

# Business Plan PlusLight Limited



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## **EXECUTIVE SUMMARY**

PlusLight is an intelligent light switch that balances interior lighting with natural light levels to maintain a constant room brightness. The product addresses the issue of poor lighting conditions and also saves energy. Our target market is owners of domestic and commercial properties. PlusLight has raised £88,000 and requires an additional £150,000 of funding from an angel investor. The company is expected to make an approximate loss of £90,000 in year one, followed by profits of £140,000 and £340,000 in years 2 and 3 respectively. We intend to sell through electrical distributors and wholesalers but also through direct and online sales. In terms of exit strategy, after five years the founders of PlusLight intend to buy out the angel investor with the returns from the business.

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## PRODUCT

PlusLight is unique as it balances interior lighting with natural light levels to maintain a constant room brightness. The ambient light switch saves energy by ensuring that only the minimum amount of light is supplied when it is required. By using a smart control it is also possible to introduce extra functionality into the lighting system. Advanced features can be programmed into the system, such as automatic on/off times which can help increase home security. The product can be installed in any room with natural lighting in domestic and commercial environments.

The intelligent light switch can save up to 80% of power usage, with an average of 40% (assuming that lights are left on during occupancy) [1].

The light switch also ensures that working conditions are kept stable and there is always plenty of light available in a room. The ambient light switch intelligently controls the brightness of the room in order to create a pleasant working environment, reducing eye strain and having a positive effect on health and happiness.



*The CIBSE Code for Lighting recommends a maintained illuminance of 500 lux for general offices (e.g. writing, typing, reading, data processing, etc.) and for CAD work stations and conference/meetings rooms. Where the main task is less demanding, e.g. filing, a lower level of 300 lux is recommended [2].*

# MARKET SURVEY

## MARKET SEGMENTS/CUSTOMERS

The global intelligent lighting controls market is currently worth \$1.3 billion and expected to increase between now and 2016 to \$2.6 billion [3]. Because of the nature of the product, there are many market segments that the product could be targeted at. In the UK there are around 25 million homes, of these around 10 millions are owner occupied. Other potential customers that PlusLight could sell to include; business owners, office owners, government buildings, universities, hotels and schools.

## STATE OF THE MARKET

Reasons for purchasing the PlusLight include:

- ✓ Reduced electricity bills/ business operating costs
- ✓ Reducing the carbon footprint of a home or business
- ✓ Adding security to a property
- ✓ Creating healthy lighting conditions

Modern concerns such as the cost of living, the environment and health issues all make the features of the PlusLight very well suited to modern life in the 21<sup>st</sup> century. With increasing energy costs for consumers and businesses, trying to save energy and hence save money is a high priority. Predictions say that the UK environmental market sector will increase by 45% by 2015. This shows that the awareness of climate change is increasing among consumers and likewise the market potential for PlusLight [4].

The benefits of PlusLight appeal to people's health concerns. Evidence from the health and fitness industry's market value grew by 1% despite a national GDP contraction of 4.9% last year.

From a survey of 52 people:

- 92% of people said they experience bad lighting conditions either at home or at work
- The majority of people would expect to pay at least £40 for one unit
- The average household of those surveyed had 11 rooms, with potential for fitting PlusLight switches in the more heavily used rooms
- The average small business owns 3 rooms, with potential for fitting PlusLight in all
- Most people would expect to buy the product from DIY stores or online
- 87% would consider buying the PlusLight to retro-fit

## COMPETITOR ANALYSIS

There are many light switch manufacturers already established, but few offer products similar to the Pluslight. Existing products that present competition for the PlusLight include the dimmer switch. Many manufacturers produce dimmer switches and are available from £3. Dimmer switches only allow the user to adjust the light levels in a room or area to a desired intensity. This system does not provide any response to changes in natural day light, and does not provide any security in the form of preset on/off times.

The TimeGuard Company is UK based and employs around 70 staff. They produce an intelligent programmable light switch with some similar features to the PlusLight. The product turns the light on and off according to natural light levels and allows the user to preset on/off times. The Timeguard product also features a dimmer to allow for variable light levels. It also allows for an automatic light off function for up to 8 hours after being switched on. It does not however adjust the intensity of the light with natural light levels in the room which is an important feature to both energy savings and health concerns. This product costs around £20.

Another competitor based in the US is Watt Stopper. The firm produces light switches with built in light sensors that also detect motion. It turns the lights off when the natural light rises above a preset level or depending on the occupancy of the room. Like the Timeguard product it does not allow for the light levels in a room to be kept constant. The Watt Stopper product is available for around £50.

Features	PlusLight	TimeGuard-ZV210	Watt stopper-WS200
Motion detection	Yes	No	Yes
Ambient light balancing	Yes	No	No
Auto-on light level detection system	Yes	Yes	Yes
Programmable on-off times	Yes	Yes	No

FIGURE 1- FEATURE COMPARISON WITH MAIN COMPETITORS

## SELLING

The chosen the RRP of one unit is to be £50. This figure has been derived from the survey and market research and will add a £31.60 margin after manufacturing and logistics costs. The wholesale price will be set at £35 leaving a £16.60 margin on cost price per unit.

### ROUTES TO MARKET AND SELLING:

The customer is likely to require a trained electrician as the product requires technical knowledge to install. With this in mind our main target audience for selling is distributors and wholesalers of electrical businesses. The routes to market that would be applicable for our product are as follows:

- **Direct selling** – Although trade shows and exhibitions can be expensive, they reach the exact target audience for PlusLight [5]. The ideal home exhibition is a large 17 day UK trade show. A stand can reach a target population of 1 in 200 adults in the UK with an average household income of £56,000 whom are interested in home improvements [6]. After the initial start up years we will also employ a direct sales force to handle telephone and retail sales.
- **Distributors / wholesale** – Bulk sales can be generated at a lower profit margin. For example to catalogue companies and medium to large electrical stores via pitching and meetings in person. This is better for a more complex and technical products such as ours that need an engineering explanation. The product can be listed with similar items in electrical catalogues.
- **Online sales** - Amazon / Ebay / Own Website – We will make use of online marketing as it is a very cost effective method of selling the product as postage costs are low due to the product weight.

## MARKETING STRATEGY

On startup we will spend £44,000 a year on marketing the product.

### ADVERTISING

Results of the market research survey of 52 people show that 86% of consumers of this product would buy mostly based on word of mouth. This may be because PlusLight is a brand new product and there is no existing consumer trust in the brand name. Consumers are therefore most likely to buy after witnessing the product in action. The next most effective methods of advertising would be industry specific magazines, demos or trade fairs and online advertising. We will also negotiate a reduced wholesale price in exchange for advertising via distributors.

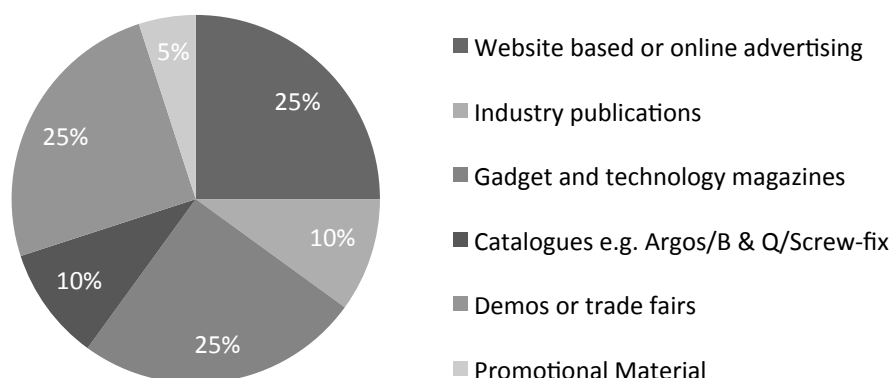
Demonstrations and trade fairs give the advantage of showing the working product and creating a 'wow' factor and can reach the exact target audience. Gadget and technology magazines are an expensive form of advertising but enable the product to be shown in a glossy colourful format unlike newspaper advertising which received little response in the survey. Research on what the consumer 'likes most' about the product suggests the advertising should be focused on the money saving potential and eco-friendliness. Online advertising has the advantage of reaching thousands of people in a chosen target audience. Social networks such as Facebook allow us to target age, location and interests on a pay per click basis. These clicks can link to the products website offering additional information about PlusLight and the opportunity to purchase online.

An electrician with an understanding of the product may also influence a consumer directly by word of mouth. For a wholesaler or electrical contractor PlusLight could appear in various industry specific catalogues.

The survey results suggested that most people would consider installing PlusLight when redecorating. Another potential advertising market may be home improvement shows or interior design magazines.

PlusLight will not advertise on television until the business has grown due to large costs and inability to target the appropriate demographic.

**The advertising budget breakdown for PlusLight is shown below:**



### ONLINE SALES

The company website will be used to market and sell the product to individual consumers removing the necessary cost discount when sold to distributors. This gives us a better profit margin. The web system can

also be used as a way of encouraging users by offering simple services such as energy logging and discussion forums.

The website running costs are estimated at £600 per year which is the total development amount spread over several years. The website will then run at a lower cost, but will require a full-time employee to maintain it as the company grows.

## **PROMOTIONS**

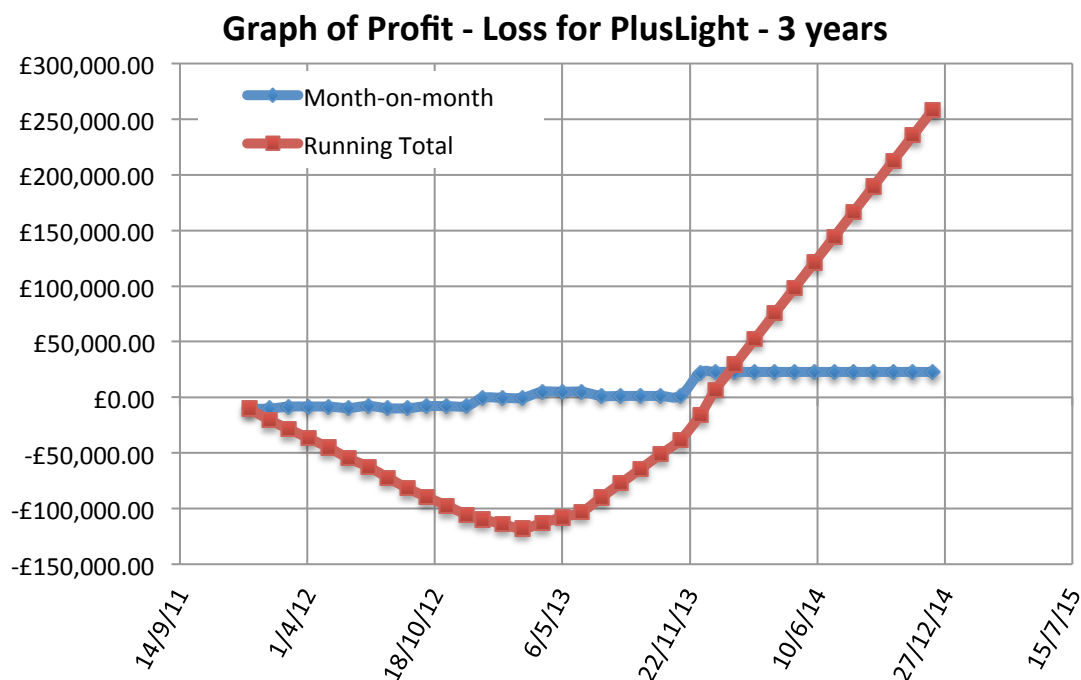
Initially the product will cost around £18 to manufacture, package and distribute. After Christmas is an ideal time to run home improvement promotions as the consumer is short of cash but still wants to redecorate. A buy one get one free deal on the units would barely cover cost. However a 3 for 2 promotions would still leave an acceptable margin.



## FINANCES

The breakdown of PlusLight's financials are shown in *appendix A*. The projected financials for the company were created using a month by month model to estimate costs and profits for the business. Costs include:

- Staff                    £58,000 pa
- Rent                    £12,000 pa
- Utilities                £2,000 pa
- Property repairs    £500 pa
- Account costs        £3,000 pa
- Marketing            £44,000 pa
- Insurance            £4,000 pa
- Miscellaneous       £2,000 pa



**FIGURE 2 - GRAPH OF PROJECTED PROFIT-LOSS ACCOUNTS FOR THE FIRST 3 YEARS**

The company is projected to turn over £86,000 in the first year, £490,000 in the second and £840,000 in the third year. Making an approximate loss of £90,000 in year one, followed by a profit of £140,000 and £340,000 in years 2 and 3.

The company projects that it will break even within 3 years and upscale production to 25,000 units per year. The company reaches a lowest cash-flow projected balance of -£220,000 as the company expands to meet demand. The investment required must therefore be at least £220,000 to allow for optimal expansion and any additional funding acts as a contingency buffer. The company is projected to break even at approximately 10,000 units.

Year	Turnover	Gross Profit	Net Profit
<b>1</b>	£66,500	£35,000	- £90,000
<b>2</b>	£490,000	£260,000	£140,000
<b>3</b>	£840,000	£500,000	£340,000

Finances also show a sharp increase in bank balance in year 3 of running although a large working capital is required in order to fill large orders in advance of their payment by distributors.

## **SOURCES OF FUNDING**

### **PERSONAL INVESTMENT AND FAMILY / FRIENDS**

This is the best sort of investment for this business as interest rates are often small if not zero. As there are four founding members of the business each person can invest an initial £5,500. We can use our contacts including friends and family to offer investment opportunities of a similar size for a small amount of equity with an aim to raise £40,000.

### **BANK LOANS**

An application for small business loan from bank for up to £25,000 can be made. The bank would require security on the loan for example personal assets could be reposed the loan was not paid back. A typical loan at 6.8% for £10,000 would amount to about £11,800 after 5 years. It would also require monthly instalments even during the first months where the business is not in profit. The bank loan amount can be adjusted depending on the amount of stock to manufacture; it can also cover the costs of employing any additional staff. It can also be increased if funding from other sources is not adequate.

### **EQUITY OPTIONS**

One source of investment will come from business angels in exchange for an equity share in the business. The business aims to raise £150, 000 from angel investors. We are able to find investors using British and European Business Angel networks and also technology and product specific networks.

### **GRANTS**

Although some grants may be available for small amounts of cash, in today's economic climate they are often not financially worthwhile. We could apply for funding from Technology Strategy boards Smart programme towards a project in the area of technology or engineering [7]. Three funding options are available with increasing demands from proof of concept to secured intellectual property rights. The grant amount varies from £25,000 to £250,000 for medium sized businesses but requires this investment to account for no more than 60% of the total cost of the project. This is a potential source of funding after the company has been trading for some time and patents are secured.

### **TAX CREDITS**

The business may also be eligible for tax credits as the project is an innovative energy saving technology. However this form of grant mainly applies to R & D projects.

### **VALUE IN BUSINESS**

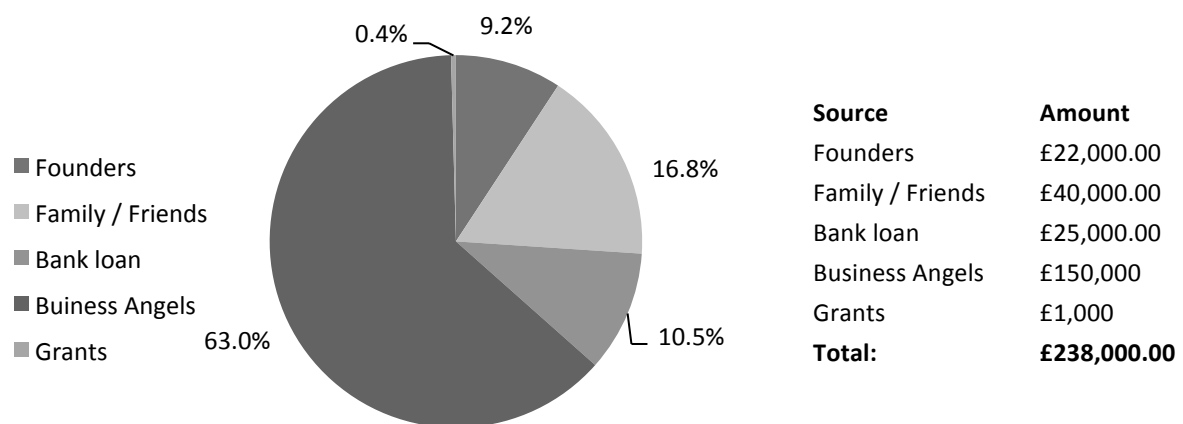
The business benefits from non-cash value such as:

- ✓ Skills from three mechanical engineers whom understand the design and manufacture process.
- ✓ Using technology such as 3D CAD software instead of making costly prototypes.
- ✓ Can use non-patented or expired patent technology in the dimmer switch to save on design costs and time.
- ✓ Founders take a reduced salary until the business is in profit.

## BUSINESS FUNDING STRATEGY:

1. The four founders of the business can invest first. We will use personal funds to launch the idea making prototypes and designs.
2. Use family, friends and other contacts to provide cash for development of the product and create initial products or 3D printed models.
3. Apply for grants for start ups in innovative technology products or R & D.
4. Contact and pitch to business angels to pay for stock, manufacturing, securing of intellectual property and marketing of the product.
5. Bank loans for any additional required cash.

### BREAKDOWN OF FUNDING SOURCES ON START UP:



## MANUFACTURE

Manufacturing costs are quality assurance and control costs, direct and indirect labor, equipment repair and maintenance, other manufacturing overheads. The cost price per unit is calculated to be £16.60 including a manufacturing cost of £2.00.

Labour costs in India are one of the lowest in the world and therefore these costs can be dramatically reduced by manufacturing abroad from the UK. Direct material costs in India are also significantly less compared to other countries [8]. India has the cheapest infrastructure facilities in the world and its high tech expertise will help PlusLight to produce products cheaply with high quality standards [9]. PlusLight intends to manufacture in India and ship to the UK.

## DISTRIBUTION

The costs involved in distribution are; freight costs, fixed warehouse costs and variable warehouse costs. Freight costs are associated with transporting the finished product from point of manufacture to the UK. Fixed warehouse costs are incurred in storing the product once manufactured. Finally variable warehouse costs are costs that are associated with running costs such as electricity/gas/water bills. Distribution costs per unit will vary with order size but remain fixed for one container. For an order of 10,000 units the price per unit is considered negligible at around 6 pence although initial smaller orders will increase this cost. Packaging costs of 30p per unit are also included. A full break-down of the shipping and handling costs for a large order is shown in *appendix C*.

## RISK ANALYSIS

A risk analysis is important for PlusLight to enable the company to understand our strengths and weakness. These are areas where opportunities and threats may exist for the business.

A **SWOT** analysis identifies the **S**trengths, **W**eakness, **O**pportunities and **T**hreats:

### Internal

- Strengths
  - Unique features of the product
  - Green/money saving potential of the product
  - Health benefits of the product
  - 3 engineers, good technical knowledge and creativity
- Weaknesses
  - Lack of business knowledge – financial and marketing
  - No existing brand name
  - Small business in a big market

### External

- Opportunities
  - Very large market opportunity
  - Increase in size of health market
  - Investor could increase business knowledge of the company
- Threats
  - No possible patent but intellectual property rights for the software

This is the first start up for all of the founders and therefore we lack business experience. However the company is using a business angel to source funds that could bring business knowledge to the firm.

A threat that can be overcome using the strengths of the business is the fact that the main concept cannot be patented. Similar products on the market are very plain in appearance and similar to ordinary light switches. The appearance of PlusLight is more modern and we can use this to our advantage to compete on the market.

A **PESTLE** analysis is useful to understand the state of the industry as a whole and can help identify problems the company may face.

- Political – The introduction of PlusLight will lower the carbon footprint of businesses and homes. This is an issue for the foreseeable future.
- Economic - PlusLight is a start up company whose products are aimed at the UK market. However manufacture of the product in cheaper Asian countries is subject to the exchange rate.
- Sociological - The popularity of the main product features are not subject to change. The aesthetics and functions of the product can easily be changed to meet trends.
- Technological – The product is made using current technology. Technological advances will either increase the products potential or decrease the manufacturing costs of the product.
- Legal - The product is a very safe product and no possible changes to the law would conflict with the operations of the company. Changes in environmental law could increase sales.
- Environmental – One of the main features of the PlusLight is the energy saving aspect and therefore the production of this product is of environmental benefit.

The only area in which PlusLight may really be affected is in economics. To reduce costs PlusLight will outsource to Asian countries to manufacture the product. If the strength of the pound weakens dramatically, the production costs would increase and therefore the retail price would increase and in turn sales of Pluslight could reduce.

## MANAGEMENT

### COMPANY BACKGROUND

PlusLight is a fresh start up business. The founders of the company include three mechanical engineers and one entrepreneur. Some have experience in working in medium product manufacturing companies and have gained knowledge that will be applicable to PlusLight.

### COMPANY STRUCTURE

Matthew Vaughan	-	Marketing Manager
Sanan Sethi	-	Managing Director
Henry Holland	-	Design Engineer
Ben Oxley	-	Technical Engineer
<i>Outsourced</i>	-	Accounts and finance

### EXIT STRATEGY

Part of the initial funding to the business is being sourced through an angel investor. Due to this an exit strategy is required for the angel investor to understand how and when they will get a return on their investment.

An initial public offering is not appropriate for PlusLight due to the business being a small start up company. The costs of complying with regulatory requirements such as creating financial reporting documents are also very large.

The management of PlusLight would like to remain in control of the business after the exit of the investor. Therefore selling the business to competitor is not an option for PlusLight. Instead it is proposed that after 5 years of running the angel investor will be bought out by the remaining management using the business profits.

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## APPENDIX

### A: SUMMARY OF THE PARTS COST FOR MANUFACTURE

<b>Manufacturing Costs</b>	<b>£</b>	<b>2.00</b>
Switched Mode Power Supply	£	1.00
Processor	£	2.00
PCB	£	0.10
Triac	£	0.50
Components	£	1.00
Photodiode	£	0.50
Colour touchscreen LCD	£	5.90
Injection-Moulded Case	£	0.50
PIR	£	1.00
Packaging	£	0.10
Touchscreen Overlay	£	2.00
<b>Cost Price of one unit</b>	<b>£</b>	<b>16.60</b>

### B: SHIPPING AND HANDLING COSTS

#### Container from Mumbai arriving in Southampton

Custom Clearance:	£ 65.00
Documentation:	£ 35.00
DTI (Department of trade & industry):	£ 35.00
Port security:	£ 15.50
Use of deferment:	£ 25.00
Haulage from Southampton to warehouse:	£ 400.00
Load on load off:	£ 60.00
<b>Total Container cost:</b>	<b>£ 635.50 per 10,000 units = 6.3p per unit</b>

### C: SUMMARY OF PROJECTED PROFIT LOSS ACCOUNTS FOR PLUSLIGHT