BACEMTO FRAMEWORK: MEASURING CUSTOMER EXPERIENCE MANAGEMENT ACTIVITIES OF TELECOM OPERATORS

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Abstract: *The objective of this paper is to develop a conceptual framework named as "BACEMTO Framework", (Balanced-scorecard Approach for measuring Customer Experience Management activities of Telecom Operators) for measuring performance of Customer experience management activities of a telecom operator. The paper makes an attempt to understand the Balanced Scorecard parameters for measuring Customer Experience management activities for cellular operators.*

Primary data was collected with the help of structured questionnaire (online and telephonically) from 150 experts from the Telecom industry. Data was analyzed using factor and regression analysis.

The Telecom Industry is growing at a fast rate but the annual churn rate for operators is increasing substantially. Cellular service providers agree that delivering an optimal customer experience will lead to reduced churn rate, increase ARPU and minimize operational costs. Researchers have conducted studies on customer experience as a separate construct, but none of them concentrates on how to measure Customer Experience Management (CEM) with the help of a well-defined, balanced scorecard metrics framework for Cellular operators.

This study will help cellular operators by providing them a framework for measuring the customer experience management activities which in turn help them decide the CEM activities which are most effective and the ones which need to be improved thereby enhancing customer experience.

Keywords: *BSC (Balanced Score Card), CEM (Customer Experience Management), Telecom Operator, Touch points, Efficiency, Effectiveness, Impact, Churn, Network Efficiency, Brand experience, Service experience, BACEMTO framework.*

INTRODUCTION

1.1. About Telecom Industry:

The Telecom industry is growing rapidly in the current years. In India, the Telecom industry has seen an exponential growth over the past few decades and has been

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contributing majorly to the country's economic growth (BSNL India, n.d.) Liberalized policies from the Government providing easier access to the market for equipment related to the world and a regulatory framework which is fair and which offers telecom services to consumers in the Indian market at reasonable prices has enabled rapid growth to Indian Telecom industry. This simultaneously has made Telecom Sector more competitive (Corporate Catalyst India, 2015). Annual churn rates for telecommunication companies lie within 10% to 67% (Hughes, 2015). Industry retention surveys displayed that even though price along with product are important, the basic reason for most of the consumers leaving any service is because of dissatisfaction with the way they are treated. So, presumably all Telecom operators agree that in a very competitive demography, the only way to differentiate them is customer experience. By delivering an optimal customer experience, we can reduce the churn rate and simultaneously increase Average Revenue per user (ARPU) and drive down operational costs. Hence there is a rising need of a framework that has to be designed in order to do the customer experience management activities in Telecom operators (Joshi et al, 2014).

1.2. Gap Analysis

Though the importance of customer experience concept as a source of competitive advantage for service industry has been realized, there are not many studies that have been conducted on the same in the telecommunication. Very few researchers have studied the customer experience as a separate construct, but none has actually shown a clear picture how to perform Customer Experience Management (CEM) with the help of a well-defined and specially designed Frame work for Telecom operators. For example- Kaplan and D.P. Norton has given the particulars of Balanced Scorecard in their article in 1992 (Kaplan & D.P, 1992). (Shulver & Antarkar, 2001), have considered the Balanced Scorecard as a communication protocol for management of resources across Intra-Organizational Borders. Subsequently, (Kaplan & Norton, 2008) have written about the uses of Balanced Scorecard design in their book "The Execution Premium". Stephen N.M Nzuve and Gabriel Nyaega [2013] have stressed on the application of Balance Scorecard in performance management at Essar Telecom, Kenya. Danaei, A & Hosseini, A. (2013) studied usage of Balance scorecard for performance measurement in pipeline industry. Danaei, A., Hemmati, M & Mardani, M. (2014). have analyzed Performance measurement of administration services using balance scorecard. Benedetta Gesuele, Mauro Romanelli, (2015) have studied on the effective way of human resource management that can be done in public sector organizations by using balance scorecard approach. Jarkko U. Vesa *et al.* (2015) have applied the balanced scorecard approach to measure the success of telecom regulations.

Although it is clear that there is a necessity of a framework to measure CEM in an organization, there is a lack of literature in the telecommunications domain.

1.3. Why Balanced Scorecard

The main aim of developing balanced scorecard was a framework for performance management and which added decisive non-financial attributes of performance extent to already existing customary financial metrics to provide executives managers and a better 'balanced' approach of performance in the organization. It has evolved from its early use as a simple framework for performance management into a fully formed management system used for strategic planning. It renders a basis which not only provides performance measurements but also extends designers on identifying what and how it should be done, measured and executed. Kaplan and Norton had advocated four metrics for Balanced scorecard framework namely Financial perspective, Customer perspective, Internal perspective and Learning and Growth perspective. Kaplan (2001) suggested in his article "strategy and performance measurement should focus on what output and outcomes the organization intends to achieve, not what programs and initiatives are being implemented"

However, Arvenson (1998) suggested a change in the above mentioned four perspectives as proposed by Kaplan and Norton. He suggested Efficiency, Effectiveness should replace the above mentioned four parameters. Based on the work of Dajani and Gilbert (1979), Philips J.K (2004) suggested a 3rd metric, "impact" be added to Arvensons two additional metrics of Efficiency and Effectiveness.

There appears to be a decent map amid the Balanced Scorecard framework's characteristics (as proposed by Philips and Arvenson) and the requirements of a measurement tool for cellular service providers namely:

- Managers doing CEM need *perfect performance goals* in order to manage CE activities in the finest possible way.
- If the results of CEM activities do not display in the "bottom line", the *elementary conventions* need to be challenged.
- Various stakeholders of the CEM procedure need a *shared language* to decrease and remove uncertainty and confusion.
- CEM activities should focus on *yield and results*, not on packages and initiatives.

Therefore, in this study, we have considered these three perspectives of Balanced Score card suggested by Phillips and Averson, namely Efficiency, Effectiveness and Impact. These three fit well for Cellular service providers because, they form perfect categories of performance management that have been advocated by those industries since it is a service industry and competition is very high.

The purpose of this study is to develop a framework for measuring the performance of the Customer experience management activities of cellular service providers.

2. LITERATURE REVIEW

2.1. Customer Experience: Importance and Definition

The importance of Customer experience has been very well discussed in marketing literature. Thompson et al. (1989) opined the fact that researchers are supposed to go forward in studying about customer experience. Van Der Wagen (1994) and Katz (1968) said that different customers might be carrying different outlooks or perception about the experience for a particular service or product because every customer is distinct and special in his or her own accepting of the fact that every customer hails from a social, cultural and educational background. Evangelia Krassadaki and Nikolaos F have also designed a statistical framework for measuring and analyzing customer's experience in their paper (Krassadaki & Matsatsinis, 2015). The research provided by Belk *et al.'s* (1989) restates that the prominence of comprehending the impact of the causes moving the contemporary customer's experience. According to Davidson (1992), customer experience is defined as a process which creates a differential advantage to establish the loyalty of the customer Blythe (1997) also reemphasizes on a similar idea and says that consumers scrutinize buying choices as a result from the positive former involvements that they carry. Barlow and Maul (2000) have proposed that in relation to the familiarity economy philosophy, consumers presume a memorable, emotional and positive experience at each and every single transaction or to every touch point with the organization. Michela Addis (2005) has described consumption as the consequence of practice which the customer develops after having a nonstop sequence of exchanges of the service or the product offered by the organization. Kamaladevi Baskaran has mentioned the importance of customer experience management in the success of Retail industry in India in her research paper (Baskaran, 2011) [36]. Pedro Cruz, Jari Salo, Pablo Munoz-Gallego, Tommi Laukkanen have also proposed a model to analyse the customer's experience in e-banking industry (Pedro Cruz, 2010). The importance of Customer Experience Management is also analyzed by tying it with that of emotional connection by Sabita and Mahapatra in their paper (Mahapatra & Mahapatra, 2010).

In marketing literature, the term customer experience has been heavily discussed (Caru and Cova 2007. Sundbo and Hagedorn- Rasmussens (2008) has given the definition of Customer Experience as the customer's straight and unforeseen involvements with the organization, the service processes and the facilities and the way the interaction happens in between the representatives of the service firms and other customers. As per them, Customer Experience is perhaps one of the significant aspects which influence the customer's purchasing decision. Hongxiang (2011) mentioned that excellence of involvement as one of the biggest aspects leading to satisfaction in customers. Customer experience can be narrated to be the totality of all involvements which a customer has at each customer-

company relationship's touch-point. The company or organization intentionally puts in an effort in developing and maintaining good involvement which is different from the opposition and is constant at each touch point and adds as the maximum important value to the consumer (Joshi *et al.*, 2013).

2.2. Customer Experience Management (CEM)

According to (Joshi, 2013), Customer Experience Management (CEM) is all about creating the best customer experience in all perspectives and their study focuses upon addressing Customer Experience Management in a unique context and on parameters which affect customer experience especially for cellular mobile services of a telecom service provider. From the literature review mentioned above, Customer Experience Management can be stated as the focused efforts the organization's end to improve the quality of the interactions between customer and the organization at different touch points in a way which is consistent and effective.

Considering the statistics in telecom industry, almost 82% of the total number of users churns to other networks because of their dissatisfaction with the quality of service rendered by the service. But 90% of these users usually leave without lodging a complaint to the concerned department of customer care. One customer can transfer the dissatisfaction to many customers, which might lead to a defaming of the brand of the service provider. By practicing Customer Experience Management, a service organization can tend to achieve a differential advantage, create positive moments of truth for customer resulting in the increase of revenues, better customer experience thereby gaining customer retention and positive referrals from customers. Customer Experience Management aims to delight customers on the value propositions and includes all interactions at every available touch point.

2.3. Why Measure CEM

Measurement is the first step that leads to proper management and improvement. To improve the customer experience management activities, it is important to measure them. Once measured, metrics can be used to benchmark and improve the experience for the customers. According to Ericcson, Customer Experience Management is itself deûned as a holistic approach to monitor measure and improve all the touch points of customer interactions between the Telecom Operator and the customer (Sebastian Barros, Jon Beguiristain (2012). The importance of Measurement in managing the Customer experience is clearly high enough. Even some measures are proposed to be developed in Information technology industry (Shukla, 2014). With all operators coming up with equivalent plans in the same time, the number of choices has increased to a customer and hence the churn rates have increased drastically (Hughes, 2007). With more options to the customer now,

it is easier for a customer to switch brands at a go. Hence to retain a customer, brands need to focus on customer experience heavily. Better the customer experience management, more and more customers stick to the brand generating more revenue which helps in business expansion.

The entire concept of customer experience might sound a bit idealistic or hyped of, but anyone who dismisses it usually is out of touch and is missing out on the base. In fact, customer experience is a very important differentiator in this extremely competitive highly connected global scenario. There is tangible business value in managing the customer experience efficiently. The benefits of positive customer experience management are (Customer Experience Management- What it is and why it matters, n.d.):

1. Strengthen preference of the brand with the help of various differentiated experiences.
2. Mark up revenue with gradually increasing sales from customers who are already existing and new sales by spreading the word of mouth.
3. Helps in improving customer loyalty and advocacy with memorable and valued customer interactions.
4. Reduction of customer churn by decreasing cost.

3. BALANCED SCORECARD

The word "balanced" refers to the scorecard's ability in integrating the four major viewpoints of any business into a distinct, consolidated managerial report. The said attributes included **Financial, Internal Business, Customer and lastly Innovation and Learning**. The conception of "balance" also denotes the capability of businesses "to keep a track on financial results along with the monitoring the advancement required in capability structure and acquisition of intangible resources which they will be essential for growth in the future and expansion

The balanced scorecard is a strategic management system which is used exhaustively in the planning of government, industry, business, and nonprofit organizations all over the world to line up business activities with the objectives, plan and policy of the organization, advance communications —both internally and in the exterior front, and control the performance of the organization against calculated objectives.

The balanced scorecard reformed predictable philosophy around performance metrics. When Kaplan and Norton initially conveyed the notion, in 1992, businesses were full converting themselves to contest in the domain of info; their capability to utilize intangible assets had been becoming more decisive compared to their ability to accomplish corporal assets. The scorecard permitted businesses to track monetary results while watching growth in building the competences needed for

development. The tool of Balanced Scorecard was not proposed to replace financial attributes but to project it as a complement—and that is how most businesses treated it.

Kaplan and David P. Norton counted in anonymous specifications of this balanced scorecard policy in an article in the year 1992. There were many other papers also written on the same topic but the most successful one was that done by Kaplan and published in early 1992, and was followed quickly by a second in the year 1993. Finally, in 1996, the publication of these two renowned authors was made available as a book "The Balanced Scorecard" (Kaplan, 2008).

Figure 1: The Balanced Scorecard Adapted from Robert S. Kaplan and David P. Norton, "Using the Balanced Scorecard as a Strategic Management System," Harvard Business Review (January-February 1996): 76

Some of the benefits of the Balanced Scorecard approach are Lawrie and Cobbold (2001):

- It offers an all-inclusive interpretation of the organisation in a comprehensive manner
- It drives changes in the behaviour/performance of the organization
- It encourages stakeholders and other employees to be more focused and maintain in complete alignment to the organization's strategy

- Since people will acknowledge their contribution so people will see it and support it
- It ensures strategically effective communication throughout the organization
- It captures both tangible & intangible aspects of business
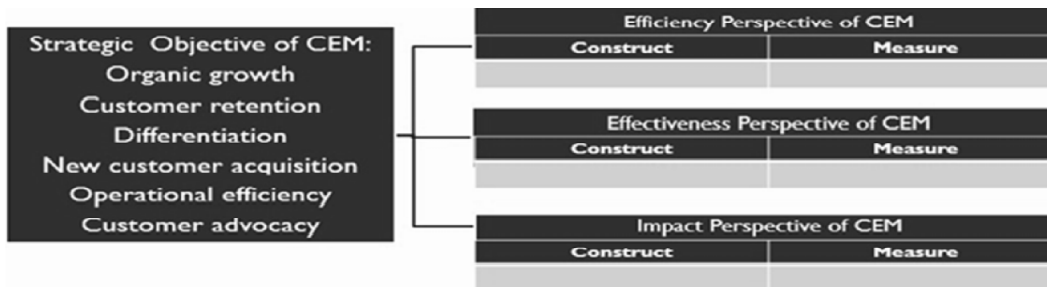- It helps in adding discipline and structuring the working capital operations and decisions

Figure 2: The Balanced Scorecard for Public Sector Entities (J.K Phillips, 2004)

Phillips builds on Arveson, who has earlier opined for 'efficiency' and 'effectiveness' giving way to the original four metrics promoted by Kaplan and Norton, as businesses usually want to accomplish the mission of the company as efficiently as possible. According to Phillips (Phillips, 2004), a third measurement parameter is needed for the implementation of Balance Scorecard as it is important to measure the impact of being effective and efficient. A good tie appears between the features of the Balanced Scorecard framework (as proposed by Philips and Arvenson) and the Telecom Cellular Service Providers Measurement tool's requirements (Balaji, 2015) (Smith, 2009).

4. RESEARCH QUESTIONS

The purpose of the study was to develop a conceptual model for measuring the performance of the Customer experience management activities used by an organization. For this purpose the BSC parameters of effectiveness, efficiency and impact as proposed by Philips and Arvenson has been considered. So it was important to answer the following research questions:

1. What sub-parameters can be used to measure the efficiency parameter of CEM activities of Cellular service providers?
2. What sub-parameters can be used to measure the effectiveness parameter of CEM activities of Cellular service providers?
3. What sub-parameters can be used to measure the impact parameter of CEM activities of Cellular service providers?

The following are the CE Touch points that are considered for this study under the three buckets like**- Efficiency** (Are we doing the right things?), **Effectivenes**s (Are we doing the things right?) and **Impact** (are we getting the desired results?).

Efficiency	Effectiveness	Impact
• Network Experience • Customer Care Experience • Billing Errors • Service Delivery Complaint Handling • Brand Equity	• Billing • Service Delivery Experience • Store and Gallery Experience	• Brand Equity • Service Delivery Experience • Store and Gallery Experience

Figure 3: The Balanced Scorecard parameters Cellular service providers

5. PROPOSED CONCEPTUAL FRAMEWORK: BACEMTO FRAMEWORK FOR MEASURING CUSTOMER EXPERIENCE MANAGEMENT ACTIVITIES

The below mentioned framework is proposed in this paper which has been named as "BACEMTO framework"(Balanced -Scorecard Approach for Customer Experience Management for Telecom Operators) for measuring the performance of customer experience management activities for the telecom companies.The parameters have been clubbed under 3 heads of Efficiency, Effectiveness and Impact. The figure illustrates the sub parameters under each head which would help in improving the Efficiency, Effectiveness and Impact of the network.

Efficiency is more of a Time oriented approach and focuses more on whether the right things are done. Factors like clarity of speech, no. of call drops, call connectivity issues and others are the sub parameters of efficiency.

The Impact is used to determine if we are deriving the results as expected. The Impact is usually contributed Price Sensitivity, Profitability, ARPU etc. The impact also determines the various market investments to be made for further growth of the Telco.

Effectiveness is more of a process oriented approach which keeps a track of whether the things are done right. Factors like if the customer has options for online bill payment, if the bill has been sent to the customer timely attributes to the effectiveness.

6. RESEARCH METHODOLOGY

Both primary and secondary data were taken into consideration in order to address the research questions. Primary data was collected with the help of a structured

Table 1
BACEMTO Framework (Proposed Conceptual Framework)

PERSPECTIVE	MEASURES
Efficiency (Are we doing right things/Time oriented)	Signal Strength
	Call Connectivity
	No. of call drops
	Data speed
	Clarity of speech
	No. of calls attended
	No. of queries resolved
	Time taken for a request to be closed
	Feedback scale of call recordings
	No. of times
	No. of errors in the billing
	No. of frauds recorded in billing
	Does the customer get notifications before the last date of bill payment?
	No. of customers opting for a new service plan launched
	Time taken to address a service complaint
	Market Share
Impact (are we getting the results)	No. of complaints
	How many App downloads?
	How many positive or negative feedbacks?
	ARPU
	Churn rate due to band
	Price Sensitivity
	Profitability
	Marketing Investments
	Growth Rate
	Cost to retain customers
	Cost to acquire new customers
	Revenue share
Effectiveness (Are we doing things right/ Process oriented)	Is the bill sent to the customer timely?
	Churn rate
	No. of new subscribers recorded in every month to an existing service
	Does the customer have option for online payment of bills?
	No. of cross connections
	No. of visitors to the store everyday
	How many stores in a particular locality?
	How many visitors to the app page?

questionnaire by using both online and telephonic methods for data collection. From 150 experts from the telecom domain. The sample consisted of consultants, middle level managers and upper level managers working with the ICT industry. The experts were asked their opinion as to what parameters did they consider as important in order to measure the performance of Customer experience management activities of cellular companies for the following:

1. Measuring the efficiency (*are we doing the right things?*)
2. Measuring the Effectiveness (*are we doing the things right?*)

3. Measuring the Impact (*are we getting the desired results?*)

Based on secondary data derived from literature review, a list of 36 sub-parameters were chosen which will help telecom service providers in measuring efficiency, effectiveness and impact of Customer Experience management activities. The experts were asked to rate the level of Importance of these 36 sub-parameters (on a 7 point Likert scale) for all of the BSC (Balanced Score Card) measures (efficiency, effectiveness and impact) indicated for measuring the performance of Customer Experience Management activities.

7. HYPOTHESES FORMULATION

Review of literature and secondary data gave better insights on parameters which will help telecom service providers in measuring efficiency, effectiveness and impact of Customer Experience management activities. Based on that, the following hypotheses were considered by the researchers for this study:

H1: Efficiency parameters have a significant effect on overall Customer Experience of a Cellular service provider.

H2: Impact parameters have a significant effect on overall Customer Experience of a Cellular service provider.

H3: Effectiveness parameters have a significant effect on overall Customer Experience of a Cellular service provider.

8. SCALE RELIABILITY TEST

Cronbach Alpha coefficient was used to test The reliability of the 7 point scale used to obtain the results. The Cronbach Alpha test validates the reliability and consistency of the questions to measure the results. A Cronbach Alpha score of .07 or more is considered as good reliability of the scale. We achieved the Cronbach Alpha for the importance scale as 0.981 which indicates a very good reliability of the scale.

Table 2
Scale Reliability Test

Reliability Statistics		
Cronbach's Alpha	*Cronbach's Alpha Based on Standardized Items*	*N of Items*
.981	.982	36

9. DATA ANALYSIS AND FINDINGS:

9.1. Outcome of Factor analysis

The eigenvalues that are obtained in the above table for a given factor give the measure of variance of a factor in all the variables. The importance of the factors is

Table 3
Total Variance Explained

Total Variance Explained									
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	22.474	62.428	62.428	22.474	62.428	62.428	11.503	31.954	31.954
2	2.868	7.967	70.396	2.868	7.967	70.396	9.074	25.205	57.159
3	2.139	5.942	76.338	2.139	5.942	76.338	6.904	19.179	76.338
Extraction Method: Principal Component Analysis.									

given by the ratio of the Eigen values. If there is a very low Eigen value recorded then it means that the factor contributes very less and can be ignored. Loading Values (% of Variances) shows if the assessed parameter measures the Customer Experience significantly.

Factor analysis was performed on the 36 attributes using SPSS. The importance of the 3 measures of BSC (Efficiency, Effectiveness and Impact) and the 36 attributes can be visualized with help of the rotated component matrix and the factor loadings generated therein by performing principal component factor analysis.

Rotated Component Matrix gives the correlation coefficients between the measures and the factors for which they are mapped to. That is, based on this we associated these 36 measures to three factors- efficiency, effectiveness and impact as shown in the below table.

Table 4
Factor Table: Factoring 36 measures under three factors

Factor 1 (Efficiency) 31.95% Variance	Factor 2 (Impact) 25.20 Variance	Factor 3 (Effectiveness) 19.17 Variance
Signal Strength	Number of complaints	Number of Cross connections
Call Connectivity	App Download	Timely billing sent
Number of Call Drops	Feedback Stores	Online payment
Data Speed	ARPU	Churn rate
Clarity of speech	Churn rate of brand	New customers
Number of Calls Attended	Price sensitivity	Visitor store
Queries Resolved	Profitability	Stores locality
Time to close a request	Market investments	Visitors App page
Feedback and call record	Growth rate	
Number of times	Cost to retain customers	
Errors in Billing	Cost to acquire customers	
Fraud in Billing	Revenue Share	
Notification informing due date		
New Service plan notification		
Service Complaint		
Market Share		

9.2. Rotated Component Matrix

Table 5
Rotated Component Matrix Output:

Rotated Component Matrix	Component		
	1	2	3
Signal Strength	.790	.369	.222
call connectivity	.775	.476	.164
No_calldrops	.613	.250	.605
Data_Speed	.623	.305	.112
no_Crossconnections	.226	.285	.554
Clarity_speech	.785	.130	.211
No_CallsAttended	.706	.372	.347
Queries_Resolved	.858	.298	.155
Time_requeatclose	.651	.332	.464
Feedback_callrecord	.704	.377	.211
No_times	.676	.473	.201
Errors_Billing	.751	.342	.317
Fraud_Billing	.701	.511	.111
Timely_billingsent	.611	.140	.622
Onlie_payment	.572	.087	.743
Notification_duedate	.715	.538	.136
No_complaints	.200	.649	.419
Churn_rate	.005	.463	.709
new_customers	-.020	.327	.818
New_Serviceplan	.718	.340	.162
Service_complaint	.555	.335	.543
Visitore_store	.577	.187	.688
Stores_locality	.296	.136	.835
Visitors_Apppage	.103	.268	.852
App_Download	.471	.542	.256
Feedback_stores	.477	.705	.091
ARPU	.535	.664	.247
Churnrate_brand	.362	.840	.229
Market_share	.784	.412	.201
Price_sensittivity	.352	.826	.308
Profitability	.471	.678	.215
Market_investments	.316	.819	.313
Growth_rate	.413	.706	.412
Cost_retaincustomers	.470	.718	.336
Cost_acquirecustomers	.489	.629	.360
Revenue_share	.344	.796	.371
Extraction Method: Principal Component Analysis.			
Rotation Method: Varimax with Kaiser Normalization.			
a. Rotation converged in 10 iterations.			

9.3. Output of regression analysis

In this research study, customer experience has been identified as the dependent variable and the 3 performance parameters of Efficiency, Effectiveness and Impact are identified as independent variables.

Table 6
Model Summary

Model Summary^b					
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.795^a	.632	.588	.941	2.598
a. Predictors: (Constant), REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1					
b. Dependent Variable: Overall					

Model Summary gives the overall model fit. The R Square value here is 0.632 which is a measure of the strength of association. R value is the square root of R-Squared and is the correlation between the observed and predicted values of dependent variable. R value obtained is 0.795which shows that there is a good relation between the prediction and the actual values.

Table 7
Anova Output

ANOVA^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	38.021	3	12.674	14.326	.000^b
	Residual	22.117	25	.885		
	Total	60.138	28			
a. Dependent Variable: Overall						
b. Predictors: (Constant), REGR factor score 3 for analysis 1, REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1						

The analysis of variance is Anova Table. It gives how the regression equation is formed for variability in dependent variable. Sum of squares gives the variability in the dependent variable. The total sum of squares here is 60.138 is nothing but the total amount of variability. Residual sum of squares gives the amount of uncertainty. Here we got 0.000 as the residual sum of squares which shows no uncertainty.

From Coefficient table, the standard coefficients (Beta) are the regression coefficient values in the regression coefficient if the model is fitted with Standardized data. Unstandardized coefficient (B) gives the values for the regression equation. This equation is used to predict the dependent variable from the independent variables.

Table 8
Coefficient Table Output

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	4.828	.175		27.640	.000
	REGR factor score 1 for analysis 1	.649	.178	.443	3.650	.001
	REGR factor score 2 for analysis 1	.674	.178	.460	3.789	.001
	REGR factor score 3 for analysis 1	.695	.178	.474	3.912	.001

a. Dependent Variable: Overall

The coefficient for Regression Factor 1 (Efficiency Construct) (B value is 0.649) is significantly different and important because its significance value is 0.001, which is smaller than 0.05 (ensuring 95% of confidence level).

The coefficient for Regression Factor 2 (Impact construct) (B value is 0.674) is significantly different and important because its significance value is 0.001, which is smaller than 0.05 (ensuring 95% of confidence level).

The coefficient for Regression Factor 3 (Effectiveness Construct); B value is (0.695) is significantly different and important because its significance value is 0.001, which is smaller than 0.05 (ensuring 95% of confidence level).

10. HYPOTHESES TESTING: FACTOR AND REGRESSION ANALYSIS

The output of the factor analysis mentioned three constructs which forms the framework of a measuring tool for performance measurement of CEM activities of cellular service providers. These three constructs are – Efficiency, Effectiveness and Impact. The three constructs together account for 76.338% of the total Variance. (Refer table 3).

Secondly as per the regression analysis (Refer table 6) R= 0.795 which tells us there is a strong relationship between the 3 Performance parameters of Efficiency, Effectiveness and Impact on Customer Experience.

The R Square ($R2$) value is 0.632 (refer table 6). This indicates that 63 per cent of the variation in customer experience is accounted for through the combined linear effects of the 3 predictors or parameters of Efficiency, Effectiveness and Impact.

The F statistic is 0.000 (refer Table 7) which is significant at less than the criterion alpha level (p = 0.01) thus signifying 99 per cent confidence in the ability of the model to explain the dependent variable; hence we can conclude that the regression equation as computed is statistically significant

H1: Efficiency parameters have a significant effect on overall Customer Experience of a Cellular service provider.

The hypothesized factor "Efficiency" turned out to be the most important factor for Customer experience with 31.95% of total variance (refer table 3). The significance (P value) of Efficiency Parameter is 0.001 which is below .05 signifying 95% confidence in the value of the estimated coefficient with the significance value of 0.001. (Refer table 8).

This justifies our 1st Hypothesis.

H2: Impact parameters have a significant effect on overall Customer Experience of a Cellular service provider.

The hypothesized factor "Impact" turned out to be the second most important factor for Customer experience with 25.02% of total variance (refer table 3). P value of Efficiency Parameter is 0.001 which is below .05 signifying 95% confidence in the value of the estimated coefficient with the significance value of 0.001. (Refer table 8).

This justifies our 2nd Hypothesis.

H3: Effectiveness parameters have a significant effect on overall Customer Experience of a Cellular service provider.

The hypothesized factor "Effectiveness" turned out to be the third most important factor for Customer experience with 19.17% of total variance (refer table 3). P value of Efficiency Parameter is 0.001 is 0.000 which is below .05 signifying 95% confidence in the value of the estimated coefficient with the significance value of 0.001. (Refer table 8).

This justifies our 3rd Hypothesis.

11. MANAGERIAL IMPLICATIONS

Balanced scorecard is an important parameter for understanding the position of an organization. It gives a comparative positioning of the organization and also helps in determining the performance measurement to devise strategies for betterment of the company, finally leading to an increase in its profit and position.

The hypotheses findings of this research on Customer Experience Management gives a strong message to the operators that customer experience can be enhanced by focusing on the 36 considered measures under three constructs namely- *Efficiency, effectiveness and Impact*. And the suitable justification for the hypotheses signifies the strength of the framework for enhancing customer experience. The Balanced Scorecard proposed in this paper will help to determine which factors affect the Customer Experience in a Telecom Operator.

The main goal of the management of any organization is to improve performance thereby increasing profit and market position. Our framework will help in identifying the best attributes to Customer experience ensuring less churn to more customer retention and customer loyalty to help in increasing business and maximizing wealth.

The construct "*Efficiency*" has come out as the most important factor affecting customer experience for Cellular operations by Telco's. Therefore, while designing the customer experience strategy, Companies must ensure, in order to enhance customer service, that proper signal strength, call connectivity is maintained so that the number of call drops is reduced. A good amount of data speed, clarity of speech is also to be guaranteed. Complaint handling department should take care that maximum number of queries resolved in a very short span of time. Minimum number of errors, less number of frauds in billing should be encountered. Also, the customer should be notified about billing well in advance. Companies should spend enough time in researching about current market share and also to improve the same.

Secondly, *"Impact"* has come out to be the second most important factor affecting customer experience for Telco's. So, while designing the customer experience enhancement strategy Companies must take care of the issues related to complaints, feedbacks received (both positive and negative), churn rate that is happening to the operator, Profitability, Growth rate, Revenue share, Price Sensitivity. Also they should invest in Marketing, analyze the cost to retain customers and cost to acquire new customers.

Thirdly, *"Effectiveness"* has turned out to be the third most significant aspect so while devising the customer experience enhancement strategy, they must ensure that the bills are sent to the customer timely (in case of Postpaid customers), the customers have options for online bill payment, number of cross connection is kept minimum possible. Also they should check for the following things like number of new subscribers that are recorded in every month, number of visitors to the store every day and in a particular location and also in the app page.

12. CONCLUSION

The proposed approach of **Effectiveness, Efficiency** and **Impact** are important from the perspective of a Telecom Operator. As always, the main aim of any business is to maximize wealth and profit and in a telecom operator, in order to do this, churn should be reduced to minimum. In this competitive market, where each and every Service Provider, almost every day, is coming out with new plans for more and more customer acquisition, Customer experience has become a major differentiating factor and therefore all operators have their own strategies for better customer experience for retaining customers thereby increasing revenue.

Our proposal will help an operator to measure the performance of each factor and thereby helping them to allocate funds appropriately to the same for gaining maximum revenue.

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