

# SWOT Analysis of Uttarakhand Power Corporation, Uttarakhand

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**Abstract:** Electricity Distribution Companies in India have extremely weak financial position owing to high Aggregate Technical and Commercial Losses, still the government of India has increased grants and subsidies for these loss making electricity distribution companies. When the government starts allocating capital to loss making public electricity distribution companies rather than allocating in more efficient markets it often makes bad decisions at taxpayer expense. The case of electricity distribution in Uttarakhand has to be emphasized because here electricity distribution plays an important role in socio-economic development. It was analysed that a high positive relationship exists between the per capita electricity consumption and GSDP of Uttarakhand accepting the fact that Power sector plays a significant role in the economic development of the state but on the other side the Losses of UPCL imply high opportunity costs for the people of Uttarakhand because Despite Losses, Uttarakhand Power Corporation Limited (UPCL) receives high amount of grants and subsidies from government of Uttarakhand.

This study is a review literature on SWOT analysis, qualitative and descriptive in nature. The study will examine SWOT Analysis in a historical, theoretical, time frame perspective, as an effective situation analysis technique which plays an important role in the area of production, public relations, marketing, advertising and in any fields of requiring strategic planning. SWOT Analysis is an analysis method used to evaluate the 'strengths', 'weaknesses', 'opportunities' and 'threats' involved in an UPCL Ltd. In this qualitative and descriptive study, firstly the position of SWOT Analysis in the strategic management process is explained, secondly the components of SWOT Analysis is examined. The study includes an international sports wear brand's SWOT Analysis; historical origins of SWOT, advantages-disadvantages and the limitations of SWOT is also reviewed.

**Keywords:** SWOT Matrix, TOWS Analysis, TOWS Matrix, Planning, Strategic Planning.

## INTRODUCTION

Today most associations take part in strategic planning. Strategic planning is a way of assisting an association with being useful by aiding guide the portion of assets to accomplish objectives. It is a strategic management tools. As such it is a piece of key administration. In fact, strategic planning is a key to successful strategic management. Administration is the nonstop course of making, executing and assessing choices that empower

an association to accomplish its destinations. The strategic management process is a sequential set of analyses and choices that can increase the likelihood that an UPCL will choose 'good strategy', that is, that generates competitive advantages. Strategic management allows an UPCL to be more proactive than reactive in shaping its own future; it allows an UPCL to initiate and influence - rather than just respond to- activities -and thus to exert control over its own destiny (David, 2003: 15). Strategic management consists of the analysis, decisions, and actions an UPCL undertakes in order to create and sustain competitive advantages. It begins with vision. Vision is a picture of the future. It describes the desired future position of the UPCL. The second step of strategic management process is mission. An UPCL mission is its long-term purpose. Missions define both what an UPCL aspires to be in the long run and what it wants to avoid in the meantime. Objectives are the third step of strategic management process. Objectives are concrete goals that an organization seeks to reach. The next phases of the strategic management process are external and internal analysis, also called SWOT Analysis. Conducting an external analysis, an UPCL identifies the critical threats and opportunities in its competitive environment. It also examines how competition in this environment is likely to evolve and what implications that evolution has for the threats and opportunities an UPCL is facing. While external analysis focuses on the environmental threats and opportunities facing an UPCL, internal analysis helps an UPCL identify its organizational strengths and weaknesses. It also helps an UPCL understand which of its resources and capabilities are likely to be sources of competitive advantage and which are less likely to be sources of such advantages. Based on SWOT Analysis, UPCL can choose the appropriate strategy. Strategic choice is associated with vision, mission, objectives and the external and internal analysis of the UPCL; an UPCL is willing to make strategic choices. This is to say that an UPCL is able to choose its 'theory of how to obtain a competitive advantage'. The next step of strategic management process is implementation of strategy. Choosing a strategy means nothing if that strategy is not implemented. Strategy implementation occurs when an UPCL adopts policies and practices that are consistent with its strategy (Barney and Hesterly, 2006: 6-11). And the final step of this process is to obtain competitive advantage.

## Area of Study

Uttarakhand, a state in northern India has been selected purposively for the present study. The state of Uttarakhand has been particularly emphasized here because there is huge untapped potential of hydropower generation in this state and hydro power has a crucial role to play in ever growing electricity demand in India. Uttarakhand the 27<sup>th</sup> state of India, owing to its ecological and environmental conditions becomes one of the most important locations to produce renewable energy through hydro resources. Uttarakhand is, endowed with perennial rivers and several water streams and has a large potential for generating power through hydro resources. At present Uttarakhand is producing most of its renewable energy through hydropower plants. The State has an estimated potential of 18000 MW, in which 15000 MW is in large hydro segment and remaining 3000 MW of hydropower in the small, mini and micro hydro segment. Out of this only about 3988.05 MW of hydro power projects have been installed in the State which also includes small and mini hydro power plants

Uttarakhand Jal Vidyut Nigam Limited (UJVNL). To analyze the particularly the electricity distribution scenario in the state of Uttarakhand the present study selects the only electricity distribution company in the state i.e. Uttarakhand Power Corporation Ltd (UPCL). Uttarakhand Power Corporation Ltd (UPCL) at present is serving more than 18 lakh consumers of the state and providing 20-24 hours supply to all the consumers in spite of hilly terrain and difficult areas in the state. Even though the Uttarakhand government provides subsidy, but in reality, losses of UPCL infer high opportunity costs to the people of Uttarakhand.

### **Objectives of the study**

The functional domain of electricity comprises of three main functions viz. Generation, Transmission, and Distribution and every sector has its own issues. But, in the proposed study, our main focus is on electricity distribution function because it is the only function which has a direct interface between electricity sector and consumers. Also among the three domain areas of electricity sector (Generation, Transmission, and Distribution) the major portion of losses is attributed to transmission and distribution losses which are directly related to the electricity distribution function. In this study, researcher believes that if proper appraisal of financial management is done, all the stakeholders, the investors, the management, the staff and the public at large would be benefited in a better way from electricity distribution.

This study attempts to focus on whether UPCL have been successful in achieving the stated objectives of its establishment or not. Therefore, the study targets to achieve the following objectives:

1. To analyze the components of power sector of Uttarakhand.
2. To analyze the SWOT analysis of Uttarakhand Power Corporation.
3. To provide valuable suggestion and recommendations for the improvement of current financial performance of state.

### **Scope of the study**

The present study is confined to Hilly state of Uttarakhand and UPCL being the only electricity distribution company in the state of Uttarakhand. The detailed analysis of technical & financial performance of UPCL is carried out on the basis of two parameters as stated by UPCL for analyzing its performance

1. Customer service and satisfaction,
2. Aggregate Technical and Commercial Losses (AT&C losses) and collection efficiency.

The analysis of first parameter is based on primary data that will be collected from district Nainital which is geographically an idea representative of State of Uttarakhand.

### **Hypothesis of the study**

Hypothesis is usually considered as the principal instrument in research. Its main function is to suggest new experiments and observations in fact, many experiments are carried out with the deliberate object of testing hypotheses. Decision makers often face situations wherein they are interested in testing hypotheses on

the basis of available information and then take decisions on the basis of such testing.

Ordinarily when one talks about hypothesis, one simply means a mere assumption or some possibility to be proved or disapproved. But for a researcher hypothesis is a formal question that he intends to resolve. Thus a hypothesis may be defined as a proposition or set of proposition set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts. Thus, we may conclude that a hypothesis states what we are looking for and it is a proposition which can be put to a test to determine its validity.

The following hypothesis has been set out for the proposed study:

1. Power sector has played a significant role in the economic development of the state.
2. Uttarakhand Power Corporation Limited has failed to fulfill the objective of its establishment

## Research Methodology

Research Methodology is a way to systematically solve the research problem. it may be understood as a science of studying how research is done scientifically. In it we study the various steps that are generally adopted by a researcher in studying his research problem along with the logic behind them. All this means that it is necessary for the researcher to design his methodology for his problem as the same may differ from problem to problem. From what has been stated above, we can say that research methodology has many dimensions and research methods do constitute a part of the research methodology. Analytical research design has been used in the present study. The method adopted for this study is basically explanatory as well analytical in nature. UPCL states that performance of UPCL has to be analyzed on the basis of two major parameters,

- Customer Service & Satisfaction
- Financial performance in terms of T&D/AT&C loss reduction and Collection efficiency.

UPCL further states that parameter first parameter viz. Customer Service & Satisfaction can be evaluated on the basis of

1. % availability of network
2. Tripping index
3. Quickness/promptness in attending to consumer grievances /complaints with ultimate aim of zero complaints and grievances.

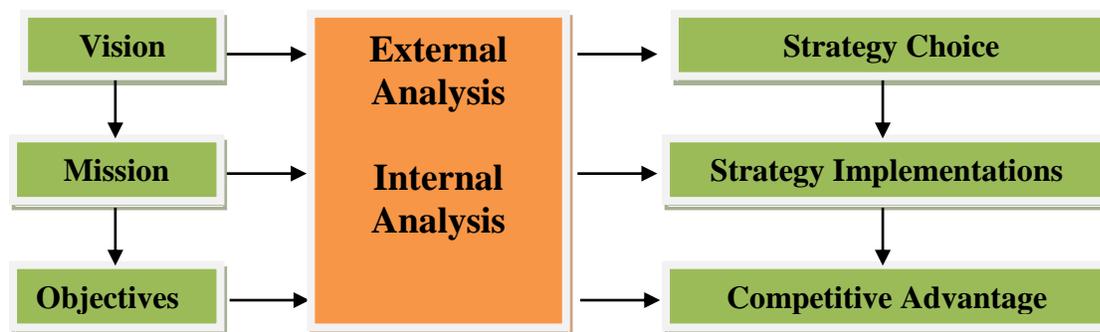
To analyse the quality of services delivered by UPCL the 3<sup>rd</sup> basis (Quickness/promptness in attending to consumer grievances /complaints with ultimate aim of zero complaints and grievances) is being selected for the study. The 1<sup>st</sup> and 2<sup>nd</sup> basis being related to technical aspect is outside the purview of this study hence is being not taken in the present study. The financial data and related information obtained from the Uttarakhand Power Corporation Limited and various sources have been analyzed and interpreted for making performance

evaluation judgments based on the financial ratios, questionnaire and inter firm comparison study.

## SWOT Analysis of Uttarakhnad Power Corporation

A SWOT analysis is a method or methodology used to evaluate and track both the macro and micro environmental factors which may have a significant impact on the performance of an organization. The SWOT analysis provides information which is useful in balancing the resources and skills of the company with the competitive environment in which it operates. As such, it is instrumental in formulating and choosing a plan. Applying this model will help UPCL assess attractiveness for the industry and consider its competitive market positioning. The research can also be used to make some strategically sound decisions which could boost UPCL's efficiency and ensure long-term survival.

### The Strategic Management Process



## Framework for SWOT analysis of UPCL

SWOT analysis is often used in conjunction with other analytical business tools such as the PEST analysis, Porter's Five Forces,<sup>1</sup> to give a clear understanding of a situation and related internal and external factors.

Below is an example of how different models are used in collaboration.

Analysis	Outcomes for SWOT
Porters 5 forces model	Opportunities and Threats
PEST Analysis	Opportunities and Threats

Table 1 Framework for SWOT analysis of UPCL

The present study will also use the above model to view external environment based on the analysis of PEST and the concept of Porters 5 powers. Analysis of the external environment will indicate chances and vulnerabilities for UPCL.

## Porter’s 5 forces model

In 1979 Michael E. Porter proposed a Porter Five (5) Forces Model. The aim was to assess and analyze

<sup>1</sup>Henri Fayol, General and Industrial Management, Ravenio Books, 2016

business organizations' strategic positions and strengths.

The model has three horizontal competitive forces (Danger of Substitute Products or Services, danger of new entrants and competition between existing companies) and two vertical forces (Buyers ' Power and Supplier's Bargaining Power).

The five forces concept developed by Michael Porter is the most widely known method for understanding the competitive environment, and helps to explain how strengths influence strategies and effect success in the competitive environment.

The following are the strategic forces<sup>2</sup>:

- 1) Rivalry among industry competitors
- 2) The potential entrants
- 3) Product alternatives
- 4) Supplier's negotiating power
- 5) Purchasers' bargaining power

These five powers, however, are not distinct from each other. Pressures from one direction can trigger changes in another that can shift competition sources. Each of these five forces is discussed in detail in the following section to explain how each of these forces influences the climate of an Industry so that one can determine the most suitable strategic position within the industry. Within any market, certain forces form competition. Competitiveness of the overall industry decreases when these forces decrease profitability.

### **Threats of new entrants**

The threat of new entrants reflects how new players in the market place threats against existing players. If the industry becomes profitable and barriers to entering the industry are low, it will attract more players and, therefore, the threat of new entrants is high.

Here are some factors which reduce UPCL's threat to new entrants:

- Entry into the industry demands substantial investment in capital and resources.
- UPCL will face the low threat of new entrants if the current regulatory framework provides the new companies interested in entering the market with some challenges. In this scenario, it will require new entrants to meet strict, time-consuming regulatory requirements that may deter certain players from entering the market.
- The danger will be small if there are high psychological switching costs for customers and a loyal customer base has been built by existing brands.
- Where access to distribution channels is restricted, new entrants will be discouraged.

How UPCL can tackle the Threat of New Entrants?

<sup>2</sup>PradhanSwapna, Retailing Management: Text and Cases, Tata McGraw-Hill Education, 2011

- Through focusing on customer relationship management UPCL will build brand loyalty. It will bring up the psychological cost of switching.
- To broaden access to the target market, it can develop long-term contractual relationships with distributors.
- UPCL can also invest in research and development activities, collect valuable customer data and implement new services to lay down a strong base for differentiation.

### **Threat of substitute products or services**

The inaccessibility of the replacement products or services makes the competitive environment of UPCL less demanding. Low threat from a substitute shows customers are unable to use alternative products / services from other providers. The magnitude of that UPCL threat is determined by several factors.

The Threat of Substitute Products or services increases when;

- A cheaper replacement product / service from another industry is available.
- The psychological cost of switching from industry to replacement products is low.
- Replacement product provides the same or even better quality and performance as the product sold by Bt Group Plc.

However, this threat is substantially low for UPCL when;

- The switching cost of using the replacement product is high (due to high psychological or low economic costs);
- Customers can not derive the same utility from the substitute product (in terms of quality and performance) as they derive from the UPCL.

How UPCL can tackle the Threat of Substitute Products or services?

- UPCL will reduce the Threat of Substitute Products or Services by demonstrating specifically how the product / service offered is better than the alternatives available.
- It should give the customers compelling reasons by offering better service and a good value for money.
- Through focusing on loyalty it can raise the cost of switching.
- Finally, it can improve quality, increase value for money and provide a strong basis for differentiation to deter consumers from using the replacement product.

### **Rivalry among existing firms**

The rivalry between established firms shows the number of competitors that offer UPCL tough competition shows that UPCL can face strong pressure from competing firms that can limit the growth potential of each other. Profitability in such industries is weak as companies take aggressive strategies for targeting and pricing against each other.

The Rivalry among existing firms will be low for UPCL;

- The market contains only a limited number of players
- The sector is growing rapidly
- There is one clear leader in the business
- The goods are highly differentiated, with each market player targeting various sub-segments

- The cost to consumers of economic / psychological switching is high
- The barriers to exit are small, which means companies can easily leave the industry without incurring huge losses

For example, if market players are strategically competitive and strive for the same market, the business will face intense rivalry among established firms. The competition will also be strong because consumers are not loyal to established brands and because of the low switching costs, it is easier to attract customers from others. Competitors of equal size and selling undifferentiated goods with slow growth in the market tend to take aggressive strategies against one another.

### **How UPCL can tackle the Rivalry among existing firms?**

UPCL should focus on its clients' implicit needs and expectations to strengthen the basis of differentiation. By developing long-term customer relationships, it should raise the switching costs. In order to identify new customer segments the company should also engage to research and development activities. In some cases it can be mutually beneficial to cooperate with rivals. The organization, too, should look for this alternative.

### **Bargaining Power of Suppliers**

In the Porter 5 force model, the bargaining power of suppliers represents the pressure exerted by suppliers on business organizations by implementing different tactics such as decreasing product availability, lowering quality or increasing costs.

This costs the buyers-(business organizations) when suppliers have good bargaining power. In turn, strong supplier bargaining power can improve market competitiveness and lower UPCL's income and growth potential. Likewise, poor supplier power can make the industry more competitive because of high productivity and growth potential. Supplier bargaining power will be high for UPCL when:

- Suppliers have concentrated in a specific region and are more concentrated than their purchasers.
- This force is particularly strong when the cost is high for consumers to turn from one supplier to another (for example, due to contractual relationships).
- If suppliers are few and the demand for their product offered is strong, this strengthens the stance of suppliers against UPCL
- The forward integration of suppliers weakens the role of UPCL, as they also become the competitors in the market.
- If UPCL is not well trained, lacks sufficient market knowledge and lacks price sensitivity, it inevitably confirms the stance of the suppliers against the organisation.
- Certain factors which increase the bargaining power of suppliers include high product differentiation provided by suppliers, UPCL making only a small proportion of the total sales of suppliers and the unavailability of the substitute goods.

Contrary to this, supplier bargaining power for UPCL will be weak if:

- Suppliers aren't focused

- Installation costs are low
- Material lacks distinguishing
- Substitutes are available
- UPCL is extremely price sensitive and is well versed in the industry
- Providers do not face any danger of forward integration

### **How UPCL can tackle the Bargaining Power of Suppliers?**

UPCL can reinforce its position against suppliers by reducing reliance on one or a few suppliers. Its price sensitivity will increase. Developing long-term contractual relationships with suppliers from different regions not only reduces their bargaining power but also enables UPCL to improve the efficiency of its supply chain. Eventually, UPCL will find alternative ways of producing the product if the demand for the product is high enough and the business has the skills and expertise needed. But to assess its feasibility it needs thorough cost-benefit analysis. Brand redesign and product line diversification can also allow the company to reduce the market power of suppliers.

### **Bargaining Power of Buyers**

Buyer bargaining power reflects the pressure exerted by consumers on business organizations to procure high-quality products and excellent customer service at affordable prices. This power directly affects the ability of the UPCL to attain the business goals. Good bargaining power reduces productivity and increases competition for the industry. Whereas, it makes the industry less competitive when consumer power is poor and increases UPCL's productivity and growth opportunities.

There are certain factors which increase the buyers' bargaining power:

- A more focused group of customers increases their negotiating power against UPCL
- Buyer power will also be high if they are few in number whilst there are too many sellers (business organizations).
- Low switching costs (economic and psychological) often increase the bargaining power of purchasers
- In the case of corporate clients, their willingness to do backward integration strengthens their market position. Backward integration shows the ability of consumers to manufacture the goods themselves, rather than purchasing them from UPCL

Some factors that decrease consumers' bargaining power include lower consumer concentration (meaning the customer base is geographically dispersed), customer failure to adapt backwards, low price sensitivity, lower market penetration, high transaction costs and small volume purchase of personalized goods.

Porter Five Forces	Interpretation	Result ( <i>Opportunity/Threat</i> )
Threats of new entrants	Low	<b>Opportunity</b>
Threat of Substitute Products or services	Low	<b>Opportunity</b>
Rivalry among existing firms	Low	<b>Opportunity</b>
Bargaining Power of Suppliers	High	<b>Threat</b>
Bargaining Power of Buyers	Low	<b>Opportunity</b>

Table 2 Results of Porter's 5 Forces Model Analysis of UPCL (Source: Author's Calculation)

## PEST Analysis

PEST Analysis is an easy and commonly used tool that helps you evaluate the changes in your business environment that are political, economic, socio-cultural and technological. This helps you understand the "big picture" powers of change you're exposed to, and from that you take advantage of the opportunities they bring<sup>3</sup>.

## Political Factors

Such considerations all contribute to how and to what degree a government is involved in the economy or some business. Essentially all of the influences a government has on your business can be classified here. That may include government policy, political stability or instability, corruption, foreign trade policy, tax policy, labor law, environmental law, and trade restrictions. Furthermore, the government can have a profound impact on the education system, infrastructure and health regulations of a country. Those are all factors which need to be taken into account when assessing a potential market's attractiveness.

Political Environment		
Dimension	Opportunity/ Threat	Rank
Political stability, Coordination between center and state government	Opportunity	1
Red Tapism, bureaucratic inefficiency and Corruption	Threat	2
Low political representation of Hills states evident in hill backwardness in comparison to high development in 4 non hill districts	Threat	2
Failure in e-governance initiatives	Threat	2
Political interference in tariff determination due to own electricity policy and pricing based on its own interest	Threat	2
Heavy investment for rural and urban electrification schemes as UDAY, SAUBHAGHYA	Opportunity	1
Peaceful Law and order situation	Opportunity	1
Subsidies provided by the government in a large amount to employees of	Threat	2

<sup>3</sup>G. V. SatyaSekhar, Business Policy and Strategic Management, I. K. International Pvt Ltd, 2009

UPCL and other public offices		
Lack of small hydro power project development as compared to mega hydro power projects	Threat	2
Industrial policy packages for state industrial development	Opportunity	1
<b>Modal value of Rank</b>	<b>Threat</b>	<b>2</b>
<b>Scale</b>		
<b>Opportunity</b>		
		1
<b>Threat</b>		
		2

**Table 3 Political Environment of UPCL (Source: Author's Calculation)**

In India, the issue of electricity is included in the Indian Constitution under the Concurrent List, which means that both central government and state governments have the power to legislate for the sector. All major issues affecting the power sector therefore need concomitant intervention from the central government and state governments. The multiple pricing regimes and state government distribution policies further exacerbated the power situation. Low revenue collection causes the situation to burst & slow growth of SEBs and then affect the power system. Government-subsidies were a large amount.

Since the state government irregularly paid these subsidies, SEBs did not plan any long-term implementation of the project, i.e. capacity extension, network expansion, regular maintenance and system enhancement. This also concerns SEB's losses in T&D. Severe financial losses have contributed to these utilities' almost complete incapacity to boost self-financing. The companies have borrowed heavily and their losses increased. In the past, government treasuries used to make good those losses, but until the 90's most treasuries were "empty". The lack of internally generated funds and the failure of treasuries to provide funds resulted in significant capital shortages to increase capacity generation and construction of infrastructures.

### Economic Factors

Economic factors are determinants of the success of a given economy. Factors include economic growth, exchange rates, inflation rates, interest rates, household disposable income, and jobless rates. These factors can have a direct or indirect long-term effect on a corporation, as it influences customers' purchasing power and could potentially change the economy's demand / supply models. Therefore it also affects the way businesses are selling their products and services<sup>4</sup>.

<b>Economic Environment</b>		
<b>Dimensions</b>	<b>Opportunity/ Threat</b>	<b>Rank</b>
Increase in GSDP	Opportunity	1
Infrastructure deficit	Threat	2
Increase in per capita income	Opportunity	1
High growth rate of services sector especially Tourism	Opportunity	1

<sup>4</sup>Perera, Rashain., The PESTLE Analysis, Nerdynaut, 2017

Increase in renewable energy development as hydro power, solar power etc.	Opportunity	1
Increase in Industrial development	Opportunity	1
stagnation in agriculture development	Threat	2
Anticipated high energy demand in future	Opportunity	1
Subsidies provided in agriculture, new industries, employees of UPCL, public offices,	Threat	2
The level of financial development indicated by The average population per bank branch in the State was favorable at 7,300 in March 2012 as compared to all-India average of 12,700.	Opportunity	1
<b>Modal Value of Rank</b>	<b>Opportunity</b>	<b>1</b>
<b>Scale</b>		
<b>Opportunity</b>		1
<b>Threat</b>		2

**Table 4 Economic Environment of UPCL (Source: Author's Calculation)**

Infrastructure is the basic requirement and detrimental factor for the growth and success of all companies— industrial or service. Infrastructure sectors, particularly electricity, have a direct bearing on all manufacturing companies' improvements. Industrial output growth in India has closely monitored moves in the infrastructure industry composite index. This observed relationship between growth in infrastructure and industrial performance has significant implications for maintaining higher growth in productivity. The decline in infrastructural growth between the 1980s and 1990s was largely due to the decline in electricity, coal, and petroleum production essentially the subsectors of energy. Identifying and bridging the gaps in sectorial infrastructure thus assumes critical importance for sustained, high growth.

### Social Factors

The general environment aspect reflects the demographic characteristics, traditions, practices, and population values within which the company works. It includes population trends such as population growth rate, distribution of age, income distribution, job attitudes, safety priority, health awareness, attitudes to lifestyle, and cultural obstacles. Such considerations are particularly important for advertisers when it comes to approaching other customers. Moreover, it also says something about the local workforce and their willingness to work under some conditions.

<b>Social Environment</b>		
<b>Dimensions</b>	<b>Opportunity/ Threat</b>	<b>Rank</b>
Increase in demand for clean fuel and source of lighting such as LPG and Electricity.	Opportunity	1
High rate of unemployment	Threat	2
Inequality in rural vs. urban development	Threat	2
Displacing of people due to big hydro power projects	Threat	2

Migration leading to Ghost Villages in turn leading to decreasing number of consumers	Threat	2
Loss of socio and bio diversity due to displacement of people e.g. Tehri	Threat	2
High share of households having access to basic civic amenities such as safe drinking water and electricity, ownership of household assets such as television, telephone etc. compared to the national average	Opportunity	1
Low Use of energy efficient devices due to high cost and quality product accessibility in hill areas.	Threat	2
Lack of high skilled manpower required for modern infrastructure services	Threat	2
Increase in consumer awareness level	Opportunity	1
<b>Modal Value of Rank</b>	<b>Threat</b>	<b>2</b>
<b>Scale</b>		
<b>Opportunity</b>		1
<b>Threat</b>		2

**Table 5 Social Factors of UPCL (Source: Author's Calculation)**

The new hydropower plant had an adverse effect on humans and the other animals. The core problem with displacement is the loss of livelihood for people and their potential impoverishment. The forcible relocation of populations creates barriers to the system of production. A lot of jobs are lost, a lot of valuable land, trees and other income generating assets. Relations are broken between producers and their buyers, and local labor market disruption. Landlessness, joblessness, unemployment, food insecurity, poor health, loss of biodiversity, etc. are the most common social threats.

### Technological Factors

These factors relate to technological innovations which may favorably or unfavorably affect the operations of the industry and the market. It applies to technology opportunities, the level of activity related to innovation, automation, research and development (R&D), technological change and the amount of technological knowledge a company has. These factors can influence decisions to enter or not enter certain industries, launch or not launch certain products or outsource manufacturing activities abroad. You may be able to prevent the business from spending a lot of money on creating a product that would quickly become outdated due to disruptive technological changes elsewhere by knowing what is going on in the technology-wise.

<b>Technological Environment</b>		
<b>Dimensions</b>	<b>Opportunity/ Threat</b>	<b>Rank</b>
Smart metering	Opportunity	1

Advance analytics in demand and supply side management	Opportunity	1
IT enabled services in collection, monitoring and repairs	Opportunity	1
Improved technology in load distribution	Opportunity	1
Improved technology for reducing the transmission losses	Opportunity	1
Energy efficient devices	Opportunity	1
High cost of power generation per KWH from small hydro power projects and solar energy	Threat	2
High cost of energy efficient appliances	Threat	2
Technological improvement require high capital investment	Threat	2
Large Gap between International level requirement and existing infrastructure	Threat	2
<b>Modal Value of Rank</b>	Opportunity	1
<b>Scale</b>		
<b>Opportunity</b>		1
<b>Threat</b>		2

Table 6 Technological Environment of UPCL (Source: Author's Calculation)

### Summarized results of the PEST analysis of UPCL

Environment	Opportunity/Threat
Political Environment	Threat
Economic Environment	Opportunity
Social Environment	Threat
Technological Environment	Opportunity

Table 7 Summarized results of the PEST analysis of UPCL (Source: Author's Calculation)

### SWOT analysis of UPCL

SWOT Analysis is the most renowned method for auditing and assessing the firm's overall strategic role and climate. The main purpose is to define the approaches that will create a firm-specific business model that better aligns the resources and skills of an enterprise with the environmental conditions the company operates in.

In other words, it is the basis for evaluating the existing potential and limits, and the likely / probable opportunities and risks from the external environment. This considers all the positive and negative factors that affect the performance inside and outside the company. A consistent study of the environment in which the company operates helps to forecast / predict changing trends and also helps to incorporate them into the organization's decision-making process.

Strength (S)	Weakness (W)
<ul style="list-style-type: none"> <li>• Division of Work.</li> <li>• Unity of Command.</li> <li>• Unity of Direction</li> <li>• Scalar Chain</li> <li>• Order</li> <li>• Stability of Tenure of Personnel.</li> <li>• <b>Return on equity</b></li> <li>• Average Collection Period</li> <li>• Total Assets turnover Ratio</li> <li>• Fixed Assets turnover Ratio</li> <li>• Current Assets turnover Ratio</li> <li>• Capital Gearing Ratio</li> <li>• Total Assets to Debt ratio</li> <li>• Debt Equity Ratio</li> <li>• Liquid ratio</li> <li>• Absolute Liquid ratio</li> </ul>	<ul style="list-style-type: none"> <li>• Balancing Authority and Responsibility.</li> <li>• Discipline</li> <li>• Subordination of Individual Interests to the General Interest.</li> <li>• Remuneration</li> <li>• Centralization</li> <li>• Equity</li> <li>• Initiative</li> <li>• Esprit De Corps.</li> <li>• Gross profit</li> <li>• Net profit</li> <li>• Operating Profit</li> <li>• Earnings per share</li> <li>• Book value per share</li> <li>• Working capital Turnover Ratio</li> <li>• Average payables Period</li> <li>• Proprietary Ratio</li> <li>• Interest Coverage Ratio</li> <li>• Current Ratio</li> </ul>
Opportunities (O)	Threats (T)
<ul style="list-style-type: none"> <li>• Threats of new entrants</li> <li>• Threat of Substitute Products or services</li> <li>• Rivalry among existing firms</li> <li>• Bargaining Power of Buyers</li> <li>• Political stability, Coordination between center and state government</li> <li>• Heavy investment for rural and urban electrification schemes as UDAY, SAUBHAGHYA</li> <li>• Peaceful Law and order situation</li> <li>• Industrial policy packages for state industrial development</li> <li>• Increase in GSDP</li> <li>• Increase in per capita income</li> <li>• High growth rate of services sector especially Tourism</li> <li>• Increase in renewable energy development as hydro power, solar power etc</li> <li>• Increase in Industrial development</li> <li>• Anticipated high energy demand in future</li> <li>• The level of financial development indicated by The average population per bank branch in the State was favorable at 7,300 in March 2012 as compared to all-India average of 12,700.</li> <li>• Increase in demand for clean fuel and source of lighting such as LPG and Electricity.</li> <li>• High share of households having access to basic civic amenities such as safe drinking water and electricity, ownership of household assets such as television, telephone etc. compared to the national average</li> <li>• Increase in consumer awareness level</li> <li>• Smart metering</li> <li>• Advance analytics in demand and supply side management</li> <li>• IT enabled services in collection,</li> </ul>	<ul style="list-style-type: none"> <li>• Bargaining Power of Suppliers</li> <li>• Red Tapism, bureaucratic inefficiency and Corruption</li> <li>• Low political representation of Hills states evident in hill backwardness in comparison to high development in 4 non hill districts</li> <li>• Failure in e-governance initiatives</li> <li>• Political interference in tariff determination due to own electricity policy and pricing based on its own interest</li> <li>• Subsidies provided by the government in a large amount to employees of UPCL and other public offices</li> <li>• Lack of small hydro power project development as compared to mega hydro power projects</li> <li>• Infrastructure deficit</li> <li>• stagnation in agriculture development</li> <li>• Subsidies provided in agriculture, new industries, employees of UPCL, public offices,</li> <li>• High rate of unemployment</li> <li>• Inequality in rural vs. urban development</li> <li>• Displacing of people due to big hydro power projects</li> <li>• Migration leading to Ghost Villages in turn leading to decreasing number of consumers</li> <li>• Loss of socio and bio diversity due to displacement of people e.g. Tehri</li> <li>• Low Use of energy efficient devices due to high cost and quality product accessibility in hill areas.</li> <li>• Lack of high skilled manpower required for modern infrastructure services</li> <li>• High cost of power generation per KWH from small hydro power projects and solar energy</li> <li>• High cost of energy efficient appliances</li> <li>• Technological improvement require high</li> </ul>

monitoring and repairs <ul style="list-style-type: none"> <li>• Improved technology in load distribution</li> <li>• Improved technology for reducing the transmission losses</li> <li>• Energy efficient devices</li> </ul>	capital investment <ul style="list-style-type: none"> <li>• Large Gap between International level requirement and existing infrastructure</li> </ul>
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**Table 8 SWOT analysis of UPCL (Source: Author's Calculation)**

Although there are many opportunities for sustainable community economic development, there are also many threats and challenges that exist throughout the state of Uttarakhand that may limit or threaten sustainable development. One threat mentioned by nearly every village resident interviewed is the continuing population decline, and the concern that eventually there could be the complete abandonment, particularly in the northernmost villages. In the above sections we addressed UPCL's current status and its future needs in detail. We have also set several actionable goals that will help UPCL achieve the goal set. More analysis of related factors in Uttarakhand need to be evaluated before preparing for the above strengths, limitations, opportunities, and risks. The exercise was done to highlight some of the main risk indicators affecting Uttarakhand's overall market along with current advances.

### **Limitation of the study**

The present research study is having following limitations:-

1. In this study we will take small sample of population focused on specific area i.e. district Nainital because of time and cost limitation to finish the study.
2. The study is based on secondary data extracted from published annual reports of the UPCL Ltd., from its official website and also from other published sources. Therefore, the findings of the study are subject to the accuracy of data collected from these sources.

### **Suggestions**

The benefits of UPCL can be increased if UPCL is able to improve on its two key parameters. The first one being customer service & satisfaction and the second being Financial performance in terms of T&D/AT&C loss reduction and Collection efficiency however this is not enough. The UPCL needs improvements in several other parameters as well.

### **Reduction in transmission & distribution/ AT&C losses of UPCL**

- UPCL need to analyze the loss reduction initiatives adopted by various states. Strengthening of Energy accounting infrastructure by 100% consumer metering, DT metering and feeder metering, is recommended to reduce the AT&C losses of UPCL.
- Replacement of defective and electromechanical meters at the earliest by UPCL is some of the shortlisted initiatives which can help in accurate measurement and verification of losses.
- Smart-grid metering and control systems hold enormous promise for improving efficiency, convenience, and sustainability for UPCL.

- Smart metering can result in energy savings to the tune of 5 to 12%. Smart metering can result in T&D loss reduction, increased demand side efficiencies and optimal generation.
- AT&C losses of UPCL can be eliminated by the induction of Information Technology. Advance countries are using IT tools to gain in term of productivity, efficiency, reliability etc. It has been observed that UPCL is lagging behind due to not proper implementation of Information technology.

### **Improvement in internal management of UPCL**

It is of utmost importance to improve the internal management system of UPCL , to make it conducive to efficiency, productivity. There is need to redefine the role of UPCL and concentrate on technological upgradation, improved manufacturing methods and professionalisation of management.

- UPCL have to be given greater functional autonomy with accountability in decision making process
- Improper planning and delays in implementation of decisions lead to rise in their cost. So properly planning should be made by UPCL for strong and effective implementation.
- Management should take initiative steps for the proper utilization of the resources.
- Internal management has to realize the core values of UPCL which relies on integrity, honesty and reliability. The subsidized electricity to the employees of UPCL should be used as an incentive to improve the performance instead of things for granted.
- Management and boards will need a different approach, not only to mitigate risks but also to have the courage and consensus to view Leapfrog investments through a long-term lens.
- In regard to operational and administrative challenges in implementation, UPCL lacks skilled manpower and consumer awareness as the biggest challenges.

### **Coordination between different stakeholders of UPCL**

There is need for blending the socio-economic objectives with those of commercial objectives. Corporate Governance should bring about balance and equilibrium between various stakeholders like owners, promoters, employees, shareholders, customers, creditors, bankers, investors, government and society.

- The Corporate Governance framework of UPCL should recognize the legal, moral and equitable rights of all stakeholders and encourage active co-operation not only with them but also amongst themselves for the purpose of creation of wealth and its optimum distribution.
- Government as stakeholder will have many dimensions. Apart from the direct and indirect taxes which the UPCL will pay to the state and central Government, the impact of social and environmental issues are some of the most influential forces in the world today.
- The young and rising Himalayan ranges are highly susceptible to landslide/landslips and erosion. Hydro-electric projects are dependent on the regular flow of clean water for efficient operation. To sustain the flow of ecosystem services, a type of Payment for Ecosystem Services (PES) mechanism the Catchment Area

Treatment plan has been mandated by law.

## **Improvement in customer services & satisfaction level of customers of UPCL**

Instead of focusing on the UPCL and its financial health in terms of revenue and losses, the focus needs to be on the customer.

- Dynamic Pricing based on best available data and the rise in fuel costs should be passed on to consumers.
- Most customers are honest and want to pay honestly for their energy use. A shift in focus towards focusing on the customer, in our analysis, will achieve great results. This shift in focus should not be lip service alone.
- Every decision made by UPCL must first be assessed for whether it is good for and fair to the customer or not. Give Customer a smooth, consistent experience across all avenues of customer connect including voice, email, sms etc.
- Improve service order tracking and enhance ability to monitor, track and analyze trends based on the complaint/ request history UPCL needs to enhance customer self-service capabilities through the web.
- Reducing the total cost of ownership by carrying out all customer service activities on a single integrated platform will increase customer satisfaction and collection efficiency.
- Meter data and electricity charges can be made available to the customers online and thus some of the customer queries on billing get resolved without the need for them to reach out to contact center. Improved customer satisfaction and loyalty through quick, accurate responses to inquiries
- Smart metering offers a choice to the consumer to save on power bills by the virtue of the ability to modify their power consumption with respect to the time based tariff. E.g. in case the tariff is highest in morning, the consumer can modify his electricity consumption such as washing, vehicle charging etc. to afternoon, where say, the tariff is low.

## **Consideration of physical geography of Uttarakhand in electricity distribution system of UPCL**

A policy framework to generate inclusive growth for a state like Uttarakhand has to be consistent with the geography of the area. In other words, policies that might give successful results for any other state in India situated in the plains, may not prove to be fruitful in this hilly state. It is the geographical inequality between the hills and the plains of Uttarakhand that divides the state most critically disparity manifests itself in the form of inter-district inequality. Four of the thirteen districts, namely, Nainital, Haridwar, Dehradun and Udham Singh Nagar, are in the plains or have large parts in the plains. Compared to the other nine districts, these districts are way ahead in terms of various indicators of development. For instance, a recent study of

inter-district disparities in Uttarakhand undertaken by the Planning Department shows that three of these districts (Dehradun, Haridwar and Udham Singh Nagar) have a relatively high level of development, and three districts (TehriGarhwal, Champawat and Chamoli) figure low in the development scale as measured by 24 indicators using the ranking and index method.

- The inter-district inequality is most acute in terms of various forms of infrastructure. Of which the most critical infrastructure facilities is electricity. It is very clear that the districts in the plains have much better electricity infrastructure as compared to the districts in the hills.
- Electricity Infrastructure has to be given the highest priority in the development effort of Uttarakhand as the future growth rate in this state will depend critically on the rapid development of Electricity Infrastructure.
- Policies for inclusive growth have to correct the current imbalances in the distribution of electricity infrastructure in the Uttarakhand.
- Though there are problems related to the financial viability of such decentralized power generation by the public sector, non-government community efforts have proved to be a success.
- Hydro-electric power generation provides electricity at a cheaper price and in an environment-friendly manner. This crucial price advantage of hydropower electricity in Uttarakhand may act as a catalyst for the economic development of the Uttarakhand and its people by increasing their purchasing power.
- Availability of cheap power by way of inexpensive water lifting systems for irrigation will boost agriculture. It will also encourage establishing agro-processing units such as milling, drying, and threshing, and cultivators will be able to process the crops in the village.
- Availability of cheap power coupled with appropriate technology for processing fibers will enable people to add value at competitive rates.
- Availability of low-cost power, particularly in remote areas, can be instrumental in providing basic comforts and facilities sought by tourists, which will in turn will help attract more tourists to the region.
- If sufficient low-cost electricity is available, it will act as an incentive for people to use it for cooking and heating, rather than using wood this will help protect the forests and environment.
- Solar installations should be complemented with battery banks. Solar installations that are connected to the grid must be allowed to feed electricity into the grid and compensated at the same rates they pay for electricity consumption. It is important to decentralize energy generation to overcome transmission impasses.
- Since the climate of Uttarakhand is cold, it is important to propagate solar water heaters and reduce the reliance on electric water heaters, thereby helping electricity suppliers to overcome shortages. Due to the

mountain terrain, it is difficult to transport CNG and LPG cylinders for cooking; in these cases also electricity can be used.

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