

Chapter 17

Feasibility of Implementation of Solar Bottle Bulb in Urban Slums of India

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ABSTRACT

Reach of uninterrupted electricity is a perennial problem that is faced by urban slums in India. Through this chapter, the authors aim to study the feasibility of implementation of a ground breaking idea that will help in fighting this problem in a cost effective way and that has already been implemented in Philippines on a large scale. Further, given the present scenario of development in India, this chapter also tries to focus on the ways in which this product can be introduced on a commercial level covering one slum at a time. Also, this chapter revolves around the usability and identification of the most suitable and cost effective way to implement this idea in the desired target group. The chapter ultimately hopes to drive its readers to find the best solution to the proposed problem.

SOLAR BOTTLE BULB: LIGHT AND HOPE FROM WASTE

Kartik Jayraman and Prashant Sahni, members of Social Welfare Society- Sudarshana of Management Institute Ghaziabad (MIG) were putting the final touches on a presentation to the society's heads concerning the launch of their latest innovation targeted for slum dwellers of urban India. Solar Bottle bulb was an unconventional lighting solution for the people living in slums of urban India who have always faced problems of irregular power supply. The product could generate a light of close to 55-60 watts just by harvesting sunlight and without use of any electricity. Also, it could be a remarkable product owing to the fact that it could be made available at a meagre price of Rs.80 which was well under the purchasing power of the targeted segment. Its life is around one year and after that it'll need a fresh mixture of water and bleach along with a changed bottle which will cost around Rs. 20. Both of them were excited

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but nervous at the same time because Mr Pramod Banerjee, Director of MIG would also attend the meeting along with representatives of some NGOs^[a] working in and around New Delhi. The only problem which they faced at that moment was scalability. They knew that it was an exceptional product and one that could bring remarkable changes in the lives of slum dwellers. But the question was how they would make this product available at a large scale to slum dwellers, and once made available how they would coerce the people to use this product? Whether NGOs would come in for help or venture capitalists or for that matter their institute?

URBAN SLUMS IN INDIA: THE TARGET

Approximately 68 million Indians are living in slums^[b], according to a government census in 2011. One in six urban Indians lives in slum housing that is cramped, unclean, not properly lit even during the day. The report prepared from data collected for 2011 national census looks at urban slums in around 4000 towns across India. The electricity being used in these households are mostly illegal – electricity supplies.

Three types of slums have been defined in Census, namely, Notified, Recognized and Identified.

- i. All notified areas in a town or city notified as ‘Slum’ by State, Union territories Administration or Local Government under any Act including a ‘Slum Act’ may be considered as **Notified slums**.
- ii. All areas recognised as ‘Slum’ by State, Union territories Administration or Local Government, Housing and Slum Boards, which may have not been formally notified as slum under any act may be considered as **Recognized slums**.
- iii. A compact area of at least 300 population or about 60-70 households of poorly built congested tenements, in unhygienic environment usually with inadequate infrastructure and lacking in proper sanitary and drinking water facilities may be considered as **Identified slums**. (See Figures 4 & 5: Slum reported towns & slum wise population in India)

Mumbai leads the chart for slum dwellers: 41% of its 20.5 million people. But in percentage terms, the coastal city of Vishakhapatnam overtakes the financial capital. (See Figure 6: Distribution of slums in India). According to that report one-third of studied slum households in India do not have toilets, but have mobile phones and televisions. This statistics shows an essential characteristic of general masses that live in slums. Lack of education and awareness hampers their growth prospects and they give more importance to not so important commodity like a mobile phone over a greener and cheaper source of power. In the future, this mind-set of slum dwellers could create a problem in reaching to them for implementation of Solar Bottle Bulb.

Both of them knew that this was quite an untapped market because they had come across a census report which read that out of 1.73 crore census houses reported, 1.37 crore are slum households. Need of cheap source of lighting would be very high in this segment of population because of frequent power cuts? The issue of affording uninterrupted power supply was also a major concern because of low income levels of this segment. Most importantly 90% of slum households use electricity as the main source of power, out of which 20% is the stolen power supply

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