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CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	WSN BASED ROBUST GROUND TARGET TRACKING FOR PRECISION GUIDED MISSILES SANTANU CHATTERJEE, SANTU SARDAR, SOUMYADEEP BISWAS & SANDIP ROY	1
2.	IMPACT OF LIQUIDITY ON PROFITABILITY OF PUBLIC SECTOR BANKS IN INDIA: A STUDY OF SBI & BOB MAYANK MALVIYA & DR. SHIRISH MISHRA	8
3.	QR WITH MOODLE FOR EFFECTIVE HIGHER EDUCATION DR. RD.BALAJI, RAMKUMAR LAKSHMINARAYANAN & MALATHI BALAJI	14
4.	INVESTIGATING THE HRD CLIMATE AND PERCEPTIONAL DIFFERENCE OF EMPLOYEES IN BANKING SECTOR GHULAM MUSTAFA SHAMI, DR. MUHAMMAD RAMZAN & AFAQ RASOOL	18
5.	CONSUMER PREFERENCE ON BRANDED PRODUCTS – PERSONAL COMPUTER T. SAMSON JOE DHINAKARAN & DR. C. THILAKAM	24
6.	MOBILE ANALYTICS ON CUSTOMER CHURN P.S. RAJESWARI & DR. P. RAVILOCHANAN	26
7.	GREEN IT: ENERGY SAVING USING PELTIER SHUBHRA SAGGAR & NIDHI KHURANA	31
8.	SIGNIFICANCE OF QUALITY OF WORK LIFE OF EMPLOYEES IN ELECTRONIC BASED MANUFACTURING SECTOR ENNI RAMESH, DR. T. RAJASEKHAR & SAMATHA.J	34
9.	A STUDY ON HOW RISK AND RETURN CREATE AN IMPACT ON PORTFOLIO SELECTION THULASIVELU K & SARANYA PB	38
10.	SAP IMPLEMENTATION FOR PREVENTIVE MAINTENANCE USING BREAKDOWN HISTORY RAJESHWARI. P & SUPRABHA. R	42
11.	AN EMPIRICAL STUDY OF CSR AND CG WITH REFERENCE TO RELIANCE INDUSTRIES AND INFOSYS LIMITED DR. MITA MEHTA & ARTI CHANDANI	48
12.	ISSUES AND CHALLENGES IN INTEGRATING ICT INTO TEACHING AND LEARNING PRACTICES TO IMPROVE QUALITY OF EDUCATION DR. BIRHANU MOGES ALEMU	53
13.	A CRITICAL EVALUATION OF CUSTOMERS PERCEPTION: AN EMPIRICAL STUDY ON THE LEVEL OF SERVICE QUALITY OFFERED BY ETHIOPIAN INSURANCE COMPANY DR. GETIE ANDUALEM IMIRU	63
14.	KEY VARIABLES IN SMEs ELECTRONIC DATA INTERCHANGE ADOPTION: THE EXPERTS' PERSPECTIVE DR. AWINIRAWASHDEH	71
15.	IMPACT OF PARTICIPATIVE MANAGEMENT IN DISPUTE SETTLEMENT: A STUDY ON JUTE MILLS IN WEST BENGAL DR. YOGESH MAHESWARI	75
16.	THE IMPACT OF CASE TOOLS ON SOFTWARE DEVELOPMENT BALAMURUGAN SUBRAYEN, AURCHANA PRABU & ANGAYARKANNI ANANTHARAJAN	79
17.	K-JOIN-ANONYMITY FOR DATABASE ON DATA PUBLISHING S.BOOPATHY & P.SUMATHI	83
18.	COMMUNICATION APPREHENSION: A CONCEPTUAL OVERVIEW ANJALI PASHANKAR.	87
19.	COMPETITIVE FRAMEWORK FOR SMALL AND MICRO FIRMS IN JAMMU & KASHMIR STATE AASIM MIR	91
20.	A GOSSIP PROTOCOL FOR DYNAMIC LOAD BALANCING IN CLOUDS V.VIMALA DHEEKSHANYA & A.RAMACHANDRAN	93
21.	CHANGING CONSUMER SHOPPING EXPERIENCE IN SHOPPING MALL OF INDIAN SHOPPERS SHAHLA JAHAN CHANDEL & DR. ASIF ALI SYED	98
22.	AN EFFICIENT MINING PROCEDURE FOR GENE SELECTION BY USING SELECT ATTRIBUTES S.ANUSUYA & R.KARTHIKEYAN	104
23.	THE IMPACT OF MERGERS AND ACQUISITIONS ON THE FINANCIAL PERFORMANCE OF IDBI BANK VENKATESH.A & MANJUNATHA.K	108
24.	LIVELIHOOD ACTIVITIES: THE DETERMINANTS AND IMPORTANCE OF OFF-FARM EMPLOYMENT INCOME AMONG RURAL HOUSEHOLDS IN TIGRAY REGION, NORTHERN ETHIOPIA HAILE TEWELE & MELAKU BERHE	114
25.	THE RELATIONSHIP BETWEEN THE CAPITAL STRUCTURES WITH THE PROFITABILITY IN TEHRAN STOCK EXCHANGE AKRAM DAVOODI FAROKHAD & SAYED NAJIB ALLAH SHANAEI	124
26.	INDICATION OF MOBILE TESTING ON CLOUD INTERPRETATIONS M.DHANAMALAR & B.AYSHWARYA	129
27.	THE ANALYSIS OF THE EFFECT OF NON-OIL EXPORT (NOX) ON NIGERIAN ECONOMY ADEGBITE TAJUDEEN ADEJARE	132
28.	DOCUMENT CLUSTERING BASED ON CORRELATION PRESERVING INDEXING IN SIMILARITY MEASURE SPACE D. JENCY	138
29.	EXPORT POTENTIAL FOR HANDLOOM AND HANDICRAFT: A STUDY ON ODISHA UMA SHANKAR SINGH & AJAY KUMAR YADAV	141
30.	A NOVEL SURVEY ON IMAGE EDGE DETECTOR SANDEEP KUMAR SHARMA	146
	REQUEST FOR FEEDBACK	150

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OBJECTIVES

HYPOTHESES

RESEARCH METHODOLOGY

RESULTS & DISCUSSION

FINDINGS

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MOBILE ANALYTICS ON CUSTOMER CHURN

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ABSTRACT

The telecom market in India especially mobile telephony continues to grow at a frenetic pace, driven particularly by the rapid penetration of mobile services with an exploding increase in churn rate and disloyalty especially on the youth market. To face this operational challenge it is highly essential to exploit customer behavioural data to identify unique and actionable factors influencing the purchasing decision and customer loyalty. As the customer behaviour of the youngsters and their loyalty is very important, this research mainly targets the youth segment.

KEYWORDS

elecom analytics, Customer value, customer lifecycle analysis, Churn management, Market Basket analysis, Customer profiling, Data mining, customer focus groups, Mind mapping, up selling, cross selling, switching cost.

INTRODUCTION**BACK GROUND**

The Indian telecommunications Industry is one of the fastest proliferating sector in the World and India is projected to bench the second largest telecom market globally by 2011. Indicators are clearly revealing increased competition inducing the customers to hop for low cost options¹. This in turn entangled with disloyalty and as the industry saturates, it become imperative for the mobile operators to shift their focus from rapid acquisition strategies to strategies which helps to maintain and enhance margins from existing customer base.

IMPACT OF THE PROBLEM

Though many service industries are affected by the churn phenomenon, the problem is extremely acute in the telecom industry, with customers joining and quitting in short periods. According to research firm Gartner, India's churn rate is anywhere between 3.5 percent to 6 percent per month, one of the highest in the Asia-Pacific region. Considering that the cost of acquiring a new customer is as high as Rs 3,000, the losses are immense.

CUSTOMER ANALYTICS AND ITS SIGNIFICANCE

Current research is a process with focus on Indian cellular market by which data from customer behavior is aggregated and analysed to gain customer mind map, enabling each business to help make better and quicker business decisions. This information is used by the cellular businesses for direct marketing and customer relationship management. Customer analytics plays a very important role in predicting customer behavior and shaping future customer interactions.

Customer analytics can provide customer segmentation groupings; profitability analysis (which group of customers lead to the most profit over time); personalization (the ability to market to individual customers based on the data collected about them); event monitoring , what-if scenarios (how likely is a customer or customer category that bought one product to buy a similar one); and predictive modeling (for example, comparing various product development plans in terms of likely future success given the customer knowledge base). Data collection and analysis are viewed as a continuing and iterative process and ideally over time business decisions are refined based on feedback from earlier analysis and to make consequent decisions².

The efforts of product development, marketing, client services and other departments are fuelled by customer actions, or at least assumptions about the customer. Recent statistics depicts very high churn in this Industry, is mainly rooted by the Youth segment Hence this study of customer analytics is mainly focusing on Youth segment to lead not only to better and more productive customer relations in terms of sales and service but also to improvement in supply chain management (lower inventory and speedier delivery) and thus lower costs and more competitive pricing.

It facilitates to assess the Customer profitability index and Customer lifecycle, Customer analytics enables an operator to gain a better understanding of the variables that influence customer churn. It enables the Telco to understand which customer is likely to leave and why, which in turn can help the company take the necessary measures to counter it.

Extract of customer analytics provides the telecom company with a sliced and diced view of the customer base, thereby empowering it to treat each customer differently as per needs. The customer attributes typically considered in a churn analysis can be broadly categorised into customer demographics, contractual data, technical quality data, billing and usage data and events-type data. But the most commonly used historic variables include the time a customer spends on air, the number of calls he makes and the revenue generated from that customer.

The predictive information becomes crucial as it gives the service provider a window to proactively fix the glitches in service and contain churn, thereby improving bottom lines. The solution also helps identify cross-sell and up-sell opportunities, which can have a further positive impact on the operator's bottom line.

SUBJECT AREA

Data analytics was performed on customer profile, level of satisfaction, customer loyalty and their buying behavior with regard to Indian mobile telecom providers.

¹<http://www.destinationcrm.com/Articles/Web-Exclusives/Viewpoints/The-Secret-to-Successful-Customer-Analytics-43814.aspx>

²<http://www.corda.com/customer-analytics.php>

OBJECTIVES

Recent trend line shows the growth and prospects of youth marketing³ and especially in the field of Telecommunications, they are marking tremendous development. At the same time indicators are highlighting very high churn rate in this segment. Hence this Research focuses on Youth segment and Research objectives are listed below.

1. To identify the factors influencing the customer loyalty with respect to Indian mobile telecommunications.
2. To determine the level of customer satisfaction with regard to their perceived product quality, services and values.

METHODOLOGY

RESEARCH PROBLEM

Even though Indian mobile telecommunications marked tremendous growth, it is facing very high churn and disloyalty⁴ in the market. It is highly critical to analyze the factors influencing customer loyalty and their level of satisfaction on the cellular providers.

PURPOSE

The purpose of this research is to perform customer analytics by identifying the operational factors that are influencing customer buying behavior, level of satisfaction and loyalty with regard to Indian Mobile telecommunications.

RESEARCH DESIGN

"Exploratory" type of research design is adopted for this study.

DATA COLLECTION

The research work is in need of first hand information. Primary and Secondary data are collected for this survey.

PRIMARY DATA

Survey method was adopted for collecting the primary data. As mentioned above in the research objective, youth segment⁵ falling under the age group of 12 to 34 are selected as the respondents for the research. Questionnaire was structured using the objective set for this study.

SECONDARY DATA

The secondary data had been collected from the previous Research findings, scholarly reports, telecommunication reports, respective marketing departments and through the different sources of literature such as journals, , articles etc.

SAMPLING PLAN

Simple Random sampling method was adopted.

SAMPLE SIZE

The sample consists of 200 persons in the age group of 12 to 34.

RELIABILITY & VALIDITY

RELIABILITY

Reliability is the consistency of a measurement. Questionnaire had been tested with 30 respondents to check the reliability. With SPSS package, reliability was tested. Cronbach alpha value was 0.782 with no exclusions implying the acceptability of the questionnaire for the research work.

VALIDITY

Internal and external validity were checked with the respective sources and every hypothesis is represented by a question in the questionnaire so that they can be tested and measured.

PILOT STUDY

Pilot study was conducted with 30 respondents.

PROCESS OF DATA ANALYSIS

In order to analyze the data collected, SPSS 18.0 and Excel were used

DEFINITION AND MEASUREMENT OF HYPOTHESES SET FOR THIS STUDY

In accordance with the extensive analysis of review of literature, the following null hypotheses were formulated.

The operational definitions and variables are summarized and represented below for the validation of research hypotheses.

TABLE-1: OPERATIONAL DEFINITION AND MEASUREMENT OF VARIABLES

Variable	Operational definition(Hypotheses)	Measurement items
Customer Satisfaction	Perceived product quality(H1)	Call quality
		Coverage of area
		SMS quality
		Network quality
	Perceived service quality(H2)	The convenience and reliability of Inquiring phone fee system
		Service quality of service center and hotline
Demographics	Demographic profile(H4)	Rating price of given quality
		Advertisements about corporate image
		social responsibility
		Gender
		Income
		Mobile Experience

Operational variables are conceived as per the earlier research findings⁶, where researchers defined perceived product quality (H1) measured through Call quality, Coverage of area, SMS quality and Network quality. Perceived service quality (H2) measured with the convenience and reliability of Inquiring phone fee system and Service quality of service center and hotline. Perceived customer value measured through Rating price of given quality, the Advertisements about corporate image and their involvement on social responsibility.

NULL HYPOTHESES

Ho: 1. There is no relationship between customer loyalty and perceived product quality.

³ http://en.wikipedia.org/wiki/Youth_marketing

⁴ <http://www.mobileyouth.org/post/mobileyouth-tv-4/>

⁵ <http://www.mobileyouth.org/>

⁶ Andres K. 2007, Affecting customer loyalty: do different factors have various influences in different loyalty levels?, University of Tartu - Faculty of Economics & Business Administration Working Paper Series. 58. 3-30.

Ho: 2. There is no relationship between customer loyalty and perceived service quality.

Ho: 3. There is no relationship between customer loyalty and perceived customer value.

Ho: 4. There is no relationship between customer loyalty and demographic factors of the respondents.

RESULTS OF ANALYSIS

The above hypotheses were tested using chi square method and results were listed below.

TABLE 2 RESULTS OF HYPOTHESES TESTED

Null Hypotheses		Chi square value	Result
N1	Call quality	255.800*	All null hypotheses rejected
	Coverage of area	160.550*	
	SMS quality	196.300*	
	Network quality	114.000*	
N2	The convenience and reliability of Inquiring phone fee system	106.700*	Ho Rejected
	Service quality of service center and hotline	104.350*	
N3	Rating price of given quality	167.950*	Ho Rejected
	Advertisements about corporate image	117.500*	
	social responsibility	132.200*	
N4	Gender	32.000*	Ho Rejected
	Income	39.050*	
	Mobile Experience	667.550*	

*at 0.05 significance level*at 0.05 significance level

From the above table it is very clear that all the null hypotheses are rejected and so alternative hypotheses are accepted. It has been proved that customer perception on quality, services and values of the mobile service are influencing their buying behavior and creating impact on customer loyalty.

Moreover gender, income, customization of the respondents also found significant in sustaining the loyalty. So Marketers need to closely monitor youth attitudes towards media, products, shopping, health, career, relationships and technology. So the option is participative marketing campaign to understand their perception on product attributes. Marketing campaigns should have functional, educational and emotional components built-in to successfully target youth.

At this stage Marketers should know their level of satisfaction over the product for tapping their apparent mind map and the following table will portray the level of satisfaction of the respondents.

TABLE 3: LEVEL OF SATISFACTION OF THE RESPONDENTS WITH RESPECT TO MOBILE TELECOMMUNICATIONS

Factors	Highly satisfied	Satisfied	somewhat satisfied	Dissatisfied	Highly Dissatisfied
Customer services	13.0%	37.0%	36.5%	10.5%	3.0%
In General	16.5%	55%	25.5%	1.5%	1.5%
Billing-Recharge vouchers	21%	56.5%	18.5%	2.5%	1.5%
AD & Promotional activities	15%	43%	29.5%	8.5%	4%
social Responsibility	13.5%	40.5%	31%	12.5%	2.5%
Tariff plans	9%	36%	42.5%	9%	3.5%
call connectivity	18.5%	45%	30.5%	6%	0%
Network coverage	18.5%	48%	24.5%	7%	2%
Subscription Easiness	9.5%	44.5%	36.5%	6.5%	3%
Value added services	17.5%	56%	19%	5.5%	2%
offers and discounts	15%	43%	29.5%	10.5%	2%
Ringtones and caller tones	4%	10.5%	26.5%	41%	18%
Internet services	14%	38%	38%	9.5%	0.5%

From the above table it is inferred that 55% of respondents are satisfied with the overall performance of the product, 56% and 48% of them are satisfied with the value added services and network coverage. About 57% of the respondents are satisfied with the attributes of Recharge vouchers or billing system. This indicates marketers have fairly identified and targeted their level of expectations. But 41% of the respondents expressed their dissatisfaction on one particular factor - Caller and ring tones. As this survey is focused on Youth segment, Mobile service providers have to concentrate this particular area. Mobile marketing campaigns can be devised for youth audiences to identify their exact expectation in this particular field. Telecom marketers have to improvise their performance in the areas of Internet services, and in designing Tariff plans. They can mind map their customers and based on that, they can come out with differentiated marketing strategies in designing their tariff plans. They have to strengthen their portfolio on customer services.

Recent market survey indicates 97.3% of customer churn happens due to poor customer services. Before designing the marketing strategies, it is highly important to identify the intensity and strength of the selected variables contributing the effectiveness of the research and the following table representing factor analysis to explain the same.

TABLE 4: KMO AND BARTLETT'S TEST		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy		0.754
Bartlett's Test of Sphericity	Approx. Chi-Square	1425.314
	Df	406
	Sig.	.000

The above table shows the KMO value 0.754. It is an overall index implying that the data are likely to factor well based on correlation and partial correlation. Based on this index, it is confirmed that the data support the use of factor analysis and suggest that the data may be grouped into a smaller set of underlying factored. The following table indicates the amount of variation explained by each factors with Eigen values.

TABLE 5: TOTAL VARIANCE

Component		Initial Eigen values		
		Total	% of Variance	Cumulative %
Dimension0	1	2.804	21.573	21.573
	2	1.345	10.344	31.916
	3	1.275	9.809	41.725
	4	1.181	9.083	50.809
	5	.988	7.603	58.412
	6	.895	6.882	65.293
	7	.874	6.724	72.018
	8	.776	5.970	77.988
	9	.766	5.890	83.877
	10	.665	5.115	88.992
	11	.529	4.065	93.057
	12	.433	3.334	100.000

The above table indicates the total variance for each factor along with their Eigen values. This is mainly to know the percent of total variance accounted for by each factor. Hence from the cumulative percentage of variance it is clear that the first four factors together account for 50.809% of the total variance.

TABLE 6: COMPONENT MATRIX

	1	2	3	4
Gender	-.147	.327	-.089	.721
Family income	.027	.635	-.101	-.070
Mobile usage in years	.026	.226	.224	-.621
Service details	.052	-.254	.177	.624
Service quality-quality of phone calls	.764	.043	.109	.178
Service quality-quality of coverage	.818	-.019	.086	-.104
Service quality-quality of sms	.491	.337	.153	-.229
Service quality-quality of network	.467	.444	-.059	-.139
Service quality-quality of convenience & reliability	.084	.576	.302	-.016
Service quality-quality of service center and hotline	.130	.558	.394	-.091
Service quality-rate of pricing for given quality	.134	.316	.493	.116
Service quality-ad	.046	.071	.677	-.021

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 5 iterations.

From the above table is inferred that Quality of coverage and quality of phone calls branched under component1, Family income, quality of convenience and service under component 2, Advertisement and pricing under component 3, Gender and service details of component 4 are identified as they are having high correlation score or factor loading with positive correlation. From this marketers can scheme the factors for designing the marketing strategies. By concentrating on the above mentioned factors, telecom marketers can map the areas where they can lead.

SUGGESTIONS

Customer analytics thus indicating the path way for the Indian Mobile for increasing the customer loyalty and to turn around the churn rate, For that Indian mobile should:

- (1) Keep its good performance on quality of phone call, coverage, quality of SMS and pay attention on these three areas because they are in the first level, which means they have great importance on customer loyalty
- (2) Improve its performance on customer service, advertisements about corporate image, inquiring phone fee system and corporate social responsibility and pay more attention on customer service, because it is in the first level.
- (3) Improve its performance on rating price of given quality significantly and pay great attention on this factor.

CONCLUSION

The telecom industry, especially the mobile industry of India is undergoing a transformation and the number portability is bringing about imperatives worthy enough to carry out high-end research. This study is one such attempt to enhance the exposure on customer analytics and it is also expected to facilitate the marketers to design the essential operational parameters for scheming the retention strategies and to enhance Customer Experience management.

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