

Report On
Benefit Assessment of EDOTCO Bangladesh's Solar Capex
Investment and Customer Satisfaction

By

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An internship report submitted to the BRAC Business School in partial fulfillment of the
requirements for the degree of
Master of Business Administration

BRAC Business School
BRAC University
September 2023

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Declaration

It is hereby declared that,

1. The internship report submitted is my/our own original work.
2. The report does not contain material previously published or written by a third party, except where this is appropriately cited through full and accurate referencing.
3. The report does not contain material which has been accepted, or submitted, for any other degree or diploma at a university or other institution.
4. I/We have acknowledged all main sources of help.

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Letter of Transmittal

Dr. Najmul Hasan

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66 Mohakhali, Dhaka-1212

Subject: Submission of Internship report

Dear Sir,

It is my pleasure to submit my internship report regarding “Benefit Assessment of EDOTCO Bangladesh's Solar Capex Investment and Customer Satisfaction”, which I was appointed by your direction.

I have attempted my best to finish the report with the essential data and recommended proposition in a significant compact and comprehensive manner as possible.

I trust that the report will meet the desires.

Sincerely yours,

Rohan Zaman Sajid

21364023

BRAC Business School

BRAC University

Date: November 07, 2023

Non-Disclosure Agreement

The undersigned student at BRAC University and EDOTCO Bangladesh have agreed that no sensitive information has been released in this report and that all data utilized in this report has been altered from the original data. However, the high-level analysis and outcome closely match the reality.

Acknowledgment

At the beginning, I would like to begin by expressing gratitude toward Almighty Allah for giving me the ability to carry out my daily job and the internship report at EDOTCO Bangladesh.

I would like to express my heartiest gratitude to my supervisor, Dr. Najmul Hasan, Assistant Professor, BRAC Business School, for his continuous guidance, encouragement, and patience, and for giving me the opportunity to do this work. His valuable suggestions and guidance made it possible for me to prepare a well-organized report.

I am indebted to Mr. Sohel Ahmed, Associate Director, ECHO Helpdesk (L1), who gladly gave me much of their valuable time in providing me with support and knowledge. I am grateful to work at EDOTCO Bangladesh as a Senior Engineer, Operation Division, from 16th October 2019 till now.

Executive Summary

Over 54,000 towers are part of EDOTCO's regional portfolio, of which 35,140 are directly operated and 18,860 are managed. EDOTCO Bangladesh has expanded our built-to-suit and co-location options with a portfolio of more than 18,000 towers and managed sites to help telecommunications carriers effectively fulfill their expanding infrastructure needs.

EDOTCO 's primary focus is now on the sustainability of its towers as they strive to become one of the top 5 Towaco in the world. They are spending a lot of money each day on fuel and power savings since they are concerned about saving energy. This paper will examine the value of capital expenditures for sustainability, the difficulties in realizing the benefits of such investments, customer focus in terms of marketing mix, as well as some conclusions and suggestions for enhancing the monitoring system for those expenditures so that customer and the company both gets benefited and therefore, we create a sustainable business.

Keywords: Sustainability; Solar Panels; Remote Monitoring System; Capex Investment; Solar Generation

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List of Acronyms

E.co	EDOTCO
BD	Bangladesh
PIR	Post Implementation Review
O & M	Operations and Maintenance
E Bill	Electricity Bill/Energy Bill
Capex	Capital Expenditure
CSR	Customer Satisfaction Rating
Opex	Operational Expenditure
RMS	Remote Monitoring System

Chapter 1

Overview of Internship

1.1 Student information

Name: Rohan Zaman Sajid

ID: 21364023

Program: Master of Business Administration

Major: Marketing

1.2 Internship Information

Period, Company Name, Department, Address

Period: October 16, 2019 – Present

Company name: EDOTCO Bangladesh Company Limited.

Department: Operations

Address: UDAY Tower, 57 & 57A, Gulshan Ave, Dhaka 1212

Internship Company Supervisor Information

Name: Sohel Ahmed

Position: Head, ECHO Helpdesk (L1)

Email: s.ahmed@edotcogroup.com

Contact No: +8801819710110

Job Description

A job description generally refers to the obligations and responsibilities associated with a position. As an engineer, it is my responsibility to monitor and assess energy and operational efficiency projects to make sure they are in line with the organization's goals and KPIs. Help to oversee the operationalization of Echo's project governance, training, knowledge transfer, and post-implementation support activities. Senior management should be updated on the general status of significant initiatives, including identifying crucial success factors and related dangers. Analyze trends and report on passive infrastructure to promote proactive problem management. I am in charge of continually enhancing operational procedures, driving operational efficiency, and finding new, effective reasoning and approaches to aid in energy management and boost organizational productivity. Serve as the local solution architect for echo & ACSYS solutions to assist other business units. Use Echo to monitor and drive important cost-saving initiatives, such as e-bill reconciliation, battery performance, and fuel control. In complicated data sets, recognize, analyze, and interpret any trends or patterns.

1.3 Internship Outcomes

While looking at the overall report and deriving outcome, putting below points which should come into play.

Financial Impact Assessment

The study unequivocally illustrates how EDOTCO Bangladesh's solar Capex expenditure has affected its bottom line. This covers the cost savings brought on by lower power bills and the financial gains associated with the production of solar energy. The financial data makes a convincing argument for the investment by demonstrating how it fits with cost-cutting objectives.

Brand Image and Environmental Responsibility

The study highlights the company's dedication to environmental responsibility and sustainability. In a time when customers are placing a greater value on eco-friendly activities, this can improve the company's brand image and reputation. Increased consumer loyalty and trust may result from this.

Consumer Satisfaction:

The paper emphasizes how investing in solar has improved consumer satisfaction. Customer's value EDOTCO's services for their dependability, environmental awareness, and cost savings. Increased customer satisfaction may result in lower churn rates and maybe more repeat business from current clients.

Strategic Direction

The paper emphasizes the need of making strategic choices that put customer pleasure and sustainability first. It presents EDOTCO as an innovative and customer-focused business, which may appeal to potential backers, collaborators, and clients.

Potential for Growth

The report can also encourage conversations about raising the solar Capex investment or looking into further sustainability initiatives. It invites strategic discussions on the company's future course.

Data-Driven Decision-Making:

By using a strong data-driven strategy to present the report, you show that your findings are supported by reliable data. This might boost stakeholder trust in your suggestions and motivate them to act on the contents of the study.

In conclusion, this paper offers a thorough analysis of the solar Capex investment made by EDOTCO Bangladesh, highlighting its financial advantages, environmental responsibilities, and favorable effects on customer satisfaction. In addition to proving the initial investment was worthwhile, it also offers a blueprint for upcoming sustainability and customer-focused initiatives, setting up the business for long-term success and development.

Chapter 2

2.1 EDOTCO Bangladesh Company Limited

Introduction

In order to complete their graduate program, BBS students at BRAC University must participate in an internship program. This program aims to improve students' abilities to cope with the working environment in the future or to provide them with real-life work experience.

As I was already working in EDOTCO Bangladesh even before I started doing my MBA, my report is based on my workplace. I work in Operation Division of EDOTCO Bangladesh corporate office. This report will showcase my task, value addition in customer

2.2 Overview of EDOTCO:

The first and top regional integrated telecoms infrastructure services provider in Asia is EDOTCO Group. In the field of tower services, where we specialize, we offer end-to-end solutions for co-locations, custom builds, energy, transmission, and operations and maintenance (O&M). Over 54000 towers are included in our regional portfolio, of which EDOTCO directly operates 35140 and manages the remaining 18860 [1]. Our cutting-edge real-time monitoring solution, echo, which helps to enhance field operations while improving operational efficiencies, also supports us.

The EDOTCO Group has offices in Bangladesh, Cambodia, Sri Lanka, Myanmar, Pakistan, Laos, and the Philippines in addition to its headquarters in Kuala Lumpur, Malaysia. For the benefit of our clients, staff, communities, and developing nations, we are dedicated to operating our business in a responsible and sustainable manner while following the highest standards of integrity. [1]

2.3 Mission Statement:

In business, each second is significant. It's critical to be connected. A connected world requires secure connection since a single failed link might have disastrous consequences. the center of the digital universe. EDOTCO is now recognized as the crucial provider of telecom infrastructure services that support the operation and expansion of other industries in the digital economy. EDOTCO is devoted to provide connection that is trustworthy, secure, and effective both now and in the future.

EDOTCO, founded in 2012, is Asia's biggest integrated telecommunications infrastructure services provider, offering full-range solutions in the tower services industry, including colocations and tower leasing. Built to accommodate cutting-edge technologies, operations, and maintenance related to energy supply. Over 31,000 locations across the key markets of Malaysia, the Philippines, Cambodia, Laos, Myanmar, Bangladesh, Pakistan, and Sri Lanka make up the regional portfolio that EDOTCO operates and maintains [1]. At EDOTCO, we work hard to offer telecoms infrastructure services and solutions that function remarkably well. In order to maximize operational effectiveness, our State of the ART Realtime monitoring solution, Echo, offers secure and effective energy monitoring in field operations.

EDOTCO is characterized by how we address issues, not just by the buildings we construct. Our hard-working teams are concentrated on research and plans that continually work to foster communications innovation while altering our clients' businesses and the communities we serve. At EDOTCO, we support community empowerment, nation building, and constructing a sustainable future for all [1].

The sole vision of EDOTCO is “Leading sustainable digital connectivity in Asia.”

The mission of EDOTCO is “Accelerating equitable next-generation connectivity.”

2.4 Aspiration:

Providing top-notch telecom infrastructure services and solutions to enable connectivity for the future. (AboutEdotco).

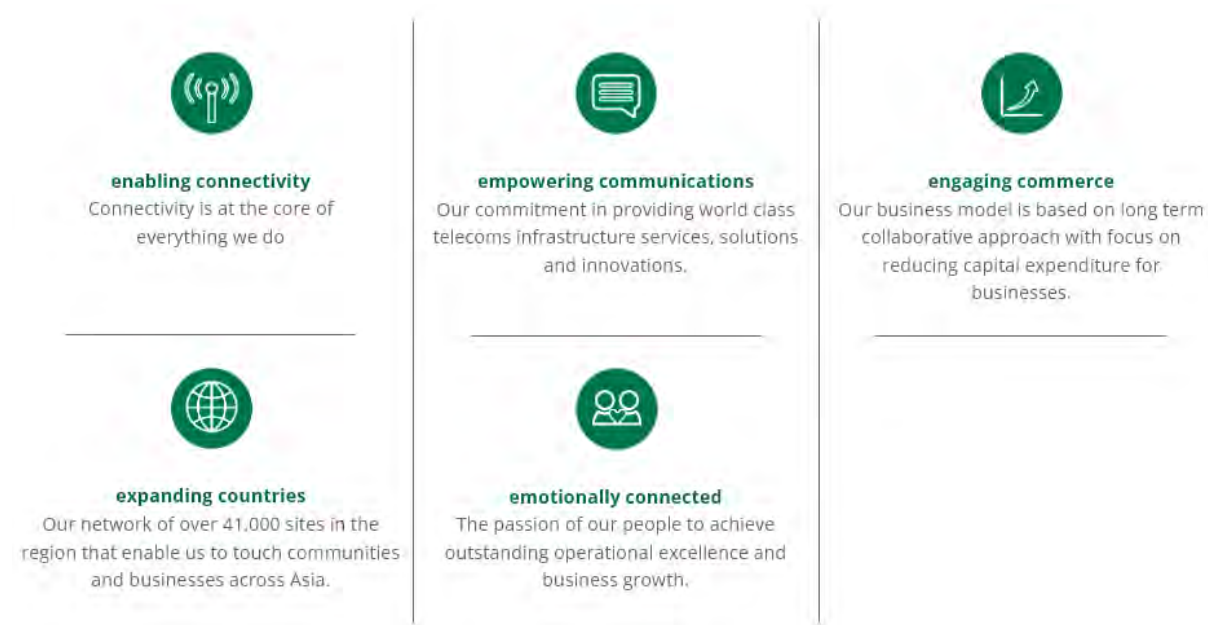


Figure 1: Aspiration

2.5 Value Proposition:

At EDOTCO, we combine best-in-class services with an all-encompassing operational strategy, starting with infrastructure and ending with cutting-edge solutions and managed services from beginning to finish. Through innovation, rationalization, optimization, and automation made possible by our people, products, and services, we provide essential value in a number of domains. [1]



We Deliver Connections

Our broad portfolio of over 41,000 towers across Asia, allows us to provide diverse array of innovative solutions to meet the demands of communities and businesses.



We Go Beyond Towers

Providing innovative solutions from tower designs, in-building solutions and energy, bridging the gap in keeping communities and industries connected.



We Synergize for Success

Our business models develop and offer shared success to our partners.



We Are Committed To The Future

We evolve the business of connectivity for sustainability, making a positive impact on the environment and lift the limits for a more connected tomorrow.

Figure 2: Value Proposition

2.6 Corporate Governance:

The EDOTCO Group is aware of the significance of upholding strict corporate governance in order to expand chances for long-term sustainability. The Board is dedicated to fostering an ethical corporation that upholds the highest standards of business conduct at all times. By respecting our key ideals of Uncompromising Integrity and Exceptional Performance (UI.EP), we improve communications for the future now. [1]

2.7 Organizational Structure (Stretched up to Operations)

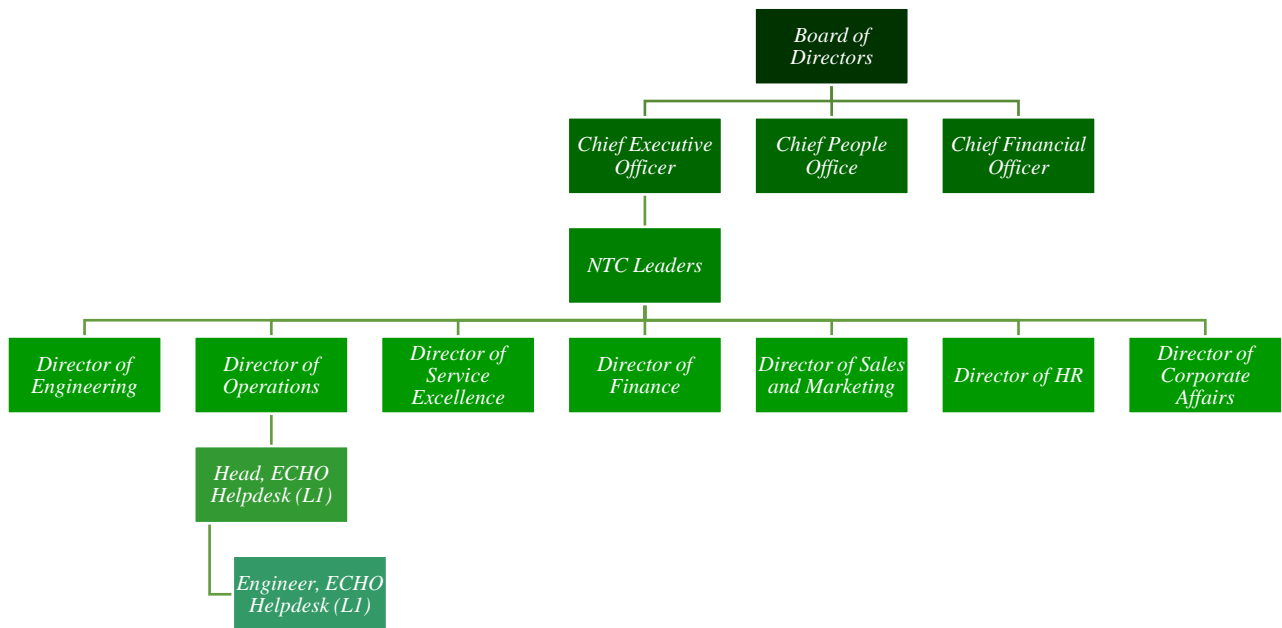


Figure 3: Company Organogram

2.8 Products and Service

Before choosing a tower that best meets your demands, it's vital to take into account a variety of elements, including the tower's design, height, weight, and construction materials. Our wide selection of towers and creative solutions are tailored to fulfill the expanding need for rapid market coverage with top-notch network infrastructure. [2]

Towers

Ground-Based Towers

Traditional 3-legged (tubular) and 4-legged (angular) ground-based towers in a lattice structure that can accommodate increased capacity and macro coverage needs [2].

To boost chances for expanded network coverage, Rooftops EDOTCO has partnered with property owners. With the aid of cutting-edge rooftop tower solutions, we assist our customers in meeting their demands to offer coverage in highly populated locations.

Monopoles

These poles may be custom constructed for a range of single or multi-user setups thanks to their hollow tubular or polygonal tubes. In order to satisfy regional aesthetic and zoning regulations, flange joint or slip in joint assembly solutions are provided. Due to its sleek form, it is perfect for use in congested places [2].

Special Structure

The purpose of EDOTCO 's unique structures is to reduce visual effect on the environment while simultaneously providing coverage support in metropolitan locations. These structures include cutting-edge solutions like monopole, attractive monopoles, lamp poles, and quick assembly pole. Additionally moving forward, EDOTCO offers sustainable options like carbon fiber and bamboo buildings that are made from sustainable resources. These developments strengthened EDOTCO's position as a leader in environmentally friendly and sustainable engineering. [2].

Temporary Structure

Portable infrastructure that can be transported on trucks for quick and simple installation in constrained spaces. In order to accommodate a sudden rise in mobile traffic during emergencies or special events, COWs are strategically deployed for the quick growth of the cellular network. COWs don't need foundations or civil works because they are intended to be a temporary solution. [2].

Solutions

Our towers may be tailored to your needs and offer solutions that other tower or mast systems cannot thanks to a large choice of customisable options and accessories.

In-Building Solutions (IBS)

End-to-end solutions with a particular focus on system design to improve coverage within a building are known as "in-building solutions" (IBS). The tailored In-Building Solutions from EDOTCO, which are built on a foundation of quality and dependability, provide clients with a high degree of network performance at a low total cost of ownership.

Base Transceiver Station (BTS) Hotel

The High-Speed Mobility Solution brings together fixed and wireless traffic resources in one place to give operators shared network connection. This makes it the perfect answer for forward-thinking townships that prioritize common infrastructure and skyline harmonization for locations with limited land [2].

Small Cell Solution

A network of very affordable, plug-and-play, open access, indoor cells is created by the smart tiny cell solution. Smart street furniture is a different application for the smart Small Cells technologies. In order to effortlessly fit into any urban environment, it improves the administration of public infrastructure to provide connection such as free WiFi through digital signage, smart benches, or even completely integrated smart bus stops. It may provide both extensive interior capacity and coverage and outdoor use. (Products)

Energy

We provide a range of options to guarantee an economical and ecologically responsible energy supply. To address certain problem areas, our customers may select the solution that best suits their needs.

Energy Ala Carte

Giving our clients the freedom to select, implement, and manage different energy ecosystem components that meet their business needs enables them to complement their current assets while taking advantage of end-to-end energy management solutions [2].

Energy as a Service

Offering a broad range of energy solutions to our clients with committed uptime KPIs, dependable network availability, uninterrupted energy supply, and the opportunity to share energy assets. While achieving cost and operational efficiencies, we effectively power our customers' active equipment.

Green Energy

Giving our clients cutting-edge hybrid solutions made up of energy-efficient and renewable resources will help them accomplish their carbon reduction goals without sacrificing network performance, which will save them money. [2].

Managed Services and Operations & Maintenance

We provide end-to-end management of active and passive managed services to ensure high quality networks and reliable network uptime, letting our clients to concentrate on their core businesses. We do this by using our regional experience and best practices from throughout our footprint.

Active: Field O&M on active components, such as BTS, Antenna, and Transmission.

Passive: Infrastructures that are passive, such as towers, shelters, power systems, etc.

Managed Services: Scheduled, On-Demand, & Real-Time.

We have been able to achieve more proactive tower maintenance by utilizing contemporary automation technologies and next-generation technology like drones.

We have been able to achieve more proactive tower maintenance by utilizing contemporary automation technologies and next-generation technology like drones. Predictive analytics helps us better service our customers by preventing possible failures from happening, assuring design compliance, minimizing human mistakes, and increasing field crew productivity.

Through our impartial involvement with property managers, logistics managers, local authorities, and a variety of other stakeholders, we are able to get the best terms for our clients in our capacity as an independent infrastructure firm.

With the use of advanced data analytics, our Next Generation Operating Model will offer real-time and effective managed services, give insights, and foster innovation to satisfy client expectations. [2].

Fiber

Fiber connectivity is increasingly necessary to support 5G and other technologies, as well as the rising demand for data use. In order to deliver connection infrastructure with multi-tenant capabilities, including fronthaul and backhaul fiber services, we collaborate with several industry experts.

Chapter 3

Project part

3.1 Introduction

As part of the MBA degree's practical orientation requirement, I have chosen to provide my firsthand knowledge of the operations of the company I work for as a Tower Infrastructure Service Company. As of right now, I am employed by EDOTCO Bangladesh as an engineer in the ECHO Helpdesk (L1), Operations department.

My job is divided into three categories: governance generally, leadership, and support. I train, advise, and manage employees in a supportive capacity throughout a project. As the project's leader, I actively oversee its completion on schedule. As part of my governance position, I make sure that every project in the organization follows the framework. As I complete my MBA school with a marketing concentration, I would need a report on my internship that is based on data-driven logistics client satisfaction.

"Completing a project" does not mean that the project management process is over. A project's completion does not ensure that the organization will gain from its results. It will also need to ensure whether customer is satisfied with the service or not. I'll research the capital investment's return from the previous year 2023. I'll look at better ways to realize the savings and advantages. This will also demonstrate whether EDOTCO is making the correct investments in sustainability and energy efficiency. Furthermore, we must make sure that the return from revenues and savings materializes in the next years and we retain customers on the same page so that same service can be provided to the customers coming years.

2.2 Problem Statement

The goal of this study is to determine the benefits of EDOTCO Bangladesh's capital expenditures in terms of customer requirement where company gets benefited keeping the customer satisfied and also ensuring sustainable future for the organization through supporting environmental slogan. To make it easier for the reader to grasp, this article includes several graphs, different approaches of marketing strategy to determine customer need aligning with company's vision. Business organizations throughout the world are facing two issues due to rising energy costs and growing environmental concerns. EDOTCO Bangladesh took on these difficulties head-on, attempting to lower operating costs while integrating sustainable practices while retaining the customer.

3.3 Objective of the study

The main goals of this investigation are:

- Analyze the financial and environmental advantages of EDOTCO Bangladesh's solar Capex investment to determine its marketing value.
- Analyze how this expenditure will affect consumer satisfaction and look at how it may be used for marketing.
- Showcase how EDOTCO Bangladesh's strategic transition to solar energy is in line with marketing plans and strengthens the company's reputation as a leader in the sector that is environmentally sensitive.

3.4 Methodology

We used an effective mixed-method strategy to achieve these goals:

- **Primary Data:**

Here, the Business Case data will be utilized as the main source of information and the foundation for calculating the project's benefits. To maintain the secrecy of the company all data utilized here will be based on assumptions.

Particulars	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Add-On Revenue		19.32	19.32	19.32	19.32	19.32	96.6
Solar Generation		9.19	9.19	9.19	9.19	9.19	45.96
Electricity saving							
Opex Saving		20.99	20.99	20.99	20.99	20.99	104.94
Total Revenue & Opex Saving		49.5	49.5	49.5	49.5	49.5	247.5
Opex							
Repair & Maintenance		-	-	-0.28	-0.41	-0.55	-1.25
SIM Cost		-3.09	-3.09	-3.09	-3.09	-3.09	-15.44
Insurance premium		-0.12	-0.12	-0.12	-0.12	-0.12	-0.62
EBITDA		46.29	46.29	46.01	45.87	45.73	230.19
EBITDA %		93.50%	93.50%	92.90%	92.70%	92.40%	93.00%
Depreciation		-30.18	-30.18	-30.18	-30.18	-30.18	-150.91
EBIT		16.11	16.11	15.83	15.69	15.55	79.28
Interest expense		-15.09	-12.62	-9.9	-6.91	-3.62	-48.14
EBT		1.01	3.49	5.93	8.78	11.93	31.14
Tax		-0.38	-1.31	-2.22	-3.29	-4.47	-11.68
PAT		0.63	2.18	3.7	5.49	7.46	19.46
PAT %		1.30%	4.40%	7.50%	11.10%	15.10%	7.90%

NPV	0.16
IRR	14.05%
Payback Period	Year 5
ROIC	21.54%

Figure 4: Primary Data Pattern

- **Secondary Data:**

Energy bills and data gathered from remote monitoring systems will be utilized to compare the promised and actual advantages (Electricity Bills and Petrol Generator Runhour). For instance, the difference between the power bills at the Tower locations before and after solar installation will be compared to show how much electricity we are saving. Additionally, the business has

conducted a customer satisfaction survey to gauge the level of service that EDOTCO is offering.

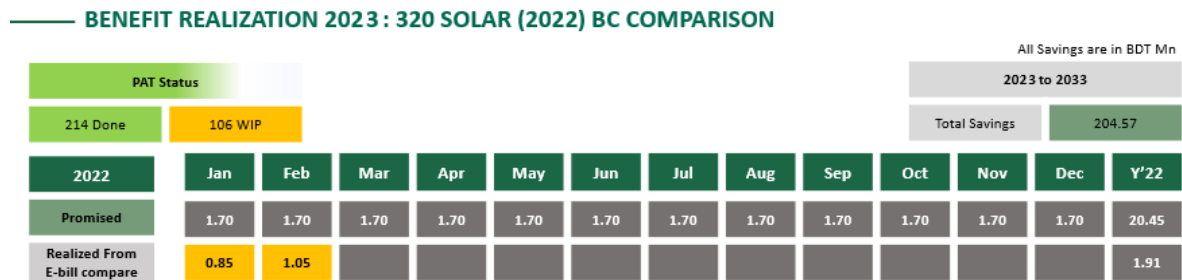


Figure 5: Secondary Data Pattern (Benefit deriving)

NO.	Item	Quite satisfied		Satisfied		Acceptable		Dissatisfied		Quite dissatisfied		Reason and advice
		10	9	8	7	6	5	4	3	2	1	
1	Service attitude			✓								
2	Quality of products				✓							The product quality need to improve to maintain accuracy
3	Disposal of defective products			✓								Contingency plan needed to take care of the defect items.
4	Improvement of problem		✓									Satisfied as previous issue was noted and taken care of.
5	Production Capacity					✓						EDOTCO need to deploy faster to catch up.
6	Delivery requirements				✓							EDOTCO need to deploy faster to catch up.
7	Technical Capacity		✓									Provided solution is technically sound and eco friendly
8	Marketing satisfaction		✓									Marketing approach was up to the mark
9	Sales service				✓							After sales O&M services need some brushups

Figure 6: Secondary Data Pattern (Customer Satisfactory Survey)

3.5 Limitations

It is important to recognize several constraints that can affect how our marketing-driven findings are interpreted.

- **Weather Dependence:** The production of solar energy is weather-dependent, which might cause changes in energy output.
- **Data Availability:** Calculations of savings may not be accurate if past energy use data is incomplete.
- **Sample Size:** Customer satisfaction surveys only include a portion of the whole customer base; thus, they may not accurately reflect overall satisfaction levels.

3.6 Benefit Assessment and Customer Satisfaction of EDOTCO Bangladesh's Solar Capex Investment

3.6.1 Solar Portfolio of EDOTCO BD

The nation's first hybrid solar-wind tower system was implemented by EDOTCO BD, which has over 1900 towers. In these solar sites, EDOTCO boasts a 90% RMS coverage rate. 10% more of the population has RMS coverage but no solar collection potential. Only 2% of locations lack RMS, and EDOTCO is determined to fix this by 2023. [2]

3.6.2 2023 Solar Capex Investment

EDOTCO is pledged to saving energy and reducing energy costs by investing about 100 Mn BDT to deploy 320 solar around the nation.

The group began accumulating money in January 2023. To calculate savings, two different approaches are used.

1. Savings Determined by Comparing Electricity Bills
2. Savings Calculated Using Solar-Generated Electricity.

3.6.3 Electricity Bill Comparison

In both urban and rural areas, EDOTCO Bangladesh uses government electricity, such as DESCO (Dhaka Electric Supply Company Limited) and PDB (Power Development Board). While most of the meters are postpaid, some of them are prepaid. Check out the total bill trend for these 320 solar sites as well as the DC Load trend prior to solar installation. [3]

Given the considerable drops in certain months, such as February, June, and November, together with the absence of any discernible changes in the DC load, the authority's bills are inconsistent. A further factor contributing to the increase in DC load from September to December was the addition of additional MNO to edotco's towers.

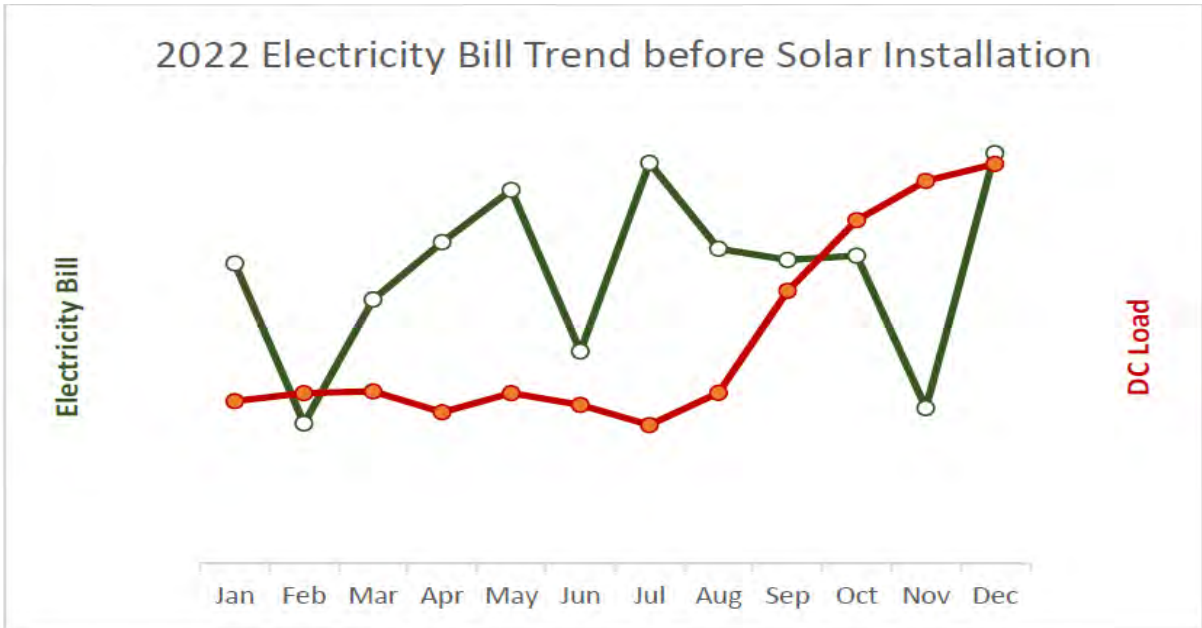


Figure 7: 2022 E Bill Trend

This occurs because the government-owned electrical supply business is understaffed. They make one of three monthly site visits and charge the other two months based on presumptions. They return to the locations three months later and make up for the high costs with genuine usage. When we compare against power bills after solar deployment, this produces falsely negative savings.

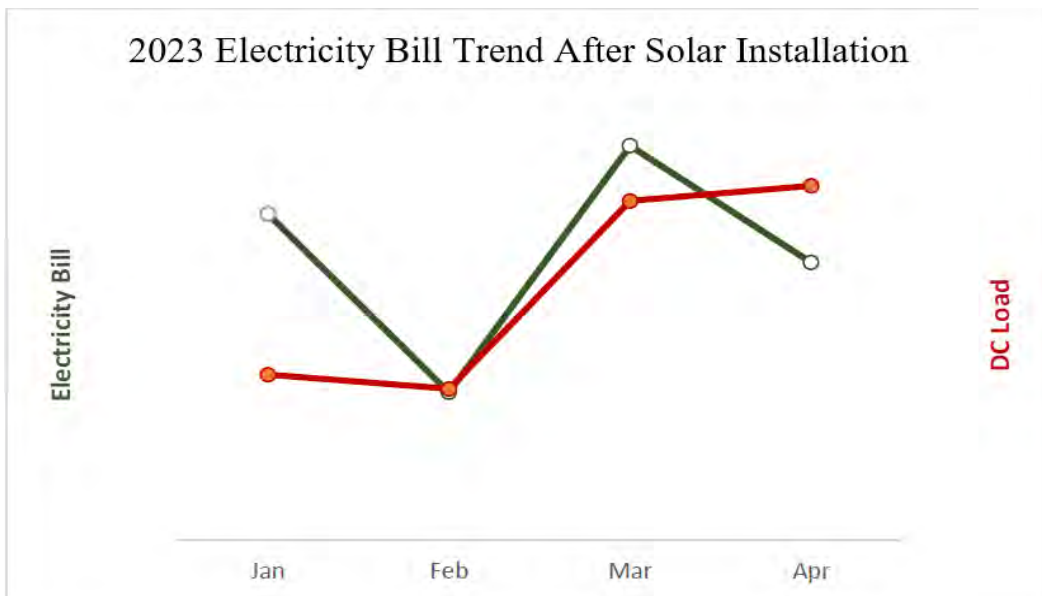


Figure 8: 2023 E Bill Trend

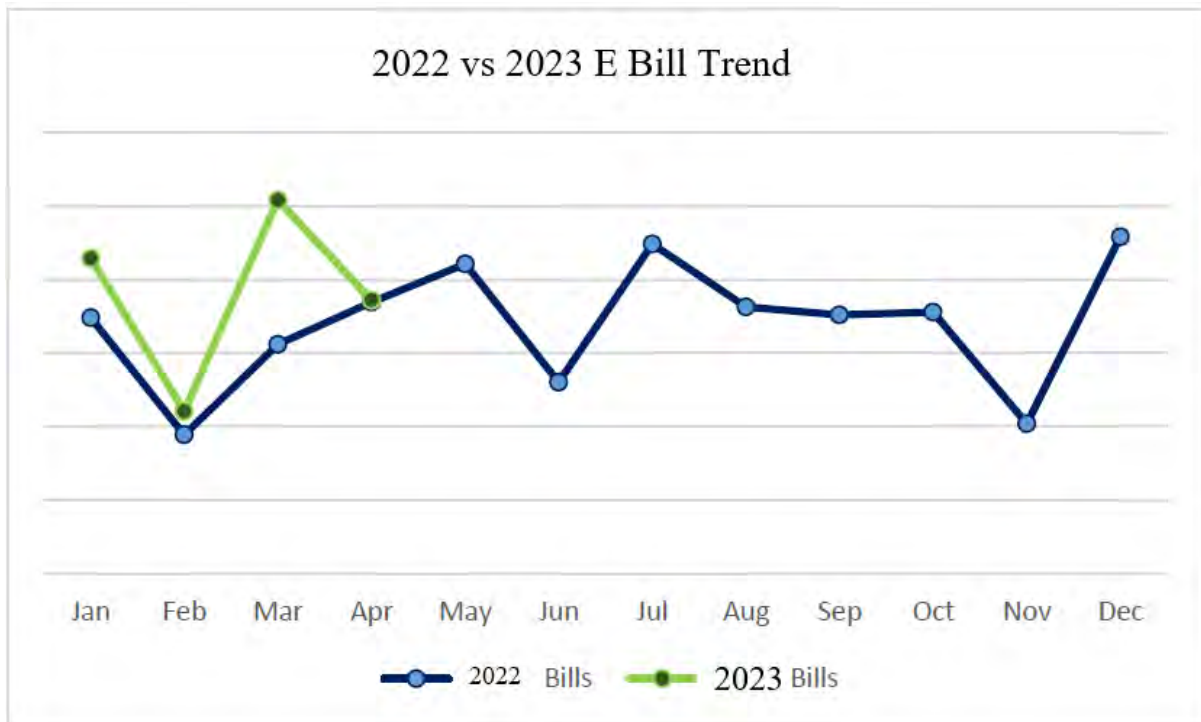


Figure 9: 2022 vs 2023 E Bill

Now, let's compare the average bills of 2022 with bills of 2023.

As we can see, even with solar deployment, power costs are a little higher in 2023, mostly due to the sites' increased DC load.

If we use the following formula to adjust for the increased load:

Normalized Electricity for 2022 with Increased Load for 2023

Standard=E-Bill plus (Increased DC Load* Tariff Rate*24 Hours*30 Days*) [5]

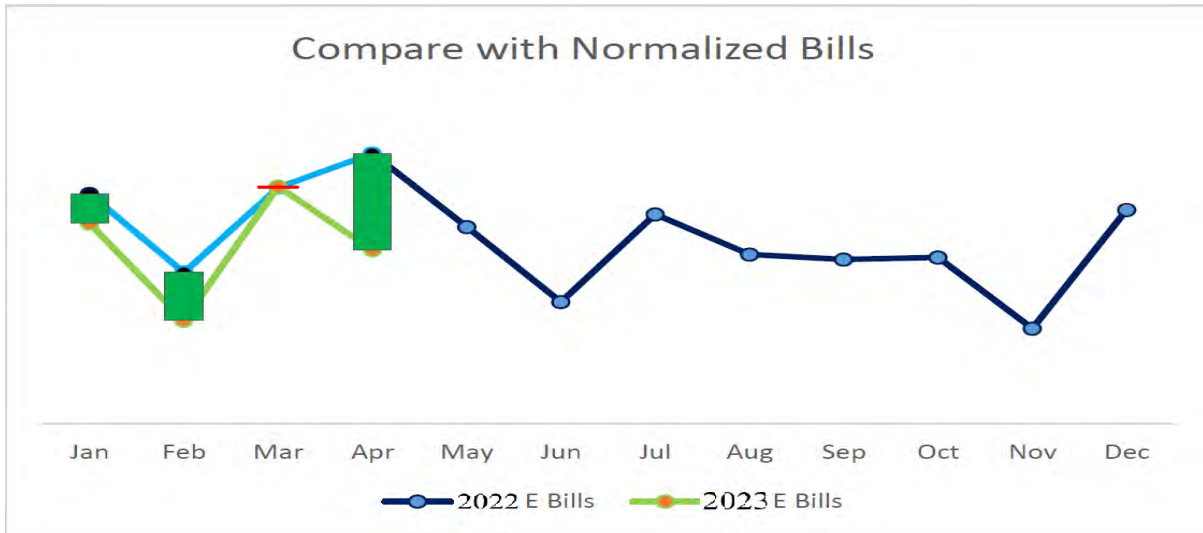


Figure 10: Comparison

With normalized E-Bills, we can observe that from January to April 2023, we saved different amounts of electricity: 3.63%, 6.53%, -0.13%, and 11.29%. However, there was a slight overconsumption in March 2023, and we believe this was caused by incorrect authority invoicing.

This demonstrates unequivocally that solar power has decreased electricity use, despite the sites' higher electrical loads as a result of new operators' investments in our tower.

Nevertheless, EDOTCO did not reach the anticipated savings goals for the month of April.

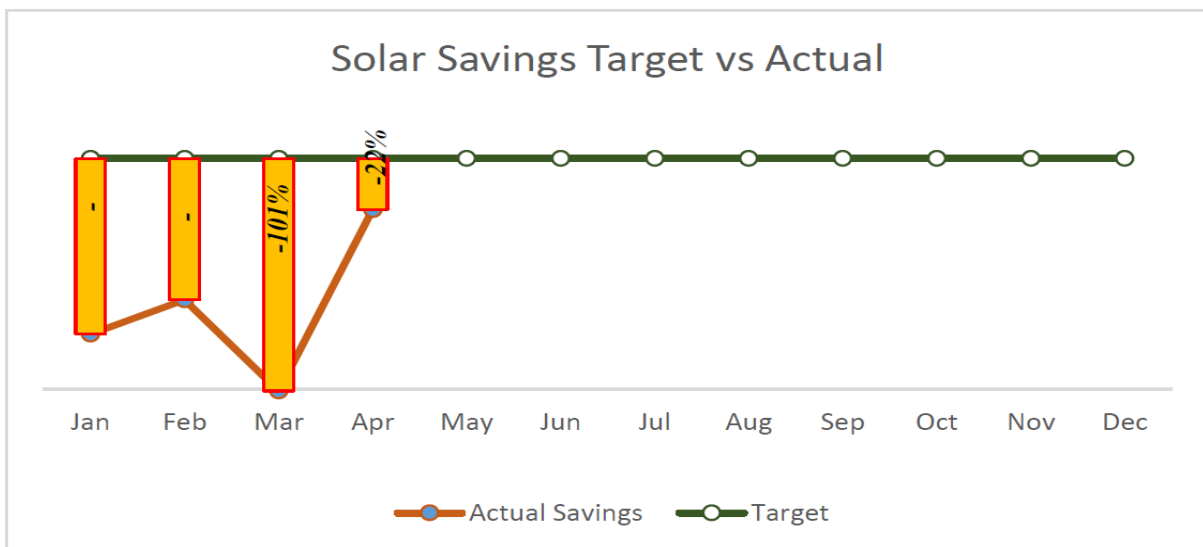


Figure 11: Target vs Actual (E Bill Comparison)

Therefore, based on the E Bill comparison, EDOTCO is not saving as much as promised in the 320 solar business case.

3.6.4 Savings Calculated from Electricity Generated from Solar

Only 80 of the 320 solar installations recently installed can be monitored remotely. 320 solar savings were calculated using a unitary technique for the sake of comparability. It is obvious that savings determined using solar data are larger than savings determined using an E Bill comparison. Solar savings are still less than what was promised, though.

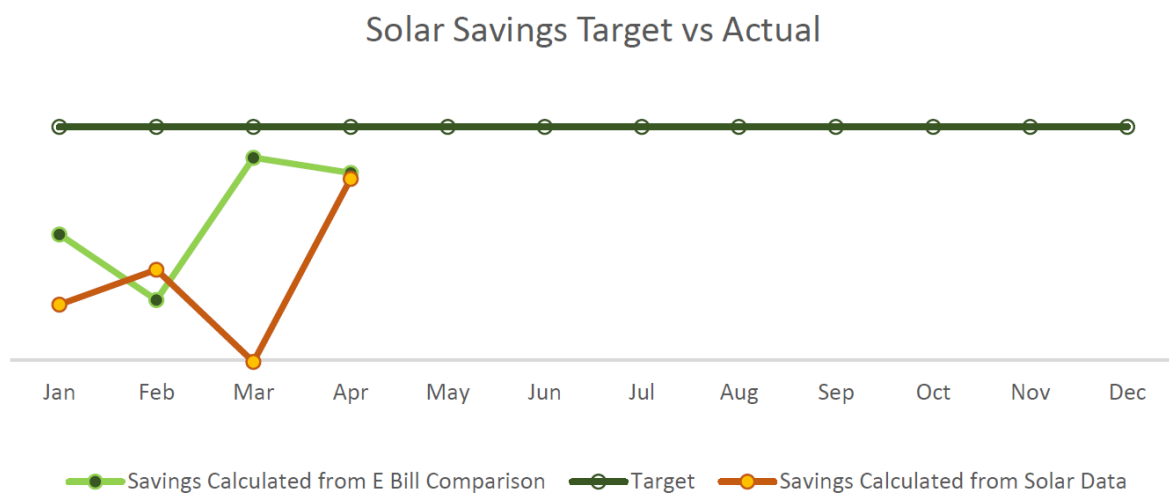


Figure 12: Target vs Actual (Solar Data)

3.6.5 Marketing Approach

PESTEL Analysis

A method for determining the macro (external) influences that are affecting an organization is known by the moniker PESTEL [17].

Political:

- **Supportive Regulations:** The government promotes renewable energy investments by enacting benevolent regulations, providing incentives, and providing subsidies.

- **Regulatory Stability:** Investments in solar energy are encouraged by stable regulatory environments in the energy industry.
- **Energy Independence:** EDOTCO's investment in solar energy is consistent with the government's goal to lessen reliance on conventional energy sources.

Economic:

- **Cost savings:** The solar investment substantially lowers operating costs, improving the company's financial situation.
- **Job Creation:** Jobs are created as a result of renewable energy efforts, which boost the regional economy.
- **Return on Investment:** Over time, the use of solar technology should result in significant savings in energy expenses.

Sociocultural:

- **Environmental Awareness:** Customers are becoming more interested in eco-friendly services, which improves the reputation of EDOTCO and client happiness.
- **Community Relations:** Relationships with Communities and Stakeholders: EDOTCO's dedication to sustainability enhances its connections with communities and stakeholders.
- **Expectations from customers:** Customers that care about the environment want firms to use sustainable methods, giving EDOTCO a competitive edge [17].

Technological:

- **Solar technical advancements:** Continuous advancements in solar technology increase efficiency and lower installation costs.

- **Smart Grid Integration:** New developments in grid integration and energy storage allow for more dependable solar energy use.
- **Data Monitoring:** EDOTCO can optimize energy production and consumption thanks to cutting-edge monitoring technologies.

Legal:

- **Energy Efficiency rules:** Ensuring that EDOTCO's activities are in accordance with legal standards requires compliance with energy efficiency and environmental rules.
- **Licensing and Permitting:** Solar systems must be efficiently licensed and permitted in order to prevent legal issues.
- **Commercial Agreements:** The success of the solar investment depends on the legal compliance of commercial agreements with partners and suppliers.

This PESTEL study emphasizes EDOTCO's solar Capex investment's supportive political and economic environment, alignment with sociocultural and environmental trends, the possibility for technical breakthroughs, and the requirement for legal compliance. Collectively, these elements support the investment's overall advantages and high client satisfaction [17].

SWOT Analysis

Using SWOT analysis to determine the advantages, threats, and weaknesses of your company. It directs to enhance the company strengths, fill in the weaknesses, take advantage of fresh opportunities, and reduce risks [18]

Strengths:

- **Cost savings:** By dramatically lowering operational expenses, the solar Capex investment improves the business's financial stability and competitiveness.

- **Environmental Responsibility:** EDOTCO's dedication to sustainability through solar energy is in line with contemporary consumer ideals, which improves the perception of the company.
- **Reliability:** Solar-powered infrastructure boosts service uptime, encouraging consumers to feel reliable.

Weaknesses:

- **Weather Dependence:** The production of solar energy is impacted by the weather, which might cause variations in energy output and service dependability.
- **High Initial Investment:** Installing solar equipment can be expensive up front, which has an effect on short-term finances.
- **Rivalry Pressure:** Industry rivals may use comparable sustainable techniques, escalating rivalry.

Opportunities:

- **Market Expansion:** To fulfill the rising demand for environmentally friendly services, EDOTCO may develop its market by providing solar-powered communication solutions.
- **Eco-conscious branding:** By emphasizing its green activities, EDOTCO can stand out and draw in clients who care about the environment.
- **Technological Innovation:** As solar technology advances, EDOTCO is able to improve energy production and consumption while minimizing vulnerabilities.

Threats:

- **Competition:** Intense competition in the telecom infrastructure business might have an influence on price and market share.
- **Regulatory Changes:** The feasibility of the solar investment may be impacted by shifting regulatory conditions.
- **Weather Risks:** Solar energy generation that is dependent on the weather presents operational risks and may have an impact on customer satisfaction.

The company's strengths in cost reductions, environmental responsibility, and dependability are highlighted by this SWOT analysis. It draws attention to flaws in weather dependence, upfront investment costs, and market constraints [18]. However, it also highlights chances for market growth, building a brand as an environmentally conscientious business, and utilizing technical advancements. Threats include heightened competition, altered regulations, and weather-related concerns, all of which call for strategic planning to be mitigated.

Ansoff's Matrix

Ansoff's Matrix is a marketing planning model that aids in helping a company decide on its growth strategy for its products and markets [16]. Based on the product (new vs. existing) and market (existing vs. new) general factors, Ansoff separates the matrix into four strategy choices. Market penetration, market development, product development, and diversification are the four strategies in the Ansoff matrix.

Market Penetration

- **Strategy:** By supplying its current markets with solar-powered communication solutions, EDOTCO may further its market penetration.

- **Benefits:** By utilizing the company's existing client base and contacts, this method helps to promote cost savings and eco-conscious branding.
- **Considerations:** The retention and growth of the current client base depend greatly on customer satisfaction.

Market Development:

- **Strategy:** By entering adjacent businesses, such as consulting on renewable energy or supplying solar infrastructure to other industries, income streams may be diversified.
- **Benefits:** Market development increases EDOTCO's reputation as a creative supplier of sustainable solutions and creates additional business prospects by reducing reliance on a single market.
- **Considerations:** Success depends on thorough study and adjusting to the dynamics of the new market.

Product Development

- **Strategy:** Invest in R&D to produce cutting-edge solar technology solutions adapted to the changing requirements of the telecom infrastructure sector.
- **Benefits:** By providing cutting-edge solutions, product development guarantees EDOTCO keeps one step ahead of the competition, potentially growing its market share.
- **Considerations:** For profitability, it's important to strike a balance between development expenses and consumer demand.

Diversification:

- **Strategy:** Investigate brand-new markets or sectors, such renewable energy initiatives or home solar systems.

- **Benefits:** By entering new markets, diversification lowers company risk and can open up potential for major growth.
- **Considerations:** Diversification entails a higher risk and may call for sizable investments as well as a thorough comprehension of the new market.

Strategic possibilities for EDOTCO's solar Capex investment are highlighted by the Ansoff Matrix. While product development concentrates on innovation to preserve a competitive advantage, market penetration and development make the most of already-existing markets and customer connections. Although diversification entails greater risk and a wider strategy change, it has the potential to lead to significant gain. Each plan should be in line with the long-term goals of the business and the delight of the customers [16]. In conclusion, EDOTCO ought to use a fair strategy while dealing with the Ansoff Matrix. Its current market presence and reputation will be strengthened through market penetration and growth tactics. Product development will simultaneously keep its competitive advantage by providing novel solutions. To maintain consumer pleasure and brand integrity, diversification should be done with prudence and a deep grasp of new markets.

Michael Porter's Competitive Advantage

Whether a company's profitability is higher or lower than the industry average depends on where it stands in relation to other businesses in the same sector. Sustainable competitive advantage serves as the essential foundation for long-term profitability that is above average [13]. In order to obtain a sustainable competitive edge in their respective sectors, firms might use the tactics outlined in Michael Porter's Competitive Advantage framework. It is founded on the cost leadership and differentiation key strategies. EDOTCO should largely pursue a Differentiation Strategy based on Michael Porter's framework in order for its investment in solar technology to produce a competitive advantage and consumer benefit:

1. Differentiation through Innovation:

To offer clients something special and worthwhile, EDOTCO should work to develop its solar solutions. This may entail:

- **Modern Solar Technology:** To optimize effectiveness and reduce downtime, invest in cutting-edge solar panels and energy storage systems, which will ensure higher dependability for telecom infrastructure [9].
- **Customization:** Develop solar solutions that are tailored to each telecom client's unique energy requirements and limits. Customized packages show a dedication to solving each client's unique concerns.

2. Quality Service:

Differentiation applies to services as well as products. EDOTCO should concentrate on providing excellent service:

- **Customer service that responds:** Provide quick, efficient customer service to resolve any difficulties right away. Customer satisfaction is increased when issues are handled immediately [7].
- **Proactive Maintenance:** Schedules for preventative maintenance should be put in place to reduce the likelihood of telecom services being interrupted. Uptime and dependability may be increased by proactive monitoring and routine maintenance.

3. Eco-Aware Branding:

Use solar technology's environmental advantages to set EDOTCO apart:

- **Green Branding:** Promote the solar investment's alignment with environmental aims through the use of green branding. Showcase the benefits of an environmentally conscientious strategy for both the local area and the world.

- **Reporting on Sustainability:** Regularly inform stakeholders and customers about environmental effect and sustainability accomplishments to reaffirm the company's dedication to ethical business practices.

4. Strategic Alliances:

Work with professionals and business leaders to preserve differentiation:

- **Technology Collaborations:** Collaborate with solar technology companies to gain access to the newest developments and guarantee that the systems are cutting-edge.
- **Industry Alliances:** To keep informed about market trends and best practices, join organizations and organisations that are dedicated to sustainability and renewable energy [5].

5. Constant Development:

To remain ahead, invest in continuing improvement projects:

- **R&D Investment:** Invest in R&D to ensure that solar technology and services are constantly improved and kept at the forefront of the industry.
- **Feedback Loops:** Gather consumer input to pinpoint areas that might be improved. Utilize this input to improve the client experience and solar solutions.

By providing cutting-edge, superior, and environmentally responsible solar solutions, EDOTCO can set itself apart from rivals in the telecom infrastructure sector by implementing Michael Porter's Differentiation Strategy. Customers will experience greater customer satisfaction as a result of receiving dependable, sustainable, and personalized energy solutions catered to their unique needs [9]. This will not only give a competitive edge.

Chapter 4

Findings, Recommendations and Conclusion

1. Findings and analysis

These conclusions are drawn from the above marketing matrices:

1. According to contemporary marketing cost-benefit matrices, the solar Capex investment portrays EDOTCO as a financially sound and ecologically responsible company.
2. By installing solar, the dependency on Grid has reduced, resulting customer is paying less on electricity bill, enjoying high site uptime, which increases credibility and customer retention rate is higher.
3. Increased brand loyalty, a crucial marketing asset, is enhanced by increased consumer happiness.
4. The investment enhances EDOTCO's marketing positioning as a pioneer in the green Bangladesh's electricity provider authority does not charge customers based on actual use each month.
5. Govt electricity meter readers go to the locations of the mobile towers every three months, collect meter readings, and for the next three months, bill based on assumptions.
6. For improved observation, EDOTCO has not yet equipped all solar sites with a remote monitoring system.

2. Recommendations

It is advised to take the following steps to enhance marketing potential:

- **Diversify Renewable Energy Sources:** Diversify Renewable Energy Sources for a More Stable Marketing Message: Investigate a variety of renewable sources to reduce weather-dependent swings in solar energy output.
- **Continuous Monitoring:** To improve marketing efforts, implement a defined framework for continuing marketing evaluation of energy savings and customer satisfaction. Before installing solar on every site for sustainability, EDOTCO needs to make further investments in the monitoring system.
- **Revenue Leakage:** Because revenue leakage is unavoidable regardless of the amount of investment a firm makes if the outcome cannot be accurately recorded in a financial term.
- **The Alternate Solution:** The load on EDOTCO towers is rising as a result of the company receiving more orders from mobile network providers every day. As a result, Bangladesh's power consumption authority is under tremendous strain. This results in a lack of electricity not just in the towers but also in the surrounding region. The alternative to this increased need for power might be solar energy.
- **Money Matters:** In terms of money, solar is also more lucrative because requesting an upgrade to a power sanction load causes administrative issues that, regrettably, add time and money to the process and ultimately incurs a huge hassle for customers.

Conclusion

The goal of EDOTCO Bangladesh is to become one of the top 5 tower infrastructure companies in the world. With the aforementioned observations, conclusions, and suggestions, we can see that EDOTCO is already searching for methods to maximize the advantages of their capital investment. Without a remote monitoring system, effective maintenance is difficult and must be installed. The solar Capex investment by EDOTCO Bangladesh is revolutionary from the standpoint of the marketing matrix. By positioning the business as a cost-effective and environmentally conscientious brand, it has not only significantly decreased operating expenses but also attracted customers who are concerned about sustainability. By fusing marketing tactics with cutting-edge sustainability initiatives, customer happiness, and brand loyalty, EDOTCO is well-positioned to preserve its competitive advantage and establish itself as a preferred brand in the rapidly changing telecoms sector [12].

You need to plan ahead if you want to succeed in this highly sophisticated society and preserve the environment at the same time. EDOTCO is undoubtedly on the right track to making history. They may certainly accomplish their goals with the help of their Bangladeshi workforce's diligent and bright members.

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