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REVENUE MANAGEMENT: A CASE STUDY OF BHARAT SANCHAR NIGAM LIMITED

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ABSTRACT

Revenue management is the application of disciplined analytics that predict the consumer behavior at the micro level and optimize product availability and price to maximize revenue growth. The essence of this discipline is understood in this discipline is in understanding customers' perception of the product value and accurately aligning product prices, placement and availability with customers' segment. Businesses have taken important decisions such as what to sell, when to sell, whom to sell and how much to sell relating to the marketability of the product. Revenue Management uses a data driven tactics and strategy to increase the revenue. This article focuses on revenue management in general and BSNL in particular, which is a public sector company. This process includes data collection, segmentation, forecasting, optimization, dynamic revaluation and estimating the expected revenue. It includes revenue generated from services and other incomes, expenditure incurred and revenue leakage in BSNL during 2011-2015. Revenue income was gradually decreasing in spite of an increase in its expenditure was increased year by year. BSNL needs to improve its income in future, by utilizing its efficiently and effectively so as to improve its operational efficiency of the organization and in addition by launching better plans which suits customers of all categories.

KEYWORDS

revenue management, BSNL, revenue income & expenditure and leakage.

INTRODUCTION

Revue Management is an application of disciplined analytics that predict customer behavior at the micro market level and optimize product availability and price to maximize revenue growth. The essence of Revenue Management is understanding customer's perception of product value and accurately aligning product prices, placement and availability with each customers' segment.

OBJECTIVES

The article focuses on the following objectives:

- Revenue Management in general.
- Revenue Management in BSNL.

LITERATURE REVIEW

Before the emergence of revenue management, British Air ways experimented with differential fare products by offering capacity controlled 'Early bird' discounts to stimulate demand for the seats, that would otherwise fly empty. Taking a further step, American Airlines. pioneered a practice, 'Yield Management', which focused primarily maximizing revenue through analytics based inventory control. By early 1980s, they combination of a mild recession and new competition spawned by Air Lines deregulation Act, 1978, posed the additional threat. American airlines announced ultimate super saver fares in 1985 that were prices lower than the people Express. This yield management system increased American airlines revenue from 14.5% to 47.5%. Hotel industry also this system, to rental firms' cars. Revenue management saved National car rental from bankruptcy.

Revenue Management had focused on driving revenue from Business to Customer (B2C). In early, 1990, Revenue management has developed further through Business to Business (B2B) pricing strategy. It also began to influence Television and Advertisement promotion sales.

REVENUE MANAGEMENT SOCIETY (RMS)

It is the industry body representing companies and practitioners in 'Travel, Transportation and Leisure industries. The main aim of the society is to define and promote best practices in the use of revenue and yield management techniques, through discussion and communication between the key users of these techniques.

REVENUE MANAGEMENT LEVERS

Revenue Management encompasses a wide range of opportunities to increase revenue. A company can utilize these as levers. In spite all the levers are available, only one or two may drive revenue in given situations. The primary levers are:

- **Pricing:** This lever of revenue management involves defining, redefining pricing strategy and developing disciplined pricing tactics. Tactics involve creating pricing tools that change dynamically, in order to react changes and continually capture value and gain rain. Price optimization involves constantly optimizing multiple variables such as price sensitivity, price ratios and inventory to maximize revenues. A successful pricing strategy supported by analytically based pricing tactics, can drastically improve a firm's profitability.
- **Inventory:** Revenue management is mainly concerned with how best to price or allocate capacity. In situations where demand is strong for a product but cancellations are more, firms often overbook in order to maximize revenue from full capacity.
- **Marketing:** Price promotion allows companies to sell higher volumes by giving temporary discounts on their products. Revenue management techniques measure customer responsiveness to promotions in order to strike a balance between volume, growth and profitability. An effective promotion helps to maximize revenue when there is uncertainty about the distribution of customer willingness to pay. When company's products are sold in the form of long term commitments such as internet, telephone services, promotion helps to attract customers who will then commit to contract and produce revenue over a long period. When this occurs, companies must also strategize their promotion roll-off policies. Revenue Management optimization proves useful in balancing promotion roll-off variables in order to maximize revenue while minimizing churn.
- **Channels:** Revenue Management through channels involves strategically driving revenue through different distribution channels. These channels may represent customers with different price sensitivities. Different costs and margins are associated with these channels. Revenue management techniques can calculate appropriate level of discounts for companies to offer distributors through opaque channels to push more products without losing integrity with respect to public perception of quality.
- **Overbooking:** It is another driver for revenue management when there is a chance that the customer may not appear. Capacity constrained industries over book to redeem for customer cancellations. Insufficient overbooking results in untold inventory where as excessive booking results in penalty cost which includes both financial remuneration given to bumped customers and prospective loss of future revenue due to customer dissatisfaction. The optimum level of overbooking is where the anticipated cost of over booking for the next unit to be sold is equal to the expected marginal revenue from the unit.

REVENUE MANAGEMENT PROCESS

This process includes data collection, segmentation, forecasting, optimization, dynamic revaluation and estimating the expected revenue.

- **Data collection:** The process begins with data collection. Relevant data is paramount to a Revenue Management system's capability to provide accurate and actionable information. The system must collect and store historical data for inventory, prices, demand and other casual factors. This data is utilized for financial reporting, forecasting trends and development purposes. Information about customer behavior is valuable asset that can reveal customer behavioural patterns, the impact of competitors' actions and other important market information. This information is crucial revenue management in the organization.
- **Segmentation:** Market segmentation is the key to market-based pricing and revenue maximization. Success hinges on the ability to segment customers into similar groups based on the calculation of price responsiveness of customers to certain products based upon the circumstances of time and place. Revenue management strives to determine the value of the product to a very narrow micro-market at a specific movement in time and then chart customer behavior at the margin to determine the maximum obtainable revenue from those micro markets. Cluster analysis allow revenue managers to a set of data driven partitioning techniques that gather interpretable groups of objects together for consideration. Market segmentation based upon customer behavior is essential for forecasting demand associated with the clustered segments.
- **Forecasting:** Revenue Management requires forecasting various elements such as demand, inventory availability, market share and total market. Its performance depends critically on the quality of these forecasts. Forecasting is a critical task of Revenue Management and takes much time to develop, maintain and implement. Quantity based forecasts, which use time series models booking curves, cancellation curves etc. project future quantities of demand such as reservations, product bought. Price-based forecasts seek to forecast demand as a function of marketing variables such as price or promotion. These involve building specialized forecasts like market response models or cross-price elasticity estimates to predict consumer behavior at certain price points. By combining these forecasts with calculated price sensitivities and price ratios, a Revenue Management system can quantify these benefits and develop price optimization strategies to maximize revenue.
- **Optimization:** While Forecasting suggests what customers are likely to do, optimization suggests how a firm should respond. Often considered the pinnacle of Revenue Management process, optimization is about evaluating multiple options on how to sell your product and to whom the product is to be sold. Optimization involves two important problems in order to achieve the highest possible revenue. First the business must decide between optimizing prices, total sales, contribution margins and even customer life time values and then optimization tools / techniques are to be decided. Normally linear programming, regression analysis, discrete choice models etc. can serve to predict customer behavior in order to target them with right products for the right price. These tools also allow a firm to optimize its product offerings, inventory levels and pricing points in order to achieve the highest revenue possible.
- **Dynamic Re-evaluation:** Revenue Management requires a firm must continually re- evaluate their prices. In a dynamic and competitive market, it is required to constantly re-evaluate all the variables in micro market level and also to adjust strategies and tactics involved in Revenue Management.
- **Estimation of expected Revenue:** The key to effective Revenue Management is the accurate estimation of the expected revenue of each unit of capacity for each available sale date. The Marginal revenue principle is applicable here, i.e. as the level of available capacity increases, the marginal expected revenue from each additional unit of capacity decreases. Therefore, if only one unit of capacity is offered for sale, the probability of selling it is very high. However, with each unit of additional capacity, the probability that it will be sold to a customer goes down till the probability of selling the last additional unit is close to zero. Note that expected marginal revenues can also be interpreted as the "Opportunity costs." Of the marginal units of inventory.

REVENUE MANAGEMENT IN THE ORGANISATION

Revenue Management's fit in within the organizational structure depends on the type of industry and the company itself. Some companies place Revenue Management teams within marketing teams as they focus on attracting and selling to customers. A customer relations officer in this sense would be responsible for all activities that generate revenue and directing the company to become more "revenue-focused". Supply chain management (SCM) and Revenue Management (RM) have natural synergies. SCM is a vital process in many companies today and several are integrating this process with Revenue Management system, a company that have achieved excellence in supply chain management and Revenue Management individually may have opportunities to increase profitability by linking their respective operational focus and customer-facing focus together.

Business intelligence platforms have also become increasingly integrated with the Revenue Management process. These platforms are driven by data mining processes, offer a centralized data and technological environment that delivers business intelligence by combining historical reporting and advanced analytics to explain and evaluate past events, deliver recommended actions and eventually optimize decision making.

TELECOMMUNICATION INDUSTRY (TELECOM)

Telecom is one of the Fast growing sectors in India. With the increase in competition with the major players like BANL, MTNL, Hutchison, Essar, Idea, Bharati tele services etc. the Revenue Management of BSNL is focused, being a public sector company.

BHARAT SANCHAR NIGAM LIMITED (BSNL) – REVENUE MANAGEMENT

BSNL provides voice calls, Fax services, SMA & MMS, Internet services, Broad band services and data services, video conferencing and IP bases services to its customers.

Period charges/ Fixed charges: BS.NL levies charges on periodical basis depending upon the type of services subscribed, tariff plans applicable and the billing periodicity. Period charges will be billed regardless of the extent of actual utilization of service.

Usage Charges: These are the charges levied on customers based on actual utilization of the service. Depending upon the tariff plan chosen by the customer, either the whole usage or usage to a prescribed limit may be free of charge. There are differential/ slab rates on the volume of usage. The usage denotes minutes of usage or the volume of data involved.

One time charges: These are the charges levied only once in the customer life cycle. One time charges may be in the nature of revenue for the service provider like installation/ shifting charges/ security deposits to prevent losses arising out defaults in the settlement of dues.

Billing systems: These systems are viewed as systems for management of accounts receivables, as the billing systems assists in the collection of revenue from customers. Billing systems are also a part of accounts payable (for inter carrier settlements) as customer often uses services from other operators such as call completion through other net works.

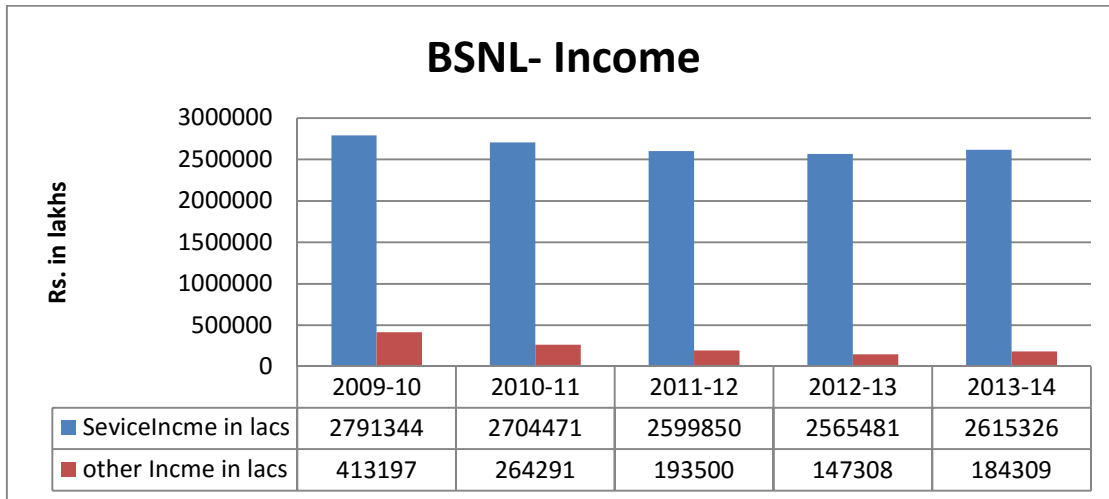
Billing Types: Prominent billing types are as follows:

- **Pre-paid Billing:** The customer starts using the service only after the value for the usage is already paid. The customers can pay additional sums periodically based on their communication needs.
- **Postpaid Billing:** Under this system, customers are using the service on the basis of credit provided by BSNL. The customers buy products and services and use them throughout the billing cycle, invoices are generated by service provider. These invoices are sent to customers for settlement. In order to safeguard their interest, the service providers often seek a security deposit to cover the likely usage during a billing cycle.
- **Internet Billing:** When there are multiple players in the field, inter net communication happens in the form of calls originating in one net work and carried by or terminated in another network. Billing for such calls too is done by originating network to which the customer belongs.
- **Roaming Charges:** This settlement is done as per special kind of protocol like TAP3 protocol. As it is roaming charges apply even in case of net work usage out side the defined boundaries of the home net work even when the operator owing the net work remains the same. Of a customer.
- **Convergent Billing:** It is the integration of all service charges into a single customer invoice. It is a unified view of all services such as mobile, fixed, IP etc,

BSNL – REVENUE INCOME

Income from services is the major source of income to BSNL. Table-1 shows its services income and miscellaneous income for a period of five years, i.e. 2009-2013-14.

TABLE 1



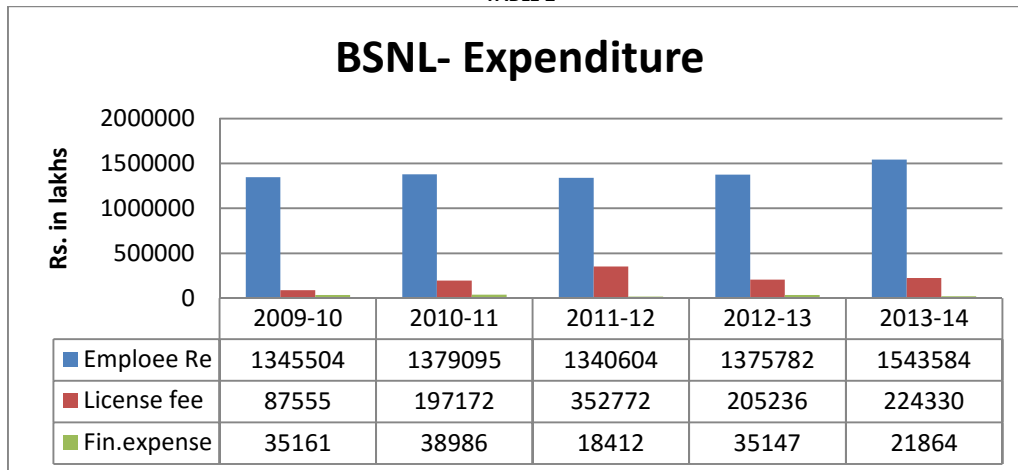
Source: Annual Reports of BSNL

Table one indicates that income of BSNL is in gradually decreasing in the last five years.

BSNL- EXPENDITURE

It comprises significantly employee remuneration, License fee and financial expenses. The expenditure is given in table-2.

TABLE 2



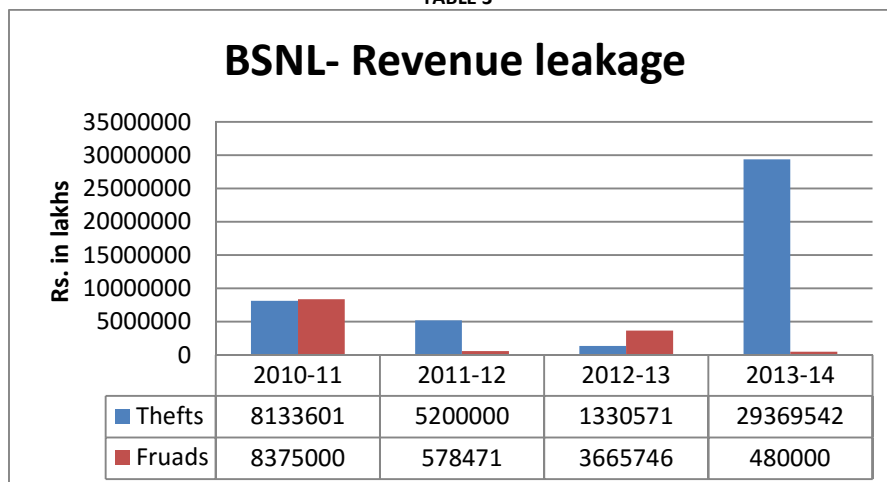
Source: Annual Reports of BSNL

Table -2 indicates that revenue expenditure of BSNL is gradually increasing in last five years, i.e. 2009-2014. It has an adverse impact on the profitability of the company.

REVENUE LEAKAGES

It comprises leakage through thefts and frauds in inventory of BSNL It is given in Table-3.

TABLE 3



Source: Annual Reports of BSNL

Table -3 indicates total leakage increasing, in spite of a decrease in frauds in 2013-14, when compared to the previous years.

FINDINGS

- Revenue income was totally decreasing in BSNL.
- Expenditure was increased year by year in BSNL.
- License fee is changed year by year.
- High thefts are not a good science for the company.

LIMITATIONS

- Management of revenue income of BSNL for a period of five years i.e.2009-14 is considered.
- The information is based on Annual Reports.

CONCLUSION

Revenue Management's fit in within the organizational structure depends on the type of industry and the company itself. Some companies place Revenue Management teams within marketing teams as they focus on attracting and selling to customers. BSNL needs to improve its income in future, by utilizing its efficiently and effectively so to improve its operational efficiency of the organization and in addition by launching better plans which suits to customers of all categories.

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