to the existing ones

Our main value proposition is the fact that our lamp is a money saver. We have performed some calculations below that show that our lamp saves a substantial amount of money annually if used as a substitute of incandescent flashlights.

4.1 LED lamp vs. Incandescent Flashlights

Our fundamental premises are:

- In rural areas flashlights are used widely, and the monthly battery consumption is \$6¹³
- LED lamps consume 1/6 (1 Luxeon LED) or 1/3 (2 Luxeon LEDs) of the energy consumed by an incandescent flashlight.

Customer Economics:

	Incandescent	1 Luxeon	2 Luxeon
Cost per D battery (**)	\$ 0.70	\$ 0.70	\$ 0.70
Battery consumption relative to incandescents	100%	17%	33%
Cost of batteries /month (***)	\$ 6.00	\$ 1.00	\$ 2.00
No. batteries/month	8.57	1.43	2.86
Duration of 2 D batteries (hours)	5.00	30.00	15.00
Hours of light/month/flashlight	21.43	21.43	21.43
Cost of 1 flashlight	\$ -	\$ 9.95	\$ 12.00
Monthly cost of batteries	\$ 6.00	\$ 1.00	\$ 2.00
Expected life of flashlight (years)	5	5	5
Light expense (yr 1)	\$ -	\$ 9.95	\$ 12.00
Battery expense in 1 year	\$ 72.00	\$ 12.00	\$ 24.00
Battery savings in 1 year	\$ -	\$ 60.00	\$ 48.00
Total savings in 1 year	\$ -	\$ 50.05	\$ 36.00
Payback period		2 months	3 months

(*) Cells in yellow are working assumptions

(**) This is the approximate price of D batteries in Mexican towns. In rural areas, however, they can be up to 30% more expensive

(***) The \$6/month battery expense assumption comes from the Instituto de Investigaciones Electricas

¹³ Source: Instituto de Investigaciones Electricas.

Payback analysis:

The payback period for our lamp will be of less than two months, as can be seen below. The upfront and operating expenses of the lamp will be repaid out of the savings that it generates relative to an incandescent lamp. In our payback calculation below we have not included an acquisition cost for the incandescent lamp – we assume that the average family may have one at home already. If we had to include this cost – of approximately \$3 to \$5-, the payback of the LED lamp would be even faster.

	Month 0	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6	Month 12
Expenses incandescent	0	6	6	6	6	6	6	6
Cumulative cost incandescents		6	12	18	24	30	36	72
Expenses LED	9.95	1	1	1	1	1	1	1
Cumulative cost LED lamp		10.95	11.95	12.95	13.95	14.95	15.95	21.95
Savings obtained from LEDs		-4.95	0.05	5.05	10.05	15.05	20.05	50.05

Payback period = 2 months

Sensitivity Analysis:

From the table below we can see that one of the most important factors for the success of our lamp is the assumption that the monthly expense in batteries is \$6. The lower this figure gets, the more difficult it is for our lamp to save money.

Monthly cost of batteries		Total savings in		Payback
		yr 1		
100% of expected cost	\$ 6.00	\$	50.05	Month 2
66% of expected cost	\$ 4.00	\$	26.05	Month 4
33% of expected cost	\$ 2.00	\$	2.05	Month 10
17% of expected cost	\$ 1.00	\$	(9.95)	Never
Customer price of lamp				
33% lower price	\$ 6.33	\$	53.67	Month 2
50% higher	\$ 14.93	\$	40.08	Month 3
100% higher	\$ 19.90	\$	35.10	Month 4

4.2 LED lamp vs. kerosene lamps

Given the low cost of candles and kerosene relative to flashlights, it is not possible to derive savings from using our lamp as a substitute of these lighting tools. In this case, the value proposition of an LED lamp is a clean and safe light, without hazardous fumes and health risks, as well as a better quality source of illumination.

5 Product and Technical Details

Please see document produced by the Technology Team

6 Distribution Plan

6.1 The Supply Chain

The chart below shows the value chain of the product, going from its manufacturing to the distributors, retailers and up to the consumer. We have detailed the margins that each of the participants in this chain is expected to retain. The model shows a downward trend in the evolution in the cost of the LED bulb. We expect that as LEDs become a mainstream technology, prices will decrease by 30% in 5 years (with iLumina capturing it in its margin). This is an extremely important assumption given that with current LED prices we would be unable to reach profitability.

	PHASES 1 & 2	PHASE 3	PHASE 4	PHASE 4	PHASE 4	PHASE 4
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cost of components	4.70	4.57	4.44	4.31	4.20	4.09
1 LED price decreases by 30% in 6 yrs (5% each yr)	2.70	2.57	2.44	2.31	2.20	2.09
Rest of components	2.00	2.00	2.00	2.00	2.00	2.00
Shipment to assembler	0.10	0.10	0.10	0.10	0.10	0.10
Assembly	0.50	0.50	0.50	0.50	0.50	0.50
Transport to HQ	0.10	0.10	0.10	0.10	0.10	0.10
Manufacturing Cost to iLumina	5.40	5.27	5.14	5.01	4.90	4.79
Transport to rural distributors	0.30	0.30	0.30	0.30	0.30	0.30
Sale price to distribs	6.95	6.95	6.95	6.95	6.95	6.95
Profit to iLumina	1.25	1.39	1.51	1.64	1.75	1.86
iLumina Margin %	18%	20%	22%	24%	25%	27%
Sale price to retailer	8.45	8.45	8.45	8.45	8.45	8.45
Profit for Distributor	1.50	1.50	1.50	1.50	1.50	1.50
Distributor Margin %	18%	18%	18%	18%	18%	18%
Sale price to consumer	9.95	9.95	9.95	9.95	9.95	9.95
Profit for Retailer	1.50	1.50	1.50	1.50	1.50	1.50
Retailer Margin %	15%	15%	15%	15%	15%	15%

The value chain expected for year 1 is as follows:

Manufacturer: iLumina's local manufacturer can build a light for a cost of \$4.90, including shipping. After adding on a margin of \$0.50, the manufacturer sells the light to iLumina for \$5.40.

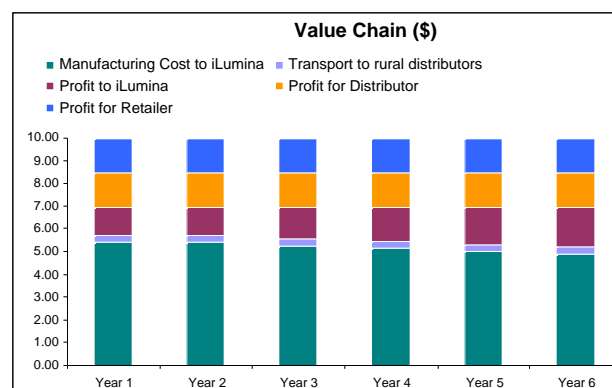
iLumina: iLumina buys the light for \$5.40 and sells it to the distributor for \$6.95, giving iLumina a 18% margin.

Distributor: The distributor in turn sells the light it purchased for \$6.95 to a retailer for \$8.45, giving the distributor a 18% margin.

Retail: The retail outlet buys a light for \$8.45 and turns the light around selling it to a customer for \$9.95, giving the retailer a 15% margin.

The viability of this value chain will be tested during the pilot program, and adjustments will be made as necessary.

It is important to note that we have the opportunity of introducing price discrimination between our more affluent urban clients and the rural ones. We have decided not to do it at this stage. However the decision could be



revisited if the requests of the value chain are not as estimated in order to secure sustainability.

6.2 Distribution Strategy

Manufacturing

ILumina will partner with a low cost, high quality manufacturer in Mexico to create its lights. Mexican manufacturing is amongst the highest quality most affordable manufacturing in the world and it is believed that few cost benefits and economies of scale would be realized by manufacturing the product outside of Mexico. The manufacturer will be responsible for fabricating the light casing and circuit board, but will receive its LED light bulbs from Lumileds. It will also assemble the light and be responsible for the packaging as well as any literature that will accompany the light. After assembling the light the manufacturer will ship the light initially directly to ILumina but as quantities sold and production runs increase some of these shipments may start heading directly to distributors or even retailers. Minimum production runs will be in lots of 5,000.

ILumina

ILumina will maintain a warehouse/storage facility where it will stockpile its inventory of lights. ILumina's value in the supply chain is in holding adequate stock of the product to timely fulfill orders. ILumina will also be able to negotiate with its manufacturers to hold inventory on their premises. As sales and production numbers become more settled, it will be easier to time and manage production runs and inventory-carrying costs can be reduced. ILumina will ship its inventory to distributors, retailers, and non-profit partnerships when they cannot be sourced from the manufacturing center or when it is inappropriate to ship from the manufacturer.

Distribution

Distributors will either receive shipments directly from the manufacturing company or from ILumina. The origin of the location will depend completely on the timing of the order. If the distributor times the order around production runs, it can get a cheaper price for the product and direct shipment. If the distributor's order does not line up with the production runs (i.e. it has run out of stock and needs 1,000 lights in 24 hours), then it will receive its shipment from ILumina's warehouse. The distributor will order lights in lots of 1,000 and will responsible for its own inventory management.

Urban Retailers

Urban retailers will either receive their shipments from their distributor, from ILumina, or from ILumina's manufacturer. The origin of this shipment will depend upon both the timing of the order and the relationship that has been established. For example, large urban retail chains may develop a relationship with ILumina where they can time their orders and order them in large enough lots that for them it makes sense to get the product sourced directly from the manufacturer. Smaller urban retailers would receive the product through their relationship with their distributor.

Rural Retailers

Rural retailers will either receive their shipments from their distributor, from ILumina, or from ILumina's manufacturer. The origin of this shipment will depend upon both the timing of the order and the relationship that has been established. For example, non-profit or government entities may develop a relationship with ILumina where they can time their orders and order them in large enough lots that for

them it makes sense to get the product sourced directly from the manufacturer. Smaller rural retailers would receive the product through their relationship with their distributor.

Key Partners

Manufacturing: Much work still needs to be done in order to identify key strategic partners in manufacturing. Relationships will be established by seeking out current flashlight manufacturers in Mexico and through additional industry research. Some potential partnerships include Solectron and Lumileds.

Distributors: Initially ILumina plans to work with two rural distributors. Partnerships with the appropriate distributors will be crucial to the success of ILumina. Although a couple of distributors have been identified and contacted, it is too early to say that these distributors are the best partnerships for ILumina. A potential distribution partner could be a large consumer goods distributor like Bimbo.

Government and Non-profit organizations: Building relationships with non-profit and government organizations will be a key to the success of reaching the most needy households. As such, at least two such partnerships must be formed within the first year. Diconsa and FMDR are examples of two organizations that might be striving for the same super-ordinate goals.

Large Retail Outlets: Large retail outlets will be key to the ultimate success of the product, however, these partnerships will most likely be formed after year 1, so their significance is minimal at the moment. Examples of large retail outlet ILumina would try to work with include CCM and Wal-Mart.

6.3 Key Distribution Steps

The keys to creating the distribution network as outlined above are as follows:

Manufacturer Determination: First and foremost, ILumina needs to decide not only on a manufacturer but also where this manufacturer should be located. Although ILumina is currently suggesting that manufacturing be implemented in Mexico, not enough information has been accumulated to demonstrate that Mexico is definitely the cheapest and most effective place to manufacture a high quality product. In order to determine this information an RFQ must be sent out to both Mexican and other global manufacturers so that true cost estimates can be derived and the financials can be evaluated properly. As manufacturing is such a key component of ILumina's offering, ILumina also needs to be certain that the product sourcing is of a high caliber.

Distributor Relationships: After making a manufacturing determination, ILumina needs to find two large-scale rural distributors and two urban distributors who will be committed to selling ILumina lights. These distributors need to work with an extensive network of retailers, and have enough open communication with their retailers so that the retailer actually becomes informed of new product offerings and is actively sold them. Although the seeds that may grow in distributor relationships are being planted now, the key to being successful at signing on distributors will hinge upon the relationships that the VP of Sales and the CEO of ILumina can cultivate with these distributors.

Large Retail Outlets: After entering into a couple distribution relationships, getting into large retail outlets will be the next key. As with the distributor relationships outlined above, much of the success of this initiative will hinge upon the relationships that the VP of Sales and the CEO of ILumina can cultivate with large retail outlets.

6.4 Local Logistics

After shop owners receive their product, they will be responsible for selling it to end-users. ILumina will provide shop owners product specifications and benefits to help them better understand the product. Rural shop owners will have a small inventory of product. As products sell out over time they will order more products through their distributor in the same manner they currently order additional product from their distributor. Customers will purchase the product in the same manner they currently purchase products from the retailer and would take the product home in the same manner they currently bring products home.

Maintenance and repair

Shop owners would not be responsible for maintenance or repair of the lights. Shop owners will have a 90 day warranty on the product from the date of a shipments arrival at a shopkeeper's store. If the product is defective or breaks within these 90 days, ILumina will replace the light at no cost. Although ILumina will not repair lights, it will provide shopkeepers and local electricians with information (in the form of brochures) on how to repair ILumina lights.

6.5 Management of Distribution

Being a sales and marketing company, a good portion of ILumina's time and energy will go into managing the distribution chain. These management responsibilities will fall between the CEO and the VP of Sales. For a greater understanding of how these responsibilities will be split, please refer to Section 9-Organization.

7 Marketing Plan

7.1 Overall Marketing Strategy

As ILumina will be a sales and marketing company, successful implementation and execution of its marketing strategy will be critical to its survival. Due to minimum economies of scale initially, ILumina's product will have to be priced a little higher than its competition. This means ILumina needs to clearly articulate its benefits to consumers in order to attract purchase intent.

Although ILumina's primary target market will be rural households that do not have electricity, ILumina plans to sell its products in both rural and urban areas. This is being done for three reasons:

- Rural families perceive products that are sold exclusively in rural areas as lower quality goods- goods that were not high quality enough to be sold in the city, and so companies have no choice but to offload them in rural areas. Conversely they perceive goods that are popular in urban areas, especially if they are found in large chains like Wal-Mart, to be of high quality. As ILumina wants its brand to be perceived as high quality we believe it is imperative that we distribute our product in urban areas in order to get that association.
- As most rural people travel to urban areas at least once every quarter, there is a good chance our target consumer will either learn about a product or purchase a product while in an urban area. By placing its products in urban centers ILumina not only increase its ability to sell products to rural customers, but it may also create pull for the product, whereby rural customers are asking their local shopkeeper if they have our product. This pull can help expand our distribution network.
- ILumina's target market is small and dispersed. It would be very difficult and costly to create a distribution network that reaches only our target market and still reach enough economies of scale to make the company sustainable. In order to be sustainable, ILumina needs to thus create a product that is accessible to the entire population, and allow urban sales to help subsidize company growth.

Product Differentiation

In order to differentiate ILumina's product from others in the marketplace, ILumina will focus on innovation. Packaging and other marketing communications need to stress the state of the art technology this light of the future uses. As consumers have indicated that US products represent both high quality and technologically innovative products, ILumina's products should make it clear that the product was designed or developed in the US.

Brand Management

ILumina should position itself as a company that cares. Although few Mexican consumers may make in store purchase decisions based upon the fact that ILumina's goal is to provide sufficient lighting to homes that do not have electricity, this goal provides a wonderful publicity vehicle for the brand that can create great buzz and free marketing. The end goal of "lighting up the world" can lead to media coverage, non-profit, government, or socially minded (i.e. The Body Shop) corporations seeking out the product in large quantities, as well as general consumer brand recognition. Also as Mexican consumers currently have somewhat negative associations with corporate Mexico, clearly articulating our goal of "lighting up the world" will not only differentiate our corporation, but it also may help win the trust and minds of consumers.

7.2 Pricing

Price

It is estimated that the product will cost around \$6 to make. Given a 25% distributor margin, transportation costs, taxes, and a retailer mark-up, the end price rises to \$9.95. In order for the product to be affordable it needs to be less than \$10, so we will do whatever we can to keep the product under the \$10 level. We collected some information from the field regarding pricing and our potential customers mentioned they would be happy to pay from \$5 to \$8 for our lamp. We believe that this supports our price of \$9.95, as people tend to underestimate the prices that they would pay in this type of surveys.

Although ILumina foresees itself moving forward with a single pricing schema, it is worth noting that as the target customer and distribution channels are different in rural and urban areas, there lies potential to perform some price discrimination and charge urban customers a higher price. Urban customers have in general more disposable income and would see a price over \$10 as less of a barrier. That being said, more research needs to be done to understand the effects of a dual pricing strategy before one could be implemented.

Promotion

In rural communities, people tend to rely very much on the recommendations of shopkeepers when making their purchasing decisions. As such, when ILumina enters new areas, we plan to offer shopkeepers a free trial product, so that they can test out our product and become familiar with our light. We can also leverage this opportunity to receive feedback about our light from shop owners. The expected effect is that shopkeepers will enjoy the benefits of the light and thereby recommend its use to customers who are in need of a light. In the large stores in urban areas, no immediate promotions are planned.

7.3 Sales Tactics**Sales Organization**

ILumina's sales staff will consist primarily of a VP of Sales, with the CEO having secondary sales duties (see Section 9 for more details).

Sales Strategy

The sales organization will need to sell to a variety of different distributors and retailers at the same time. The initial goal for the pilot program is to get 2 rural distributors/retailers and 2 urban distributors/retailers signed for a 3-month test run of the product. The initial strategy is to target large rural distributors and middle of the line urban retailers (or the distributors that work with middle of the line urban retailers) who currently sell products into the stores ILumina wishes to place its product. The ILumina sales team would pitch them the product leveraging our product's quality as well as innovation and if appropriate our company's social mission. If this test run proves successful, the idea is to expand to a greater number of retailers by either increasing the number of distributors or increasing our reach within those distributor networks. After the pilot test, ILumina will make a greater push to sell its product in superstores like Wal-Mart and Target. ILumina is very wary to start the pilot in large stores such as these, because not only would it be difficult to dictate the terms of the pilot, but also a poor pilot showing might make it impossible for ILumina's products to return to the shelves.

7.4 Service and Warranty Policies

Service Policy

It is not cost effective to train individuals throughout the country on how to fix a \$9.95 light, however ILumina can provide literature on how to fix the lights to rural shopkeepers and electricians.

Warranty Policy

Consumers in Mexico are not too concerned about warranty policies, so providing one is not a major concern. However, as a matter of principle and because ILumina is a company that cares, it will provide a ninety day in-store warranty to shop owners, where broken or non-functional lights will be replaced free of charge. ILumina will also provide a discount to shop owners who return lights at the end of their lifetime. Lights returned to headquarters at the end of their lifetime will result in a discount on that shopkeeper's next order.

7.5 Advertising and Promotion

Proposed Method

Because ILumina will not have the financial means necessary to perform large scale advertising and promotional campaigns, ILumina will focus much of its advertising and promotional efforts on non-traditional marketing. It is believed that ILumina can create a recognized brand name for itself through these mediums, be much more cost effective, and provide a differentiated brand offering.

Pilot Plan

During the pilot plan, ILumina plans to utilize three main forms of advertising and promotion:

- *Media Outlets Blitz-* ILumina plans to leverage its position as a socially minded company and aggressively pursue media coverage of its planned market entry and socially minded activities. As Mexican media outlets have already expressed interest in writing articles on the company, we plan to utilize this interest to generate more interest and utilize this publicity to build brand awareness. This material could then be used to help legitimize the company in the minds of distributors and retailers. It may also create pull from retailers who wish to be involved with our social cause.
- *Shopkeeper Trial Program-* In rural areas ILumina will give shopkeepers a free trial light, so that they can test the product for themselves. This program will be marketed through the help of ILumina distributors. By offering shopkeepers the use of the light, ILumina hopes to diminish some of the barriers that may be associated with placing a new product in a store and increase the likelihood that once a shop owner tries the light, the shop owner will recommend the light to customers in need of new lighting. ILumina plans to offer 200 of these lights out to shop owners and expects 100 of the shop owners to become resellers of the light.
- *Light Up the World Program-* ILumina plans to partner with a local non-profit or governmental office to administer the *Light Up the World Program*. The premise of the program is that Mexican citizens, US citizens, or foundations can donate money to the *Light Up the World Program*. For every \$10 donation, the local non-profit or government organization will make sure that a light is given to a family that does not have reliable electricity. For a \$20 donation, it can be arranged that ILumina ships a light directly to a specified family. This would allow Mexicans and Mexican-Americans to purchase lights for their family members who may be in need of such lighting. The expected result of this program would be to increase the means of ILumina to place lights in the households of those

people who need it the most. In addition it would initiate partnerships with organizations that have similar interests and allow each side to leverage the other side's abilities in order to reach some common goals. This program would be advertised through articles in media outlets, through marketing efforts of the partner organization and through targeted fundraising efforts in both the US and Mexico. During the Pilot Phase ILumina expects 50 lights to be donated.

As no special advertising or promotions will be performed in urban areas, initially in these areas, sales will mainly stem from packaging, with pricing and word of mouth also affecting consumer behavior. ILumina's packaging in urban stores will focus on four things:

- its value proposition- its 6x reduction in battery costs
- its technology and innovation
- its social mission- ILumina - "the company that will light up the world"

Plan Year 2 and Out

ILumina's plans beyond its Pilot Phase deal will expansion. ILumina plans to expand its marketing efforts, concentrating a greater deal of effort on urban advertising, while attempting to reach rural consumers through a greater network of distributors as well as socially minded partnerships. More common means of advertising may be attempted, however if ILumina was successful using non-traditional means of marketing, it would be advisable for it to continue concentrating its marketing efforts in that arena. ILumina should also develop a web presence, utilizing its *Light Up The World Program*.

8 Manufacturing and Operations Plan

8.1 *Operating cycle*

ILumina's manufacturing plant will manufacture its product in lots of 5,000. In the first couple of years this will mean that there will only be a couple of runs per year. It is expected that it will take less than two weeks for a decent sized manufacturing plant to perform an operating cycle. An operating cycle will commence when all parts are received and the manufacturer is given the go ahead to start assembly. Assembly will consist of the manufacturer piecing together the 12 pieces of the light and depending upon the manufacturers capabilities, could also consist of some fabrication and molding.

8.2 *Geographical Location of Manufacturing*

ILumina plans to manufacture its product in Mexico outside of Mexico City. Manufacturing and assembly capabilities in Mexico are very high and it is believed that due to both the small lot sizes and the expenses that shipping the product internationally would incur, that manufacturing would be cheaper in Mexico.

8.3 *Contract Manufacturing Model*

ILumina plans to contract out the manufacturing by sending an RFQ to both Mexican and other global manufacturers. Based upon the best package that is available in terms of price, quality, ability to meet ILumina's needs, and flexibility, ILumina plans to select the appropriate manufacturer.

8.4 *Strategy and Plans*

ILumina plans to contract a 2-3 year deal with a manufacturer who would be willing to produce lights for ILumina. For the first year ILumina envisions needing 1000 lights and for subsequent years between 10,000 and 20,000. The strategy is to build the lights in lots of 5,000, which based upon demand should be run between 2-3 times a year. The manufacturer will be kept abreast of sales progress and light sales and will be notified at least 45 days in advance of changes to the manufacturing schedule. The manufacturer will be measured based upon the quality of its product, defined by the amount of returned lights ILumina receives from customers and distributors, as well as the ability to meet the required demand in an appropriate response manner.

9 Organization

9.1 Organization Structure

ILumina will be incorporated as a for-profit company that operates out of Mexico. It will be a free standing sales and marketing organization whose job it is to find the means to market and distribute the goods that ILumina and Light Up the World Global design, create, and produce. The main goal of the organization is to figure out how to create a sustainable company that can provide lighting for the poor. In order to do this the company needs to:

- Understand the target customers, their needs, and desires
- Successfully market the product to end users
- Build a brand users recognize and can trust
- Sell the products in urban markets to create pull from rural users
- Build relationships with rural shop owners
- Sell the product to local distributors who can place the product in a large network of stores

With these goals in mind, the initial Light Up the World Mexico organization should consist of a staff of three individuals:

- CEO with heavy marketing, distribution background
- Marketing Associate- in charge of marketing product to end users and understanding the customer
- VP Sales- in charge of selling into urban centers, large superstores, as well as cultivating relationships with distributors and among small rural stores

These individuals will all operate out of the same headquarters office in central Mexico. No regional or local offices will be needed as the organization's size, purpose, and goals do not dictate the added expense. Further employee and office expansion will be contingent on sales success and needs.

9.2 Organizational Development Strategy

Employee Recruitment

ILumina will recruit a team of experienced individuals who have an entrepreneurial mindset and who are keen to see our social mission of getting lighting to individuals without light come to fruition. ILumina will first hire a CEO by scouring our contacts and their networks for individuals who would be able to run such an organization. The job may also be posted or a headhunter may be hired in order to obtain this individual. After hiring this individual, the CEO would be in charge of hiring his VP of Sales, who would ideally have experience selling to distributors and large chains, as well as his Marketing Associate, who would most likely be a young recent college grad. The method of hiring these individuals would be at the discretion of the Board and CEO.

Employee Training

As a small organization, ILumina has a very limited training budget and its needs will be highly dependent on the skills of the individuals hired. As such, training will be on an as necessary basis, on the discretion of the CEO and perhaps Board. It is advisable that the team undergo a training session on the discovery driven planning methodology before launching as a company.

Employee Retention

Employee retention will be very much predicated on our company's success and the working relationship that is formulated between our three employees. Initially no formal programs will be put in place with the sole goal of retention, however, new employees will be given options which vest over a three year time period, which will serve not only as a form of compensation, but also as a vehicle to drive short term retention.

Knowledge Transfer

The CEO will be in charge of collecting, filtering, and relaying information between ILumina and other divisions of Light Up the World Foundation. At the minimum there should be a monthly conference call and a yearly meeting in which matters of relevance, best practices, and organizational direction can be shared.

9.3 Units and Functions within the Business***Light Up the World Global***

Light Up the World Foundation will provide support as necessary or as agreed upon by the Foundation and ILumina. Light Up the World can purchase an ownership stake in ILumina, and will have a seat on ILumina's Board of Directors. Light Up the World's voice and control over ILumina will be through its seat on the Board.

ILumina

ILumina will be in charge of understanding the local customer, how to market to this customer, and how to distribute the product to this customer. ILumina will also be responsible for all decisions regarding operations within Mexico. Any decision to expand operations beyond the scope of Mexico will be at the discretion of ILumina's Board of Directors.

9.4 Key Roles within the Business***Chief Executive Officer***

The CEO of ILumina will be responsible for the operations of the company. This individual will be charged with profit responsibility, day-to-day operations decisions, strategic planning, partnership cultivation, corporate financing, human resources decisions, marketing strategy, and the general management of the organization. The CEO will be compensated with a \$18,000 base salary, with a bonus dependent upon the company's ability to meet sales goals, and also with a 15% ownership stake in the company which vests over 3 years.

Vice President of Sales

The VP of Sales will be responsible for the general selling of ILumina's products to distributors and organizations throughout Mexico. This individual will be charged with cultivating relationships with organizations which can place ILumina's product on shelves, with cultivating relationships with shop owners, and for any day to day operations associated with the sales of ILumina products. The VP of Sales will be compensated with a \$6,000 base salary, with a commission structure which is based upon a

combination of the VP of Sales ability to meet both mutually agreed upon sales goals as well as the company's ability to meet its sales goals, and also with a 5% ownership stake in the company which vests over 3 years.

Marketing Associate

The Marketing Associate will be responsible for understanding the customer as well as the execution of the defined marketing strategy. This individual will be charged with marketing tasks such as creating the packaging, advertising, displays, literature for shop owners, and for any day to day operations associated with marketing, as well as the customer related tasks of interviewing end users, providing end user customer service, and suggesting product improvements. The Marketing Associate will be compensated with a \$5,000 base salary, with a bonus which will be driven off of the ability of the company to meet sales goals, and also with a 2% ownership stake in the company which vests over 3 years.

9.5 Board of Directors

The Board of Directors will contain 5 seats, with one of them belonging to the Light Up the World Foundation. The composition of the Board will be decided during the initial funding round.

9.6 Supporting Advisors

Many of our current advisors have expressed interest in remaining a supporting advisor for ILumina. If you are currently reading this and you are interested in remaining a supporting advisor in the future, please let us know, and we will add your name to this section.

10 Overall Schedule

We expect ILumina to be present in seven states within four years. The implementation of the project will be a four-phase process:

<u>Phase 1</u>	<u>Phase 2</u>	<u>Phase 3</u>	<u>Phase 4</u>
Development	Pilot Program	Initial Rollout	Southern Expansion
Manufacturing agreements Request for quotes Design, marketing agreements Distributor agreements Customer research	Small roll-out Location: <ul style="list-style-type: none"> ▪ Mexico DF ▪ State of Mexico 	Potential rural market of +263,000 HHs <ul style="list-style-type: none"> ▪ Mexico ▪ Puebla ▪ Veracruz 	Potential market of +560,000 households <ul style="list-style-type: none"> ▪ Oaxaca ▪ Chiapas ▪ Guerrero ▪ S. Luis Potosi
<i>Duration: 6 months</i>	<i>Duration: 6 months</i>	<i>Duration: 12 months</i>	<i>Duration: 24 months</i>

Phase 1: Project Development

During this phase ILumina will work on building the management team that will implement the project, as well as building the value chain through agreements with suppliers, manufacturers and distributors. This phase will also include the finalization of the lamp design, testing of prototypes, testing of manufacturing and launching of first batches. The following areas will be thoroughly tested through the pilot phase:

Market Opportunity: Verify that an opportunity really exists in rural Mexico. Identify who the appropriate target households should be in both rural and urban Mexico. Analyze the attractiveness of different market segments. Quantify the actual market size and the projected sales volumes for each year following launch. Identifying specific towns for pilot program

Consumer Needs: Confirm the needs of the rural family for light, the situations in which they require light and how they use it. Perform in-depth field surveys and customer empathy study. Examine where light is most valuable to the family and how can their lives be further enhanced by the use of an LED light. Test multiple product designs that trade off light output against price to understand price sensitivity and the expected positioning of an LED light product.

Pricing: Validate the price points at which the LED solution is attractive to the target user group and test the sensitivity to this price relative to competitive products (e.g. kerosene, flashlight, incandescent light, candles). Understand the user's ability to pay for the product and the preferred location of purchase and method for payment.

Product Design: Understand in detail the design functionality and features required to meet the needs of the users. Identify the necessary attributes of the product to make it successful and the thresholds for light output, battery life, reliability relative to cost of the lighting solution. Test prototypes and finalize lamp design. Launch 1st manufacturing of product.

Supply Chain: Develop relationships with suppliers, retailer, the government, and social agencies. Finalize supply chain of organization. Enter into distribution agreements and partnerships with governmental as well as social agencies

Organizational Structure and Roles: Establish an office in Mexico DF. Recruit management team, CEO, salesperson, and marketing associate. Verify that this is the appropriate organizational structure for ILumina. Test the relationship with Light up the World to see how each side can reach the same superordinate goal. Understand the realistic productivity of the management team.

Phase 2: Pilot Program

During this phase ILumina will undertake marketing, distribution and selling activities in small scale in order to test the level of acceptance of our product, identify areas for improvement, and continue iterating the company strategy.

The pilot program will take place in the State of Mexico and will cover our two customer segments:

- Rural areas – State of Mexico
- Urban areas - Mexico DF

ILumina's goals for this phase are:

- To prepare ILumina with distribution and marketing mechanisms to sell 13,000 lamps in year 3 and expand to 13,350 lamps in year 4.
- To sell 600 lamps –300 of them in rural areas and another 300 in urban areas- in six months.
- To expand analysis of competing products
- To expand marketing research
- To expand field tests of product
- To introduce test marketing, by undertaking non-traditional marketing activities and test their result, as specified in section 7.5.
- To deliver final product design
- To prepare the ground for phase 3 in terms of finding the suitable distributors and stores to target in the states of Mexico, Puebla and Veracruz
- To initiate conversations with governmental and nonprofit agencies regarding potential partnerships and collaborations.
- To educate rural retailers on benefits of the product

Phase 3: Initial Rollout

Once the pilot program indicates to us that our product finds customer acceptance and our distribution and marketing strategies have been tested successfully, our next step will consist in rolling out the program. The states chosen for this phase, Mexico, Puebla and Veracruz, contain some of the highest unelectrified areas in the country. At the same time are close enough to the capital and thus, are relatively easy to reach.

At this point the CEO will focus its attention in direct sales activities in the urban and rural areas. He will also secure deals with rural national distributors as well as develop relationships with governmental agencies such as Diconsa and Sedesol.

Phase 4: Southern Expansion

In Phase 4 ILumina will scale up to cover four more states: Guerrero, Oaxaca, Chiapas and San Luis Potosi. At this point the company will already be generating revenues, and will have acquired enough management and sector specific experience to be able to speed up the scaling up process. During this phase the management team is expected to increase in one person, and operations will be still centralized in Mexico DF. At this point, ILumina will try to enter into regional distribution agreements while keeping the previous local ones.

11 Partners and Key Relationships

11.1 *Key supply relationships*

Lumileds

Lumileds Lighting is the world's leading manufacturer of high-power LEDs and a pioneer in the use of solid-state lighting solutions for everyday purposes including automotive lighting, traffic signaling, signage, LCD backlighting and general lighting. The company's Luxeon Power Light Sources are the first to combine the brightness of conventional lighting with the small footprint, long life and other advantages of LEDs. The company also supplies core LED material and LED packaging, manufacturing billions of LEDs annually. The company is headquartered in San Jose, California, with operations in the Netherlands and Malaysia.

LUTW's current partnership with Lumileds enables the Foundation to purchase Luxeon 1-Watt LEDs at a discount, allowing ILumina to keep the price low, and increasing its affordability to the end-user. As long as LUTW continues with its mission to market the LED products to need-based populations, it is expected Lumileds will continue providing LEDs at a discount. This partnership is the key component of the Foundation's product strategy.

11.2 *Key distribution partners*

The following are organizations that have provided key advice and guidance for developing a distribution and marketing strategy for the LED product. Some may become potential partners and/or advisors in the distribution of the LED product.

Diconsa: Diconsa is an agency of Mexico's Social Development Agency (SEDESOL). Diconsa is charged with providing subsidized basic goods and household items to need-based, rural populations, with an average savings of 6% over regular market prices. The agency has 274 rural warehouses that supply 23,000 shops located mainly in the lowest-income segments throughout the country. With its substantial operational and vehicle fleet, Diconsa distributes its goods near many of our target non-electrified areas.

Cerveceria Cuauhtemoc, Grupo Bimbo: These organizations have well-organized distribution networks throughout the country and may provide us with a way to reach the areas located in our roll-out plan.

11.3 *Government partners and relationships*

The following are government agencies and organizations that have been very helpful in providing advice. Some may become potential partners and/or advisors in rolling out the LED product.

CONAE: CONAE is a Mexican government entity whose mission is to design, promote, and foment activities around the efficient use of energy and the use of renewable energy sources. CONAE will bring technical assistance to the public, private and social sectors as well as promote and help create guidelines as to the use and dissemination of energy efficiency.

SEDESOL: SEDESOL is the government agency tasked with promotion social development in Mexico. Its mission is, through urban and rural development, to improve the social, economic, and political conditions of the poorest segments of the rural and urban population. The agency has been helpful in identifying the populations that might benefit from our LED Lamp.

FMDR: The FMDR is a non-profit organization funded by the private sector whose mission is to contribute to the development of low-income rural communities. The FMDR focuses on two main rural economic units: small rural farms run by families, and rural cooperative enterprises created to better consolidate supply and demand.

12 Critical Risks and Assumptions

The following are the most important assumptions that we have used for our Discovery Driven Planning methodology. Our business plan relies on them, and as such, they should be validated continuously.

Product / Design Assumptions

- Our 1 Luxeon lamp will consume 1/6 of energy than the incandescent ones
- Duration of our lamp: minimum of 5 years.

Market acceptance is dependant upon high reliability of the product, as word of mouth will quickly spread as to whether the product operates reliably or not. Data from the initial pilot phase will be used to test reliability.

Sales and End- User Assumptions

- The lamp will be attractive if priced at \$9.95. If this price turns out to be too expensive, we have several mechanisms to boost demand:
 - Developing a lower cost version of the lantern for rural customers
 - Price differentiation: lowering the price of the lamp the rural areas and increasing it in the urban stores.
 - Partnerships with governmental and non-profit agencies to help subsidize lamp
- Current expense in batteries: \$6/month at \$0.70 per battery. An important challenge will be to introduce our lamp in households that cannot, at the moment, afford to use battery flashlights and rely on candles and kerosene for their lighting needs.

Assumptions manufacturing

- ILumina will be able to outsource the assembly in Mexico.
- The assembly cost per lamp is \$5.40. Assembler makes a margin of 10%.
- The cost of LEDs will decrease by 30% in 5 years.

Distribution and Marketing Assumptions

- There is a risk that retailers make more money off batteries than lights and believe by selling the lights they will hamper a consistent revenue stream. If this is the case, we would need to negotiate higher gross margins with them.

Assumptions Rural Distributors

- 6 visits to rural stores per week, half of which end in a sale (the rest are for marketing, follow up and relationship maintenance purposes).
- Average sale to store is 5 lamps.
- Will sell 30 lamps a week, or 1500 lamps per year.
- Gross margin of 18.52% (buy lamps at \$6.75, sell them at \$8)

Assumptions Urban Distributors

- Each distributor covers 5 stores
- Each distributor sells 250 lamps per month, or 3000 lamps per year

Assumptions Rural Stores

- Will sell 50 lamps per year (1 lamp a week)
- Gross margin of 18% (buys lamps at \$8.45, sells them at \$9.95)

Assumptions Urban Stores

- Will sell 250 lamps per year (5 lamps a week)
- Same gross margin of 18.75% (buys lamps at \$8, sells them at \$9.50)

13 The Financial Model

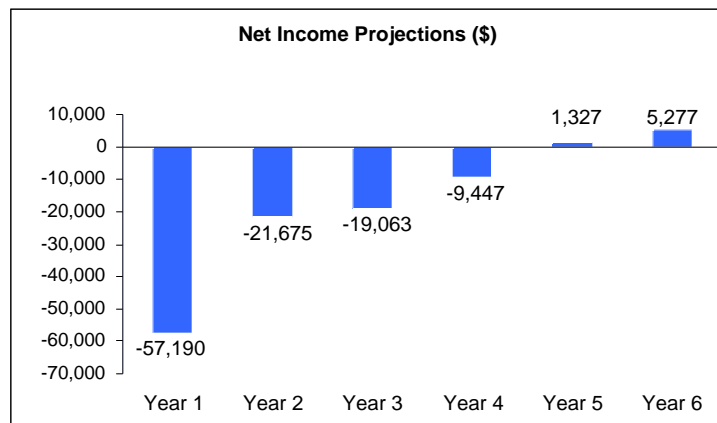
13.1 Profit Potential and Durability

ILumina believes that there is true potential for having a profitable business model in this industry. Given that we are trying to sell the lamp at prices that will allow people with scarce resources to acquire it, ILumina's strategy will be to retain slim margins for itself. For this reason, its profitability will be driven by volume.

With our current estimates, we will start with net losses of \$57,000 in year one, and will achieve cumulative losses of \$108,000 in four years before getting to profitable numbers in year 5.

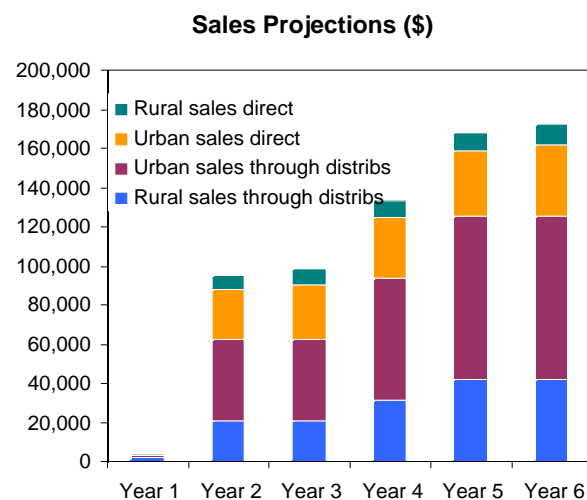
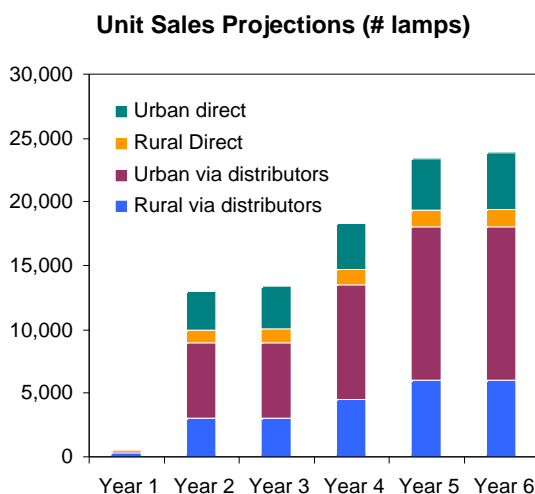
From year 5 onwards our expectation is to rely on a growing stream of cash flow that will lead our company to sustainability.

Our projections include only proportional scale-ups of a business that will have been tested repeatedly, not only during the pilot program phase but also during phase 3 (implementation in Mexico, Puebla and Veracruz).



13.2 Sales Projections

ILumina will use 4 main marketing channels: 1) rural distributors, 2) urban distributors, 3) direct sales to urban stores, 4) direct sales to rural stores. We foresee our unit and dollar sales to grow according with the graphs below:

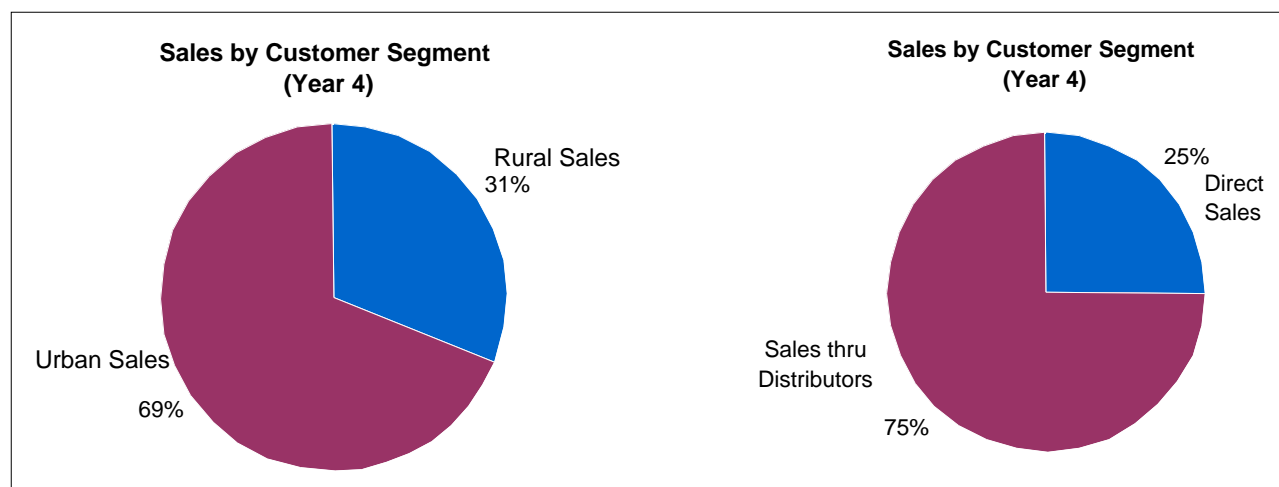


	PHASES 1 & 2	PHASE 3	PHASE 4	PHASE 4	PHASE 4	PHASE 4
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
TOTAL UNIT SALES	600	13,000	13,350	18,233	23,151	23,608
SALES THROUGH DISTRIBUTORS						
Rural via distributors	300	3,000	3,000	4,500	6,000	6,000
Urban via distributors	200	6,000	6,000	9,000	12,000	12,000
NO. DISTRIBUTORS						
Rural	1	2	2	3	4	4
Urban	1	2	2	3	4	4
DIRECT SALES						
Rural Direct	100	1,000	1,050	1,103	1,158	1,216
Urban direct		3,000	3,300	3,630	3,993	4,392

The sales figures include the following assumptions:

- Each rural distributor will sell 1500 lamps /year¹⁴.
- Each urban distributor will sell 3000 lamps /year¹⁵.
- ILumina will initially secure distribution agreements with 2 urban and 2 rural distributors, growing to 4 for each type in years 5 and 6.
- ILumina will initially be able to sell 1000 lamps/year to rural stores, and increase this figure by 5% every year. A potential customer that we would like to approach here would be Diconsa.
- ILumina will be able to sell 3000 lamps/year to mainstream stores such as Walmart, and will increase this figure annually by 10%.

Below is a breakdown of expected sales in year 4 by customer segment and by distribution channel. The reason why we project two thirds of our sales in urban areas is driven by our need to achieve big volumes that allow us to become profitable.



¹⁴ This figure comes from the following assumptions: each distributor makes 6 visits a week. Half of them end in a sale. The average sale to the rural store is 10 lamps. This is 30 lamps a week. If we consider 50 working weeks in a year, we get 1500 lamps per rural distributor.

¹⁵ This assumes: A store can sell 250 lamps a year, and each distributor can cover at minimum 5 urban stores. This makes 3000 lamps a year per urban distributor. We believe this is a conservative estimate.

13.3 Income Statement

	PHASES 1 & 2	PHASE 3	PHASE 4	PHASE 4	PHASE 4	PHASE 4
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Revenues	4,170	94,850	97,733	132,161	166,886	170,663
rural sales through distribs	2,085	20,850	20,850	31,275	41,700	41,700
urban sales through distribs	1,390	41,700	41,700	62,550	83,400	83,400
urban sales direct	0	25,350	27,885	30,674	33,741	37,115
rural sales direct	695	6,950	7,298	7,662	8,045	8,448
Expenses	61,360	116,525	116,796	141,607	165,559	165,386
Lamps sold	3,240	68,445	68,576	91,434	113,419	113,063
Transport cost to headquarters	60	1,300	1,335	1,823	2,315	2,361
Transport cost to dist & retailers	180	3,900	4,005	5,470	6,945	7,082
Salaries						
Admin Staff	5,000	5,000	5,000	5,000	5,000	5,000
Marketing Staff	6,000	6,000	6,000	6,000	6,000	6,000
CEO	18,000	18,000	18,000	18,000	18,000	18,000
Advertising costs	2,000	2,000	2,000	2,000	2,000	2,000
Communication (tel + internet)	680	680	680	680	680	680
Travel	10,000	2,000	2,000	2,000	2,000	2,000
Space (annual)	8,000	8,000	8,000	8,000	8,000	8,000
Utilities	200	200	200	200	200	200
Office material	8,000	1,000	1,000	1,000	1,000	1,000
Pre-Tax income	-57,190	-21,675	-19,063	-9,447	1,327	5,277
Taxes@35% (*)	0	0	0	0	0	0
NET INCOME	-57,190	-21,675	-19,063	-9,447	1,327	5,277

(*) We assume accumulated losses during years 1 to 4 offset tax payments in years 5 and 6

13.4 Balance Sheet

Initial Cash	\$200,000	PHASES 1 & 2	PHASE 3	PHASE 4	PHASE 4	PHASE 4	PHASE 4
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Assets							
Cash & Equivalents	142,810	121,135	102,072	92,625	93,953	99,230	
Accts Recievables	0	0	0	0	0	0	
Inventories	0	0	0	0	0	0	
Total Assets	142,810	121,135	102,072	92,625	93,953	99,230	
Liabilities							
Accts Payable	0	0	0	0	0	0	
STD	0	0	0	0	0	0	
Total Liabilities	0	0	0	0	0	0	
Stockholders Equity	142,810	121,135	102,072	92,625	93,953	99,230	
Liabilities + Equity	142,810	121,135	102,072	92,625	93,953	99,230	
Cash Schedule							
Beginning Cash	200,000	142,810	121,135	102,072	92,625	93,953	
Net Income	(57,190)	(21,675)	(19,063)	(9,447)	1,327	5,277	
Ending Cash	142,810	121,135	102,072	92,625	93,953	99,230	
Equity Schedule							
Beginning Equity	200,000	142,810	121,135	102,072	92,625	93,953	
New Equity	0	0	0	0	0	0	
Net Income	(57,190)	(21,675)	(19,063)	(9,447)	1,327	5,277	
Ending Equity	142,810	121,135	102,072	92,625	93,953	99,230	

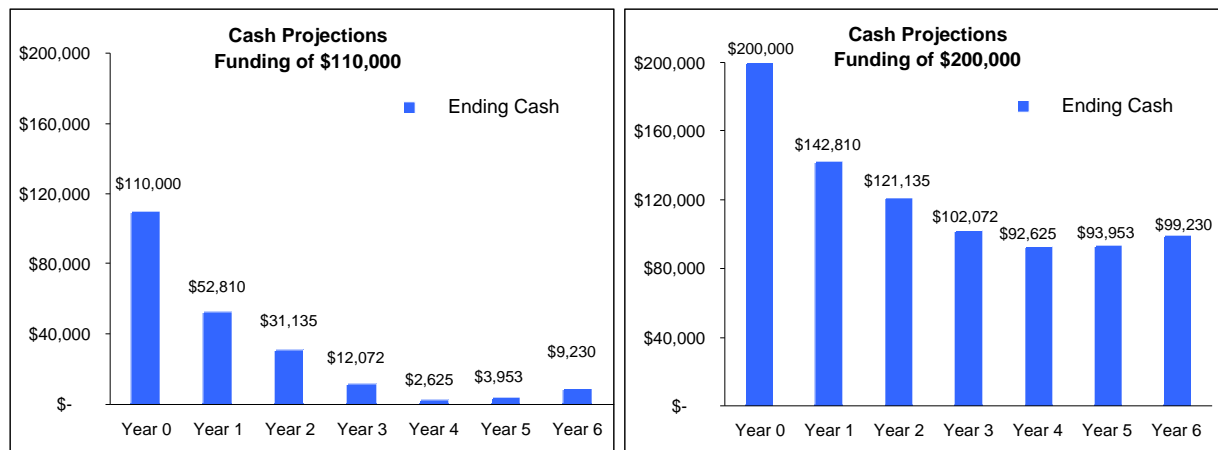
13.5 Cash Flow Analysis

For simplicity purposes we have assumed that all our income and expenses reflect cash inflows and outflows, and thus, our Income Statement serves also as a cash flow analysis. Please note that we have not depreciated any setup costs or capital investments.

13.6 Funding Requirements

According to our assumptions, ILumina will require a strict minimum of \$110,000 to become sustainable in year 5. The exhibit below on the left shows the cash evolution of the company starting from a cash level of \$110,000.

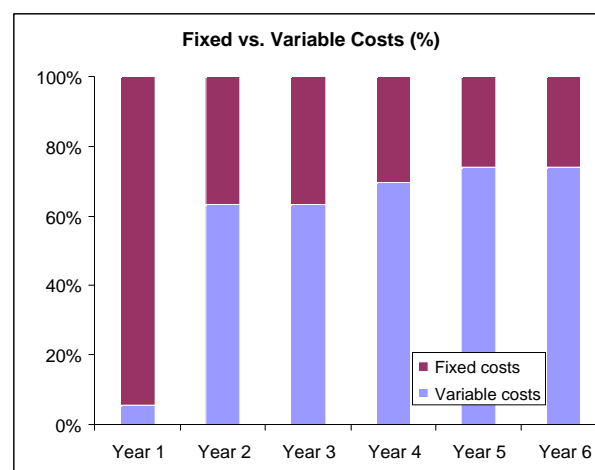
However, it would be best for ILumina to have a cash cushion in case there are unexpected expenses not modeled in our estimates. The exhibit on the right shows the company's projected cash evolution with \$200,000 of initial funding.



13.7 Fixed vs. Variable Costs

The chart on the left and the table on the next page show ILumina's fixed and variable costs. It can be noted the high percentage of fixed costs during year one. This reflects the set up expenses that we will incur during year one (office furniture, computer systems, two vans, free samples etc), as well as the almost total lack of sales during the pilot program phase (during the six first months sales will be zero, during the following six sales will be 600 units).

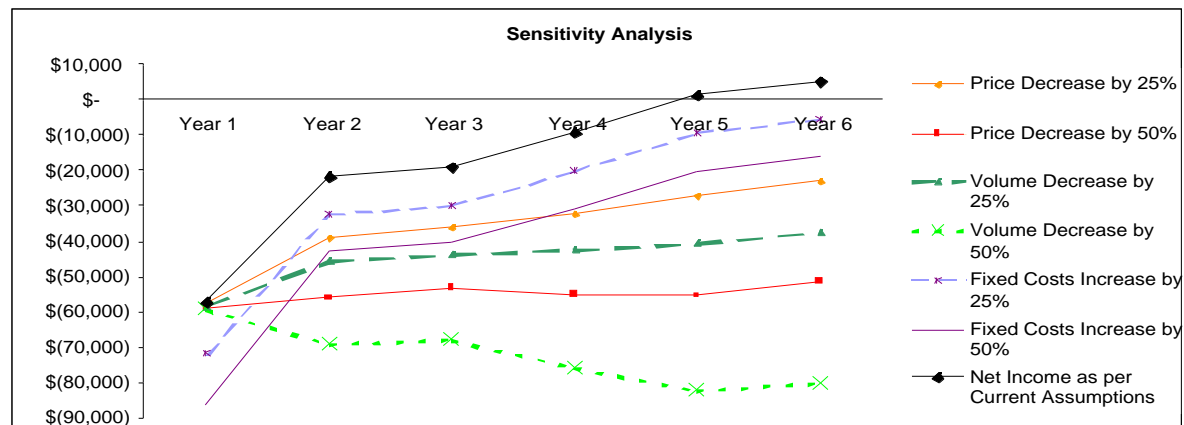
One ILumina enters the rollout phase variable costs surpass fixed costs. Our aim is to keep fixed costs to a minimum, outsourcing many of the activities, such as manufacturing or distribution, as we believe this is the least risky approach.



	PHASES 1 & 2	PHASE 3	PHASE 4	PHASE 4	PHASE 4	PHASE 4
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Revenues	4,170	94,850	97,733	132,161	166,886	170,663
Variable costs						
Lamps sold	3,240	68,445	68,576	91,434	113,419	113,063
Transport cost to headquarters	60	1,300	1,335	1,823	2,315	2,361
Transport cost to dist & retailers	180	3,900	4,005	5,470	6,945	7,082
Variable costs	3,480	73,645	73,916	98,727	122,679	122,506
Contribution margin	690	21,205	23,817	33,433	44,207	48,157
% Variable costs / Total costs	6%	63%	63%	70%	74%	74%
Fixed costs						
Salaries	29,000	29,000	29,000	29,000	29,000	29,000
Advertising costs	2,000	2,000	2,000	2,000	2,000	2,000
Communication (tel + internet)	680	680	680	680	680	680
Travel	10,000	2,000	2,000	2,000	2,000	2,000
Space (annual)	8,000	8,000	8,000	8,000	8,000	8,000
Utilities	200	200	200	200	200	200
Office material	8,000	1,000	1,000	1,000	1,000	1,000
Fixed costs	57,880	42,880	42,880	42,880	42,880	42,880
Net income margin	(57,190)	(21,675)	(19,063)	(9,447)	1,327	5,277
% Fixed costs / Total costs	94%	37%	37%	30%	26%	26%

13.8 Sensitivity Analysis

SENSITIVITY ANALYSIS	PHASES 1 & 2	PHASE 3	PHASE 4	PHASE 4	PHASE 4	PHASE 4
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Net Income as per Current Assumptions	(57,190)	(21,675)	(19,063)	(9,447)	1,327	5,277
Revenues						
Price Decrease by 25%	(58,000)	(38,786)	(36,207)	(32,305)	(27,027)	(22,989)
Price Decrease by 50%	(58,810)	(55,898)	(53,351)	(55,164)	(55,382)	(51,254)
Volume Decrease by 25%	(58,233)	(45,388)	(43,496)	(42,487)	(40,394)	(37,389)
Volume Decrease by 50%	(59,275)	(69,100)	(67,929)	(75,527)	(82,116)	(80,054)
Expenses						
Fixed Costs Increase by 25%	(71,660)	(32,395)	(29,783)	(20,167)	(9,393)	(5,443)
Fixed Costs Increase by 50%	(86,130)	(43,115)	(40,503)	(30,887)	(20,113)	(16,163)



14 Appendices

14.1 Key Contacts in the Country

Organization	Name	E-Mail	Expertise
Accion	Monica Brand	mbrand@accion.org	Micro-finance
Berkeley University	Shannon Graham	ShannonGraham@mba.berkeley.edu shannonmgramham@yahoo.com	Off-grid energy programs
CONAE	Margarito Sanchez	msm@conae.gob.mx	Renewable energies
CONAE	Odon de Buen	demofilo@prodigy.net.mx	Renewable energies
Diconsa	Gonzalo Guerra	+1-52-555-666-5303	Rural distribution
Diconsa	Carlos Martínez Balboa	martinezb@diconsa.gob.mx	Rural distribution
FMDR	Alfredo Espinosa	alfredo@fmdr.org.mx	Social services
FMDR	Mauricio G. de la Cardena	mgarciadlc@terra.com.mx	Social services
FMDR	Antonio Reyes	antonio_r@fmdr.org.mx	Social services
Hewlett Foundation	CR Hibbs	CR.Hibbs@hewlett.org	Non-profit sector
IIE	Jaime Agredano	agredano@iie.org.mx	Social services
MEPDA	Maria Flores Letelier	mfltelier@mepbda.com	Social services
New Mexico State University	Robert Foster	rfoster@nmsu.edu	Solar energy, rural customers
Oaxaca government	Fernando Mimiaga Sosa	fernandomimiaga@prodigy.net.mx	Government services
Oaxaca government	Julio Alberto Velazquez	julioenergia@hotmail.com	Government services
Patrimonio Hoy	Hector Ureta	hector.ureta@cemex.com	Services to low-income segments
Patrimonio Hoy	Gabriel Alexander	gabriel.alexander@cemex.com	Marketing to low-income segments
PROTEGO	Antonio Souza	asouza@protego.com.mx	Energy distribution
Sandia Labs	Michael Ross	mpross@sandia.gov	Technology
SEDESOL	Craig Davis	cdavis@sedesol.gob.mx	Low-income segments
SEDESOL	Lourdes Sanchez	lsanchezm@sedesol.gob.mx	Indigenous populations
Solar Dev. Group	Alfonso Martinez	amtzan@prodigy.net.mx	PV panels
TEC	Mary Sandoval	mary_sandoval@itesm.mx	Adult-edcation centers
United Way Mexico	Beverly Hall	funido@netmex.com	Non-profit sector

Assumptions						
Primary	Secondary					
		Unit of Analysis = Customer Household	Dollar	Financials	Year 1	Years 2-5
A1	B1	Lamp purchases	1.00	Expense		
A2		Lamp price to Customer Household	\$9.95	Lamp	\$9.95	\$0.00
		Hours of light per charge 4 D batteries)	10.00	Charging	\$12.00	\$12.00
A3		Battery charges per month (1 lux lamp)	1.43	Total Expense	\$21.95	\$12.00
A4		Price per battery charge	\$0.70			
	B2	Years of life for light	5.00	Comparison Cost	\$72.00	\$72.00
	B3	Price for repair of light	\$0.00	Annual Saving	\$50.05	\$60.00
	B4	Monthly Expenditure for Lighting Now	\$6.00			

Unit of Analysis = Urban Store					
		Unit of Analysis = Urban Store	Dollar		
A7	B6	Number of Households Served / week	5.00		
		Number of Households Served / year	250.00		
		Lamps in Reserve	62.50		
		Total Lamps	312.50		
A8		Cost Per Lamp to rural store	\$8.45		
	B9	Margin for distributor	17.75%		
	B10	Int. Rate on Financed Amount (ann)	5.00%		
	B11	Cost of not selling other goods	\$0.00		

Financials		Year 1		Years 2-5	
Revenue					
Lamps		\$3,109.38		\$3,109.38	
Total Revenue			\$3,109.38		\$3,109.38
Expense					
Lamps		\$2,640.63		\$2,640.63	
Interest expense		\$132.03		\$132.03	
Opport cost		\$0.00		\$0.00	
Total Expense			\$2,772.66		\$2,772.66
Net Income			\$336.72		\$336.72
Net Margin			12%		12%
NPV					
Discount Rate		5.00%			
Year 1		1.00	\$336.72		
Years 2-5		3.55	\$1,193.99		
NPV at Year 1			\$1,530.71		

Unit of Analysis = Rural Distributor				Dollar	Financials	Year 1	Years 2-5
A9		Number of Households Served / year		1500.00	Revenue		
	B12	Lamps in Use		1500.00	Lamps	\$14,925.00	\$14,925.00
		Lamps in Reserve		0.00	Total Revenue	\$14,925.00	\$14,925.00
		Total Lamps		1500.00			
A10		Cost Per Lamp to Distributor		\$6.95	Expense		
	B13	Margin for distributor		21.58%	Lamps	\$10,425.00	\$10,425.00
		Overhead			Interest	\$0.00	\$0.00
	B15	Int. Rate on Financed Amount (ann)		0.00%	Transport	\$300.00	\$300.00
	B16	Incremental transport costs (gasoline)		\$300.00	Opport cost	\$0.00	\$0.00
	B17	Cost of not selling other goods		\$0.00	Retail space	\$0.00	\$0.00
	B18	Repair Costs (annual)		\$128.53	Repair	\$128.53	\$128.53
					Total Expense	\$10,853.53	\$10,853.53
					Net Income	\$4,071.47	\$4,071.47
					Net Margin	38%	38%
					NPV		
					Discount Rate	0.00%	
					Year 1	1.00	\$4,071.47
					Years 2-5	4.00	\$16,285.89
					NPV at Year 1		\$20,357.36

Unit of Analysis = Urban Distributor				Dollar	Financials	Year 1	Years 2-5
A11		Number of Households Served / year		3000.00	Revenue		
	B19	Lamps in Use		3000.00	Lamps	\$25,350.00	\$25,350.00
		Lamps in Reserve		0.00	Total Revenue	\$25,350.00	\$25,350.00
		Total Lamps		3000.00			
A12		Cost Per Lamp to Distributor		\$6.95	Expense		
	B20	Margin for distributor		21.58%	Lamps	\$20,850.00	\$20,850.00
		Overhead			Interest	\$0.00	\$0.00
	B21	Int. Rate on Financed Amount (ann)		0.00%	Transport	\$600.00	\$600.00
	B22	Incremental transport costs (gasoline)		\$600.00	Opport cost	\$0.00	\$0.00
	B23	Cost of not selling other goods		\$0.00	Retail space	\$0.00	\$0.00
	B24	Repair Costs (annual)		\$257.05	Repair	\$257.05	\$257.05
					Total Expense	\$21,707.05	\$21,707.05
					Net Income	\$3,642.95	\$3,642.95
					Net Margin	17%	17%
					NPV		
					Discount Rate	0.00%	
					Year 1	1.00	\$3,642.95
					Years 2-5	4.00	\$14,571.78
					NPV at Year 1		\$18,214.73

Unit of Analysis = Office				Dollar	Financials	Year 1	Years 2-5
		Number of Rural Distributors Served		2.00	Revenue		
		Number of Urban Distributors Served		2.00	Lamps sold through distributors	\$62,550.00	\$62,550.00
		Number of Distributors Served		4.00	Lamps sold direct	\$25,350.00	\$25,350.00
		No. retailers served directly per sales person		5.00	Total Revenue	\$87,900.00	\$87,900.00
		No. sales persons selling lamps		1.00	Expense		
		Total lamps sold through distributors		9000.00	Lamps sold	\$56,400.00	\$56,400.00
		Total lamps sold by Ilumina (direct)		3000.00			
		No. lamps sold directly to each retailer		600.00			
		Cost of manufacturing 1 lamp in Mexico		\$4.70			
		Cost of transporting from assembler to our office (per lamp)		\$0.10			
B25		Cost of transporting from our office to distributor (per lamp)		0.30			\$0.00
B26		Number of Marketing Officers		2.00	Transport cost to headquarters	\$1,200.00	\$1,200.00
		Annual Advertising Costs		\$2,000.00	Transport cost to dist & retailers	\$3,600.00	\$3,600.00
		Overhead			Salaries		
		Administrators		1.00	Admin Staff	\$5,000.00	\$5,000.00
		Monthly Salary Administrators		\$5,000.00	Marketing Staff	\$6,000.00	\$6,000.00
		Sales persons		1.00	CEO	\$18,000.00	\$18,000.00
		Monthly Salary Sales Persons		\$6,000.00			
		CEO / CFO		1.00	Advertising costs	\$2,000.00	\$2,000.00
		Annual Salary CEO		\$18,000.00	Communication (tel + internet)	\$680.00	\$680.00
B27		Communication (tel + internet)		\$680.00	Travel	\$10,000.00	\$2,000.00
B28		Travel		\$10,000.00	Space (annual)	\$5,000.00	\$5,000.00
B29		Space (annual)		\$5,000.00	Utilities	\$200.00	200
B30		Utilities		\$200.00	Office material	\$8,000.00	1000
					Total Expense	\$116,080.00	\$101,080.00
					Net Income	-\$28,180.00	-\$13,180.00

14.3 Questionnaires

Encuesta para la Universidad de Stanford

En nombre de la Universidad de Stanford, le agradecemos profundamente la gran ayuda que nos presta al rellenar esta encuesta.

Nombre y apellidos

Poblacion.....

Fecha.....

1. Es usted hombre o mujer?
2. Tiene electricidad en su casa?
3. Cual es su trabajo?
4. Quien le ha proporcionado esta encuesta?
5. Cuantas personas viven en su casa? Cuantos hombres / mujeres / niños?
6. Cuantas formas de Iluminacion (lamparas, antorchas, velas, linternas, etc.) tiene en su casa?
 - Donde se encuentran estas luces?
 - Para que las usa?
 - Cual es su fuente de energia?
 - Son portables?
 - Cual es su favorita, o la que mas usa?
 - Como las mejoraria?
7. Que tipo de combustible o fuente de energia usa mas habitualmente? Que precios paga?

Keroseno	si	no	precio
Propano	si	no	precio
Velas	si	no	precio
Madera	si	no	precio
Otras (especifique)	si	no	precio

8. Que precio pagaria por una lampara que no consuma combustible?
9. Usaria su lampara para otras cosas si ILuminara mas? Para que?
10. Alguna vez saca sus lamparas fuera de casa? Para que lo hace? que tan frecuentemente?
11. Quien compra las lamparas en su familia, los hombres o las mujeres? Y el combustible?
12. Si usa linternas, cada cuanto tiempo compra pilas nuevas?
13. Tiene enchufes electricos en casa?
14. Cuanto dinero calcula que gasta en electricidad?
15. Cuanto dinero calcula que gasta en ILuminacion?
16. Que porcentaje representa esa cantidad relativa a sus ingresos?
17. En que lugares suele realizar sus compras?
18. En concreto, donde compra los siguientes bienes?

Linternas	_____
Lamparas	_____
Focos	_____
Keroseno	_____
Velas	_____
Madera	_____
Otras (especifique)	_____

19. Usa alguna ILuminacion no electrica? Las podria describir?

20. Cuantas horas al dia usa ILuminacion?
21. Para que otras cosas le gustaria usar ILuminacion?
22. Podria ganar mas dinero si tuviera mas ILuminacion? Como?
23. Podria mejorar su calidad de vida con mas ILuminacion? Como?
24. Si recibiera ahora 20 dolares, para que los usaria?
25. Recibe habitualmente dinero de Estados Unidos?
26. Si tuviera que comprar una nueva television, de donde obtendria el dinero?
27. Que objeto de su casa considera mas valioso?
28. Que objeto de su casa considera mas resistente?

Por favor, rellene esta tabla contestando a las preguntas de la izquierda para cada una de las distintas formas de ILuminacion que utilice habitualmente.

	ILUMINACION 1	ILUM. 2	ILUM. 3	ILUM. 4
Descripcion de cada lampara u objeto que proporcione ILuminacion				
Cuantas horas al dia usa cada ILuminacion?				
Cual es el uso tipico de cada una?				
A que hora del dia usa cada lampara?				
Cuanto combustible usa esta lampara al mes?				
Cuanto vale esta lampara?				

Otras lamparas:

.....

Otros comentarios que quiera mencionar:

.....

.....

.....

.....

.....

INSTRUCCIONES PARA EL COLABORADOR LOCAL

1. Dele las tres luces a una casa.

2. Digales:
 - Que el primer día usen las tres luces
 - En los siguientes tres días, usen solo una de las luces cada día.
 - Después de estos días, que usen cualquier luz que quieran.
3. Vuelva a la casa después de cuatro o cinco días.
4. Hagales las preguntas y escriba las respuestas.
5. Anote toda la información que sea posible, aunque no le parezca que sea muy útil.
6. Envíenos las respuestas con el sobre que le incluimos en este paquete.
7. Puede quedarse con las luces o dárselas a la familia, no las necesitamos de vuelta.

PREGUNTAS SOBRE EL USO DE LAS LUCES

Cuales son las cosas que le dan luz ahora (electricas o no-electricas)?

Diganos como usa cada una de las luces que le dimos y cualquier problema que tuvo al usarlas.

Cual de estas luces le fué más útil y porqué?

Cuanto pagaría por cada una de estas luces? (para tener una idea del valor comparativo - que podría comprar en el mercado por esta cantidad?)

Existen otras fuentes de luz que le gustaría tener? Piensa que las obtendrá?

Dibuje su luz ideal:

Por favor circule la luz que mejor conteste las siguientes preguntas...				Por favor haga cualquier comentario que quisiera hacer.
Que luz es menos cara?	A	B	C	
Que luz es más cara?	A	B	C	
Si pudiera tener una de las luces, cual sería?	A	B	C	
Que luz es la más brillante?	A	B	C	
Cual da la luz mas placentera?	A	B	C	
Que luz es la mas útil para usted?	A	B	C	
Cuanta gente puede usar cada luz a la misma vez?	A	B	C	
A que tiempo del día le gusta usar cada luz?	A	B	C	
Para que deberes puede usar cada luz?	A	B	C	
Cocinar?	A	B	C	
Leer?	A	B	C	
Juegos?	A	B	C	
Trabajar?	A	B	C	
Otras aplicaciones _____	A	B	C	
Otras aplicaciones _____	A	B	C	

14.4 *Selling Through Agents in Mexico*

Some American firms sell their products through a sales agent. Usually, a sales agent is a freelancer. However, some Mexican firms are interested in serving as sales agents for American firms. This channel can be efficient for reaching the smaller cities or more remote locations of the country.

Selection of the appropriate agent or distributor requires time and effort. Though there may be many qualified candidates, U.S. firms should use high standards in selecting the agent/distributor. Since most Mexican firms are selling into a limited area, U.S. companies should consider appointing representatives in multiple cities to broaden distribution, and rarely, if ever, grant an exclusive, national agreement. It is important to develop a close working relationship with the appointed agent/distributor. Providing appropriate training, product support, and timely supply of spare parts is critical to your chances for success. There are no indemnity laws to prevent a company from canceling an agent or distributor agreement, but the cancellation clause should include specifics; this clause should be free of vague language. Sales performance clauses in agent/distributor agreements are permitted and failure to meet established standards can be a reasonable cause for contract cancellation.

Before signing the agent/distributor agreement, make certain that the person understands the terms and conditions and the relationship to be developed. Many relationships are strained because insufficient time is invested in developing a full understanding of what is expected.

The Commercial Service and other organizations, such as the American Chamber of Commerce and U.S. State government offices, maintain lists of Mexican agents/distributors, manufacturers, Mexican government offices, and private sector trade organizations. After identifying a suitable agent/distributor, the U.S. exporter is encouraged to conduct a commercial background check on the Mexican firm, such as offered by the U.S. Commerce Department's International Company Profile (ICP) report.

If the product is new to the market, or if the market is extremely competitive, advertising and other promotional support should be negotiated in detail with your representative. Product and industry knowledge, track record, enthusiasm and commitment should be weighted heavily. Service and price are extremely important to Mexican buyers. The U.S. exporter should also schedule annual visits of Mexican personnel to the U.S. companies for training. Other factors to consider include financing, as the commercial and industrial sectors' resources are limited due to high interest rates. Joint venture arrangements should also be investigated to strengthen market penetration. Direct marketing and telemarketing are still evolving as a marketing strategy but they are gaining in popularity and scope.

14.5 Advertising in Mexico

There is a wide range of broadcast and print media available in Mexico. There are approximately 20.7 million homes in Mexico. Ninety five percent, or 19.7 million of these homes have electric power. Around 86 percent of homes have at least one radio and 87 percent of homes have at least one TV. Radio has the widest coverage, and there are 384 FM and 758 AM radio stations throughout Mexico. Most of the stations broadcast 24 hours a day.

There are eight TV networks that have national coverage, and more than 636 local or regional TV stations. "Televisa" and "Television Azteca" are the largest standard broadcast TV networks. In addition, there are 564 cable TV systems offering services to around 3.0 million subscribers nationwide. The largest cable TV company is Cablevision, owned by Televisa, which has 407,000 subscribers in Mexico City. Next in importance is Megacable with 324,363 subscribers, Cablemar with 279,048, and Acotel with 118,563 subscribers. There are also two Spanish language direct-to-home satellite networks, Multivision and Sky.

According to data provided by the National Chamber of the Publishing Industry, more than 420 newspapers and 1600 magazines are published in Mexico. Many magazines are industry specific. Advertising in Mexican print media is usually more expensive than in the United States. Advertising rates generally approximate those of large international cities.

Advertising on billboards is also common in Mexico. There are more than 100 billboard companies in Mexico offering various kinds of billboards ranging from plain paper billboards to electronically controlled billboards. According to data provided by Medios Publicitarios Mexicanos, there are over 131 advertising agencies, 40 market research companies, 8 direct mailing companies, 21 sales promotion agencies and 7 direct marketing agencies.

According to the National Chamber of the Radio and TV Industry, expenditures for advertising in Mexico, including public and private expenses, reached about 2.8 billion dollars in the year 2001. Of this, 72 percent was focused on TV, 11 percent on radio, 12 percent in print media, 1 percent in Internet, and 5 percent in other advertising resources.

Successful ad campaigns are generally described as having a local touch, which may include both linguistic and cultural considerations. Exporters may wish to seek assistance from one of the many full-service advertising agencies in Mexico City, many of which are branches of U.S. and foreign firms.

Key Contacts for Advertising:

Camara Mexican de la Industria Editorial
(Mexican Chamber of the Publishing Industry)
Holanda No. 13
Col. San Diego Churubusco
04120 Mexico, D.F.
Tel: (011-52) 5688-2221, 5688-2434
Fax: (011-52) 5604-4347, 5604-3147
Contact: Lic. Enrique Perez Claudin, General Director
Lic. Alicia Velazquez, Statistics Coordinator
E-mail: admon@caniem.com
Web: www.caniem.com

Asociacion de Editores de Periodicos Diarios de la Republica Mexicana, A.C.
(Mexican Association of Newspaper Publishers)
Paseo de la Reforma no. 122, piso 10-C
Col. Juarez

06600 Mexico, D.F.
Tel: (011-52) 5705-1870, 5592-1785
Fax: (011-52) 5592-1785
Contact: Rafael Ruano Uribe, General Manager

Camara Nacional de la Industria de la Television por Cable
(National Chamber of the Cable TV Industry)
Monte Alban No. 281
Col. Narvarte
03020 Mexico, D.F.
Tel: (011-52) 5682-0298, 5669-3691
Fax: (011-52) 5682-0881, 5682-3750
Contact: Lic. Jorge Cuevas Renaud, President
Srita. Mirsa Avila, Editorial Manager
E-mail: tv-cable@canitec.org
Web: www.canitec.org

Asociacion Mexicana de Agencias de Publicidad, A.C.
(Mexican Association of Advertising Agencies)
Bosques de Duraznos No. 75, 6o. piso, desp. 602-603
Col. Bosques de las Lomas
11560 Mexico, D.F.
Tel & Fax: (011-52) 5281-5225, 5281-0568, 5281-4066
Contact: Lic. Sergio Armando Lopez Zepeda, General Director, Sra. Leticia Melero, Public Relations Manager

Asociacion Mexicana de Publicidad Exterior, A.C.
San Lorenzo No. 153, Desp. 303
Col. Del Valle
03100 Mexico, D.F.
Tel: (011-52) 5575-6179
Fax: (011-52) 5559-1523
Contact: Lic. Jesus Caudillo Alegria, General Director
E-mail: ampe@webtelmex.net.mx

Camara Nacional de la Industria de Radio y Television
(National Chamber of the Radio and Television Industries)
Av. Horacio No. 1013
Col. Polanco Reforma
05120 Mexico, D.F.
Tel: (011-52) 5726-9909
Fax: (011-52) 5254-8930
Contact: Lic. Nury Poma, Public Relations Manager, Lic. Adrian Angel, Information and Research Manager
Web: www.cirt.com.mx