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Ecopreneurship - Creative Solution For Sustainable Energy Management

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Abstract

This study aims to explore the contents and benefits of "Social Entrepreneurship". The study is presented in the form of a case of Gram Power, a Social Enterprise with technological innovation. The social enterprise "Gram Power" is Energy efficient Smart Micro grids provide reliable electricity to rural households with an affordable prepaid purchase mode.

Findings

The behavioral theory of social entrepreneurship studies the background factors that lead to social venture creation, the underlying organization dynamics and how it measures social impact, mobilize social capital and brings out sustainable social change.

Energy plays a vital role in the "socio" - economic development and welfare, mainly due to dependency of indispensable amenities on electricity. However, matter of concern is the gap between demand and supply of developing country domestic power needs and inadequate supply. One of the cases is Indian subcontinent, where more than 50,000 villages still do not have access to uninterrupted source of electric power. In term of population, it is about ~ 30% of total population. Such a statistics is not much different in many of the neighboring country. Gram Power, a social enterprise of India, is providing a smart metering and affordable solution in areas where the extension of existing grid supply is economically not viable. The details of changes, social transformation, and operational sustain ability of such a community engagement model have been discussed in this study.

Methodology/approach

The method adopted in this study is to develop case descriptions to connect a complex series of dots as described in Yin (1994). This research is an exploratory, qualitative research based on the grounded theory methodology developed by Glaser and Strauss. In this study, the collection and analysis of data happened concurrently. Gathered data was immediately organized and briefed.

Research limitations/implications

The focus of social enterprises is to produce measurable social impact, researching these types of social organizations will advance research in social sciences. Time frame and single case study analysis are the limitation of this study. Single case study analysis has, been subject to the inter-related issues of methodological rigor and researcher subjectivity.

Practical implications

Studying the phenomena of social entrepreneurship and social innovation through case of Gram Power explaining the social enterprises' unique behaviors and characteristics will advance research for creating sustainable energy distribution and management (public wealth). This case base research will help in studying the role of social entrepreneurs in creating new social institutions and structures, promoting social movements, and mobilizing resources to create sustainable social impact.

Key words: Social Entrepreneurship, Eco-prenurship, Energy Management, Community Participation, Social Innovation, Smart Distribution.

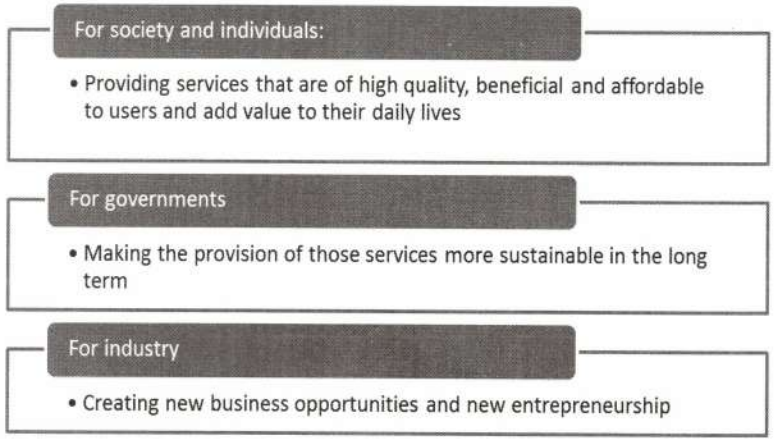
INTRODUCTION

Social challenges are faced by the global community, ranging from climate change to poverty, social exclusion, migration and social conflicts. These challenges manifest on a global scale, as well as on a smaller scale within local communities. These challenges are interconnected with the larger aspects of the global system. (Senge: 2008)

Apart from economic and developmental challenges, the challenges we face today have acquired a significant social dimension. Many social challenges are viewed as an offering of economic and social opportunities. Developments in information and communications technologies have created exciting possibilities for improving the social amenity provision - e.g., e Health and virtual education, over a coffee, during a walk, at lunch or in a bar, with friends, and during social interactions are some informal occasions that have actually led to novel social initiatives.

Social innovation is a "novel solution to a social problem that is more effective, efficient, sustainable," (Phills et al., 2008,). This definition implies that by creating value for society, social innovation would contribute value to communities, and therefore improve productivity by creating new and sustainable capabilities, assets or opportunities for change. Google and Facebook are two examples of classic (economic) social innovations, which revolutionized communication in society.

By encouraging social innovation, three level developments take place:



Place:

The study has been discussed in following sections: Section I is Introduction of the study, Section II is about the background of the study, section III research objective and in section IV real case of Gram Power has been discussed in detail. In section V systematic analyses of the case is taken followed by conclusion of the study.

II- BACKGROUND OF THE STUDY

A- Defining Eco-prenurship, Eco-preneur and Social Innovation

An entrepreneur is a person who undertakes innovations, finance and business acumen in an effort to transform innovations into economic goods and who accepts the risks associated with them (Schaper: 2002). The word "ecopreneur" is a combination of "ecological" and "entrepreneur." An ecopreneur is an individual who is focused on ecologically-friendly issues and causes, trying to do business which benefits the environment or do not harm the ecosystem. An ecopreneur is one who ranks environment more than or equal to profits as his most effective criteria as a business owner & whose primary motive is not only to make profits, but to serve the humanity and to ensure that the world's resources are available for the new generations.

The field of Eco-preneurship research is relatively new (Schaper, 2002). It began to develop as a field in the early 90ies, when some authors began to examine "the green entrepreneur", "the environmental entrepreneur" and the "eco-entrepreneur" which later merged into "eco-preneur" (Schaper, 2002). The main aim of an ecopreneur is to build a firm which is more sustainable and environmentally friendly. (Schaper: 2002). An ecopreneur whose business efforts are not only driven by profit, but also by a concern for the environment. The terms such as "Sustainopreneur", "environmental Entrepreneur" and "eco capitalist" are identical with ecopreneur.

Social innovations are innovations that are social in both their ends and their means. Specifically, social innovations can be understood as new ideas either as products, services, and models that simultaneously meet social needs more effectively than alternatives and create new social relationships and collaborations.

"Innovation happens when there is a meeting of minds, informal discussion and catching up on problems. These are best achieved either through breakout areas or informal workspace". Kodukulla Suryanarayan, Director, People Operation (Sales)-Google India.

The term "social innovation" was described in the work of Drucker (1990) about the need for using management practices in non-profit organizations to increase the efficiency and effectiveness of producing social good.

There is no uniform definition of social innovations, but the commonly defined definition as a process of developing ingenious solutions in a social enterprise setting in order to find solutions for social needs and issues that neither the Government nor the market managed to provide.

Social innovations are, innovations that are not only good for society but also enhance society's capacity to act. Social innovation implies conceptual, process or product change, organizational change and changes in financing and can deal with new relationships with stakeholders and territories.

Commissioner Geoghegan-Quinn (European Commissioner for Research, Innovation, and Science) wrote that "Social innovation can help to meet new and unmet needs in society but do something much bigger by encouraging new ways of thinking that will make the society truly innovative, from top to bottom."

"The tracks of international research on innovation demonstrate that the technology-oriented paradigm – shaped by the industrial society-does not cover the broad range of innovations indispensable in the transition from an industrial to a knowledge and services-based society: Such fundamental societal changes require the inclusion of social innovations in a paradigm shift of the innovation system." (Vienna Declaration: 2011).

Social Innovations Classified Into Three Broad Categories.

Table-1

I-Grassroots Innovations	II-Broader Level	III- The Systemic Types
• Respond to pressing social demands not addressed by the market and are directed towards vulnerable groups in society. • e.g. Projection Geracao (the generation project) in Portugal or the second-chance schools in France fall into this category,	• The boundary between 'social' and 'economic' blurs and directed towards society as a whole. • The Red Cross or the Open University & Arvind Eyecare, an innovative hospital network for vision in India, • Godrej Chotu Kool an economical and portable solution for rural India fall into this second category.	• Addresses fundamental changes in attitudes and values, strategies, and policies • To make citizens more aware • Initiated by institutions, play a part in reshaping society as a more participative arena where people are empowered, and learning is central. • DESICREW a rural BPO in India with it reverse migration model has created a positive social impact its chain of BPO outlets in rural India, generating employment.

B. Rethinking Social Entrepreneurship as Part of Social Innovation: Leads From Literature.

The literature on social entrepreneurship has largely emerged from business schools in USA and UK, and there has been a steep rise in the West on social entrepreneurship. Social entrepreneurship has been much celebrated "as one of the most interesting terms on the problem-solving landscape today" (Light, 2009).

Social entrepreneurship was introduced in the 1970s to address the issue of social problems. The term "social entrepreneur" was first mentioned in 1972 by Joseph Banks in his influential work named "The Sociology of Social Movements". Social entrepreneurship practices emerged in the 1980s with the establishment of Ashoka, which is the first organization to support social entrepreneurs in the world.

Studying the phenomena of social entrepreneurship various questions arises corresponding to unique behaviors, characteristics, and typologies, creating sustainable public wealth rather than just focusing on private wealth and business performance. Social entrepreneurs focus on the creation of social impact and social change and social transformation (Alvord et al., 2004).

The idea of "social entrepreneurship" combines the passion of a social mission with an image of business-like discipline, innovation, and determination.

The term of social entrepreneurship might be new, but the phenomenon is not.

We have always had social entrepreneurs in our old culture. Our great grandfathers initially built many

of the institutions we now take for granted. Social entrepreneurship can include social purpose business ventures, such as for-profit community development banks, and hybrid organizations mixing not-for-profit and for-profit elements. Social entrepreneurs supposed to be the most effective methods of serving their social missions.

However the concept of "social entrepreneurship" is gaining popularity, it means different things to different people..

What does it take to be a social entrepreneur?

The term "entrepreneur" originated in French economics as early as the 17th and 18th centuries. In French, it means someone who "undertakes," not an "undertaker". More specifically, it came to be used to identify the venturesome individuals who stimulated economic progress by finding new and better ways of doing things. Jean Baptiste Say, the French economist credited with giving the term in this particular meaning. In the 20th century, the economist most closely associated with the term was Joseph Schumpeter. He described entrepreneurs as the innovators who drive the "creative-destructive" process of capitalism.

Social entrepreneurs are one species in the kind entrepreneur. They are entrepreneurs with a social mission. However, because of this mission, they face some distinguishing challenges and any definition ought to reflect this. For social entrepreneurs, the social mission is explicit and central. Mission-related impact becomes the central criterion, not wealth creation. Wealth is just a means to an end for social entrepreneurs.

According to Kirzner, (1973) "the products of social entrepreneurship are different from traditional entrepreneurship, and measurement of those outcomes is also different". According to Nicholls (2006) "social entrepreneurs tackle a market failure, which resembles the function of entrepreneurs as well". Nevertheless, for social entrepreneurs, market failures are not only related to price disequilibria or the inability of some people to access certain products or services.

Lehner and Kansikas (2012) estimate that 2008-2010 has seen almost triple the amount of new research and journal articles compared within the academic year 2005 - 2007.

Lehner (2010) have shown the different schools of thought in social enterprises drawing on work by Hoogendoorn et al. (2009) and identified two broad traditions – American and European.

The Stanford Social Innovation Review (SSIR) defined social innovation as "the process of inventing, securing support for, and implementing novel solutions to social needs and problems" (Phills et.al, 2008).

SSIR redefined the definition of Social innovation as "a novel solution to a social problem that is more effective, efficient, sustainable, or just, than existing solutions and for which the value created accrues primarily to society as a whole rather than private individuals" (Phills, et.al., 2008).

In the BEPA study (2011), the authors emphasize that "the measurement of innovation has recently progressed, and the policy - makers had given their attention to developing new innovation metrics (e.g. EU innovation scoreboard), but the lack of agreed tools to measure the social value and social returns produced by social innovations is a prime obstacle".

Barroso (2011) has suggested that "Social innovation contributes to making the social market economy more competitive. If we are prepared to adapt to the fast-changing world, if we address today's social and economic challenges in a smart way, it has the potential to unleash fresh waves of creativity and innovation and create new sources of sustainable growth and jobs."

It is indeed surprising that there is not sufficient discussion on Indian or South Asian schools of thought.

Murray et al. (2010) propose six steps how to realize a social innovation.

Table-2

1. Prompts, Inspirations, and Diagnoses	2. Proposals and Ideas	3. Prototyping and Pilots
Outline all areas that require innovation/improvement. Identify the problem, and rather than just identifying its symptoms.	Generate ideas. Include a wide circle of actors as early as in the inception process.	Ideas to be refined through trial and error Act swiftly, operate at low costs and obtain feedback from potential buyers/users and experts.

4. Sustaining	5. Scaling and Diffusion	6. Systemic Change
Improvements continue to be important. Maintaining an innovation means integrating it into the budget. The idea must be viable in the market.	Possible strategies as to how to disseminate the innovation e.g. via licensing or franchising. Diffusion and dissemination rely on an exchange of ideas and knowledge with other organizations.	A change in the system is an interaction of social movements, business models, legislation and regulations, data and infrastructure and, of course, a completely new mindset and course of action..

There are many working bodies and organizations that are involved with social innovations and then working as social enterprises. For instance: Jain Irrigation - providing tailor made micro irrigation solution with innovative and sustainable business model in India, Clean Star Mozambique-A promoter of Sustainable Farming with an alternative farming system, introducing multi-crop and an alternative cooking fuel in Africa.

A rapidly growing area in the field of social economy is social enterprises, an outcome of social innovation (BEPA 2011). Health, education and social initiatives have often benefited from innovative social initiatives. Four key sectors are likey to encompass the innovation opportunities in the coming five years: increased demand for sustainable or energy-efficient products and services (32 % of respondents), new products or services for older consumers (15 %) and education, social or health services (12 %).Social entrepreneurship is a process, the logic of action, which can occur in a variety of organizational contexts: not-for-profit, for-profit, a government organization, a community-based organization, or through a new venture. It works on its own set of principles: focus on value creation, not capture, focus on innovation, not the status quo, focus on the sustainable solution, not a sustainable organization, and focus on empowerment of participants in the value chain not control of industry forces. (BEPA 2011)

According to Senge (2008) Entrepreneur has to consider three things in the process of social innovation:

- See the bigger social and economic systems in which companies operate;
- Cooperate with the internal and external environment of the organization, or to collaborate across boundaries;
- Focus on the most relevant and most crucial aspects

Mulgan (2010) describes that two sources exist to derive a social change, either by heroic and energetic individuals (e.g. Nobel-peace winner Muhammad Yunus) or movements of millions of people (e.g. environmentalism). It still seems that one more source needs to be added: The business or commercial opportunity within a social innovation that might also serve as an origin to develop positive social change. Recently, social innovations came into prominence because they are an alternative to the existing methods on how to overcome the crisis, offering long-term solutions to current issues and new development opportunities.

Importantly, social entrepreneurs may have a low-budget start and be active in a small geographic areas, the problems taken up by themhave global relevance; such issues include access to water, promoting small-business creation, or waste management (Zahra et al., 2008). The examples of successful social entrepreneurship is the Grameen Bank has shown that social innovation can change even the most conservative of institutions (banking) in a deeply conservative society (Yunus (2007).

Social Entrepreneurs Identify and relentlessly pursue opportunities to create sustainable solutions to social problems

- Continuously innovate, adapt, and learn
- Act boldly, not constrained by resources currently in hand, and
- Hold them accountable for
- Achieving their intended social impact
- Using resources wisely

Key Initiative in the social field as per the Europe 2020 is against poverty and social inclusion, entail a commitment to enhancing the potential of social economy and the third sector as well as to develop

evidence-based approach to social reform.

Gram Power, a social enterprise of India, is providing a smart metering and affordable solution in areas where the extension of existing grid supply is economically not viable. The motive of Enterprise is social inclusion of village households and work against illiteracy and eradication of poverty by providing self-sufficiency in energy production and management.

The study is based on both primary and secondary data sources. Secondary sources are technical articles from academic databases and electronic documents (e.g., "analyzes", reports, estimates, proposals, etc.) and literature. Primary data were obtained by means of performing in-depth interviews with a focus group taken from community players. It builds on the assumption that social innovations provide one way to achieve sustainable development of the society. Social innovations complement economic innovations, and their focus lies primarily on assuring social welfare. It is believed that the community development is of key importance for overcoming the economic and social crisis.

III- RESEARCH OBJECTIVE

The Broad Objective of Research Are –

- To understand the linkages of social capital and its contribution in resource management.
- To understand how social entrepreneurship emerged with the help of social capital?
- To know the motivation of community participation for energy management.
- To understand that how people perception changes?
- To understand how social entrepreneurship can help in energy management?

Data Analysis

There are two strategies for analyzing data in a case study. One is to analyze the case study by anchoring on hypotheses and the other is to develop case descriptions to connect a complex series of dots in the case study (Yin, 1994). In this study, the collection and analysis of data happened concurrently. Gathered data was immediately organized and briefed. The result of the previous literature review served as a guideline for data analyzes and all the data concerning the case-study company was generalized and synthesized.

IV- CASE STUDY

A. Company Profile: 'Gram Power'

India's first smart micro-grid 'Gram Power' (solar power generation unit with 'smart meters' in every user household) was set up in rural Rajasthan, providing energy for various uses. Gram Power provides cutting-edge Smart Grid technologies to address the electrification issues of developing nations. Gram Power's innovation is their Smart Distribution technology, consisting of their Smart Meters and Grid Monitoring Systems to provide on-demand, theft-proof power with a unique pay-as-you-use schedule uniquely determined by the end user. It has succeeded in integrating IT with preexisting grid technologies to harness the power of data, to achieve afore mentioned objectives, thereby creating a new dimension in the space of 'Internet of Things'.

Gram Power's 'micro grid' is powered by a centralized array of solar panels which collect the sun's energy and converts it into DC electricity. The surplus solar energy is stored in a battery array, providing users with a continuous supply of energy even during peak usage times and at night when the solar panels do not provide any electricity. DC electricity from the solar array and batteries is converted to AC electricity via an inverter, which is then distributed throughout the service area via small overhead power lines. The system is monitored wirelessly by Gram Power for energy theft or other usage abnormalities.

The energy availability is a direct indicator of social growth. Keeping in mind the various social and economic challenges, ***Gram Power(GP),*** aims to solve the energy/power crisis by providing innovative method in the form of 'Smart Meters' implemented alongside Smart Grids, to eliminate barriers to provide affordable access to energy to the those sections where the extension of existing grid supply is economically not viable.

B. How did the Social Innovation Emerge?

Baran town is situated in Hadoti region of Rajasthan. The total area of the district is 6992 sq.km. out of which only 82.18 sq.km. is urban. The total population of the district is around 10, 21,653 (as per 2001 population). The district has a tremendous scope for the rapid industrialization. Rajasthan Financial Corporation (RFC) is a leading financial institution in the state which caters to the industrial and financial requirements of the medium, small scale and tiny industrial units.

Yashraj Khaitan and Jacob Dickinson setup their innovation in Indian villages where there was no power collection. Yashraj Khaitan, the founder of Gram Power (GP) project, visited a remote Rajasthan village, and he noticed that there are 5000 people residing in around 800 homes which have less than 2$ per day as household income, there are no paved roads, no hospital, etc. Teachers and kids don't attend schools as there is no electricity, agriculture is dependent on rains. Few families had solar lanterns, diesel powered generators which are extremely expensive. So in the absence of any other alternative, mostly kerosene is used. Mr. Khaitan realized that there was need for reliable and affordable power supply. He found that there was a scope of building a lucrative business model that can fulfill both the Societal and Financial aspects of the business, which can improve the lives of the people in those villages.

C. Influencing Factors To Start Social Enterprise

The most influencing factor in this village was noted that despite the fact that there was no power, every household had cell phones. Every two to three days, a person used to take the cell phones to the nearest city to charge the phones and then return the charged cell phones back at a minimal rate. This made him realize that if by any chance, he can provide them power supply; the need for charging cell phone will be fulfilled, and villagers can also utilize power in other important work. It was also observed that the villagers had paying capacity and they were willing to pay for the alternate supply of power.

Another important observation is that people were stealing power through wireless transmission of electricity. Stealing power through wireless transmission is responsible for the high amount of power theft in India. In fact, statistics show that every year India loses over 25 billion in power due to theft, and yet there are 77 million households living off kerosene as a primary source of lighting.

These observations and willingness to work for the community led to an innovative and economically feasible solution that increases energy access in the villages and at the same time reduces power theft. Not only that, people became judicious in spending power only when they have a clear estimate as to how much they can spend in power consumption.

D. Function Of The Project

GP installs distribution lines from the solar power generation station at every home in the village, along with a proprietary smart prepaid meter that monitors power consumption and optimizes the supply and demand of power. Then it recruits a local entrepreneur to operate and maintain the plant, who purchased bulk energy credit from GP, which was then wirelessly transferred to an 'Energy Wallet' that Gram Power provided to each entrepreneur. The entrepreneur then transferred this credit to individual 'Smart Meters' in the village. Once recharged, the meters could be used to operate a variety of household appliances or even higher power water pumps for irrigation.

Gram Power sells energy credits at a wholesale price to the entrepreneur, who, in turn, earns a commission by selling these credits to the consumers. The consumers pay Rs 75 per month under the pay-as-you-go model for the standard grid connection. A recharge of just Rs 10 per day buys nine hours of light, six hours of a ceiling fan and television and, of course, cell phone charging whenever they want it.

The smart meters that were connected with the help of smart grids made it possible for the people in the villages to keep a track of how much money they had in their power account and for what duration can that much power last. Smart meters are working as a power-bank. The constant monitoring with the help of servers also helped in identifying any place where power theft was occurring, and the supply of power was cut off in that particular area. Each household was equipped with a prepaid smart meter which drew energy from the microgrid and kept track of how much-prepaid energy the user had remaining. It provided a direct feedback to the user about the power consumption of their appliances.

V. Analysis & Discussion

With their technology, Gram Power has managed to optimize the use of energy thereby rendering renewable energy sources more viable. Team of Gram Power has analyzed short-term and long-term effects of gram power initiative.

Short Term Goals	Long Terms
• The company aims to create an ecosystem targeting mainly the villages where other sources of power are non-existent.	• Some of the social, economic and technical problems that characterize Indian villages are reliability concerns, energy efficiency, economic competitiveness, geographic grid constraints and power theft.

• For a village where a person needs to travel miles to avail a gas cylinder for cooking, where a student's ability to study depends on a candle's dim flickering flame, even a light bulb per home, can be a significant improvement.	• The inherent problems in the context of which the idea had emerged, can applied to other villages.
• The villages that do not have access to power Gram Power is solving a problem that few have yet dared to solve.	• If we look at India's problems right now, we find a similar set of problems that characterize most of the India, the ill effects of which are amplified in the rural areas, for the people at the 'Bottom of the Pyramid.'

Table -3 (Insert here)

A. Primary Goals Addressed By the GP

- Providing Affordable and Clean Energy
- Community Participation in Energy Management
- Sustainability adopted by Community
- Responsible Consumption and Production
- Social and Economic Upliftment

1. The Impact Of The Innovation For The Business, Society And The Environment:

The innovation in question is extremely relevant for the geography and demographics that the company engages itself in. Even in areas that have decent electricity supply, the power companies turn unprofitable because of illegal tapping of lines and meter tampering.

The innovation leads to the mission of providing electricity in all villages having less or no power connectivity. It also serves the purpose of solving the problem of power theft by keeping track through centralized servers. It educates the common man as to why he should spend judiciously on power, by proving a Smart Meter that can be recharged like a prepaid mobile connection, and would indicate the duration for which the recharge would last. There have been multiple studies on Gram Power approach of energy supply management and 'for just 20 cents per day of recharge, consumers can operate lights, fans, radios, and televisions.' To achieve the change and to affect the lives of those who would otherwise be Powerless.

2. Business Impact

There are several inherent problems that the power sector of India is suffering from. Some of the chief concerns regarding it, and how Gram Power aims to tackle it are below:

- Through their smart meters they can monitor the cost of power real-time, thereby varying prices for different sources of power such as thermal, solar and wind.
- The facilities they provide allow the end consumers to monitor the nature of their power consumption. Everything from the amount of power for respective appliances to amount of power consumed and money left can be monitored through the prepaid service. This leads to a variety of benefits, such as allowing people more control over their expenditure, and it results in a more efficient power distribution with an incentive for the consumers to reduce power wastage.
- Power theft, which is a prime issue in India, is being addressed through the infrastructure they have put in place. The meters are capable of power theft in the network and identify the critical areas where this happens. This helps in curbing the theft of power, thereby increasing profitability for the firms.
- With real-time data for each consumer, the resultant patterns can be identified from the collected data. This provides valuable insights into the power consumption patterns and allows the company to expand, consolidate and grow in a more sustainable manner, generating value for all the stakeholders involved.

3. Motivation of Working for Gram Power:

Gram Power caters to entire demography that doesn't have reliable sources of energy through offering their centralized electricity generation and distribution services through govt. backed initiatives. Their purpose was to introduce micro-grid solutions in remote rural areas which have low population density and low per capita power consumption and provide them with services which are easier to avail e.g. prepaid energy coupons and online monitoring, thereby enabling consumers to utilize energy as per their needs in the most efficient manner. Online monitoring helps them track their electricity usage and provides points of thefts if there are any.

The main innovation required in this sector pertains to the financing of the microgrid projects. Smart metering and billing are two significant innovations which need to be implemented. The next five years will be an experimental phase that will see the

seamless integration of hardware and software. Moreover implementing the standardization of communication technology for smart metering communication is essential for the future growth in this sector. Gram Power aims to solve all these peripheral problems that linger centering the main problems.

B. Business Aspect Of Gram Power:

Gram Power project is providing on tap power, developing efficient dc appliances, eliminating theft and system loss reduction up to 6-10 times as compared to the conventional transmission line. It has designed a modular system that is flexible enough to reach villages from 20 homes to 1000 homes village. Also, the Business model is quite lucrative.

- Typical system of about 12KW requires $4 a watt to design
- Capital subsidy for 3$ a watt is provided by the government.
- Gram Power operated microgrids break even from day 1.
- There are 36000+ villages where there is a $7.7 bn opportunity
- Climate benefits: 83% less power used, 99% less CO2 and 84% less subsidy needed to run Gram Power micro-grids.

VI. CONCLUSION:

The innovation leads to the mission of providing electricity in all villages having less or no power connectivity. It also serves the purpose of solving the problem of power theft by keeping track through centralized servers. That old paradigm of depending on government aid is inadequate. What society need instead are creative and innovative solutions for fostering sustainable growth and increasing competitive abilities.

It educates the common man as to why one should spend judiciously on power. Smart Meter promoted the practice of smart purchase in those areas where people can't spend money at a time, part payment like a prepaid mobile and indication of the duration for which the recharge would last, made villagers conscious consumers. Intensified study of this area of social innovation has been largely practice-driven.

This kind of work reveals several conceptual weaknesses that require a deeper social-theoretical foundation of social innovations as an independent innovation. For this, the present study attempted to use a social-theoretical approach as a scientific conception of active social life to aid the analytical identification and classification of social issues. With recourse to practical, sociological and economic agendas, it can be shown that social innovations change social practice, thus becoming the actual drivers of transformative social change.

Social innovation needs to be explicitly taken into account when government formulates science, technology, and innovation policy. For the successful implementation of social innovations like Gram Power, there is a need for proper coordination and integration of these activities in national and regional socio-economic planning. Public-private partnerships play an important role in supporting social innovations. Strengthening the global partnerships and platforms can be effective for understanding and fostering social innovation worldwide. Thus social enterprises helped societies by harnesses private initiative, ingenuity (including business acumen), and investment to solve social problems and enhances the adaptive capacity of society by decentralizing social problem solving and innovation and provides services that create value for both government and businesses, as well as the poor or society as a whole

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