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Analyzing Important Factors and Metrics for Small Scale Digital Marketing and Its Relevance in the Path of Conversion

Prakrit Saikia
Ph.D Scholar, Centre For Management Studies, Dibrugarh University, Assam, India
prakrit_cms@dibru.ac.in
8638231206
Bipllab Roy
Assistant Professor, Royal Global University, Guwahati, Assam, India
bipllab.black@gmail.com
9101626663
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Abstract: This study examined the important factors and metrics for achieving goals in small scale digital marketing campaigns and there relative impact on the path of conversion to design a consolidated value to evaluate and optimize conversion. The study uses both survey and real time data analysis. Further analysis include statistical tools like t-test, regression analysis, correlation analysis and factor analysis were used. The findings shows that factors considered relevant by sellers have significant impact on conversion. The different types interactions those impact conversion can be expressed in a single value to estimate conversion. Practical implication of the study is the consolidated value to explain conversion. In low volume analytics a macro figure is important as highly segregated values are extremely small to explain any impact. Conversion Path Analysis from ratio correlation and regression analysis to design conversion equation with input factor flexibility is new concept in developing conversion strategy.

Keywords: Web analytics, Low volume analytics, Metrics, Conversion rate, Social media marketing

Chapter 1: Introduction

Platforms enabled with IT infrastructure with capacity to provide user generated content exchange (Kaplan et. al., 2010). Those can be classified under blogs and micro blogs, content communities, social networking sites, virtual game worlds, and virtual communities (Zhang et al., 2015). The developments in the way that people use the Internet that allow users free access and give them more control over the information (Oxford Advanced Learner's Dictionary). Digital marketing or any technology enabled with elements of interaction and capable of driving conversions are integral functions of day to day operation for many organizations. From Educational Institutions to Sports Clubs, from Automobile to Fashion Brands every sector is utilizing the massive power of digital communication for some good reasons whereas small scale sector however is lagging behind could have been the best beneficiary otherwise. Marketing has never been observed as a primary operation of small scale businesses with the given constrains of conventional marketing. But digital marketing addresses and offer solutions to the biggest constrain of small businesses in marketing that is cost. Digital marketing enhances tracking ability and bring cheaper ways of marketing enabled through web. Small businesses as defined by *MiCro, Small & Medium Enterprises In accordance with the provision of MiCro, Small & Medium Enterprises Development (MSMED) Act, 2006 the MiCro, Small and Medium Enterprises (MSME) are classified in two Classes: 1. Manufacturing Enterprises-he enterprises engaged in the manufacture or production of goods pertaining to any industry specified in the first schedule to the industries (Development and regulation) Act, 1951) or employing plant and machinery in the process of value addition to the final product having a distinct name or character or use. The Manufacturing Enterprise are defined in terms of investment in Plant & Machinery. 2. Service Enterprises:-The enterprises engaged in providing or rendering of services and are defined in terms of investment in equipment. The limit for investment in plant and machinery should be between 25 lakhs to 5 Cr.* However in the context of digital marketing small scale firms can also be those firms who have extremely low volume targets, limited to small geographic area. Low volume target setting at first place can lead to have ripple effect on further stages with limiting size to extremely low volume resulting into high degree of complexity in evaluating and analyzing results. The study considers both the aspects relevant while considering samples for the study. In

the recent years a number of new sellers have got active over Facebook and started using website, it is important to understand the factors resulting into conversion as digital marketing theories or models are fundamentally based on large volume operations and deliver optimum results for large scale organizations. The study covers the small scale producers and sellers from Assam those are using digital marketing techniques mainly a website or Facebook page or WhatsApp account or a combination. A study to address the relevant factors in generating conversion and explore the key metrics required to analyze and enhance those factors through conversion path for small volume operation is required. That can deliver clarity on adopting strategies or defining Key Performance Idicators or deciding analytic approaches. The study considered the last 3 months data (1st June 2019- 31st August 2019) for analysis.

Chapter 2: RATIONAL OF THE STUDY

In the recent years there has been an increasing surge in number of start ups and new businesses in diverse sector. These businesses start as a small organization or individual seller setting up micro units. These businesses operates at very small scale which than grow medium to large gradually with a slow rate. One of the common features among these diverse businesses is the use of internet. All the businesses resort to social media and digital marketing to reach out its customers. A huge number of new Facebook pages and business websites were started in last few years. This aggressive growth in utilization of digital medium for very small scale operations, demands a structured study to understand and generalize the Key Metrics, Pattern of Conversion Path and Objectives of sellers.

Chapter 3: LITERATURE REVIEW

Importance of Digital Technology in Business

Information quality can be transferred through digital technology (Watson, 2006). Adaptation of digital technologies enhances customer relationship and ease information transfer are some primary reasons for firms to use it (Foroudi et al., 2016). Communicating quality information with a right strategy can result huge shifts in customer behavior and marketing performance (OhandTeo,2010). Almost all firms are enabled with digital technologies enhancing cooperation in various stages of data processing and analyzing (Setia et al., 2013; Ray et al., 2005). Digital infrastructure had an disruptive change on different services related to customer (Ray et al.,2005). Shift from customer service to customer convenience is facilitated by digital technologies (Eisenhardt and Martin, 2000; Pavlou and El Sawy, 2006; Teece et al., 1997). Digital technologies are need of marketing campaigns to enhance the conventional marketing reach (Teece, 2007: Day, 1994). Consumer behavior transformation is highly influenced by the web based social channels (Kaplan and Haenlein, 2010). Digital technology has inCreased efficiency and competitiveness (Galloway, 2007; Shideler and Badasyan, 2012; Spurge and Roberts, 2005). Internet technologies can enhance both internal and external technologies (Bharadwaj and Soni, 2007; Chong and Pervan, 2007; Eriksson, Hultman and Naldi, 2008; Kaynak et al., 2005).

Dynamics of digital technology in the context of small businesses

Every successive stage in a digital marketing program of SMEs is dependent on knowledge learnt in the previous stage (Blackburn, 2016). Small scale businesses “develop, change, and evolve their marketing activity intelligence through social media use” (Atanassova and Clark, 2015, p. 163). Technology adaptation in small business scenario is mostly driven by internal factors (Alam,2009;Dahnil et al.,2014;Gilmore et al.,2007 ;Yeung et al.,2003) such as “resource limitations, risk, procedural complexity, and technical challenges”.Because the decision-making processes of small business owners and managers reflect those of individual decision-making behaviors (Dahnil et al., 2014). Small businesses digital marketing performance is dependent on ability of the management to understand and operate the technology (McGowan and Durkin, 2002). Developing skills required for digital marketing considered to be the biggest constrain for small businesses (Järvinen et al., 2012). SMEs are sales oriented and marketing is based on awareness of product (Hill,2001; Reijonen,2010). A change in management when more skilled generation takeover marketing with best practices will be adopted by SMEs (Hill, 2001). For SMEs use of web technologies can be highly effective in cost reduction (Chong and Pervan, 2007; Kaynak et al., 2005; Lohrke et al., 2006). SMEs marketing practices are “informal, reactive and spontaneous” (Gilmore et al., 2004). Decision making is driven by resources not external factors in SMEs (Barney, 1991; Grant, 1991; Lockett and Thompson, 2001;

Hawawini et al., 2003). Three main reason to adopt digital technologies by small firms "firm-specific and owner-manager factors, resource-related factors and environmental factors" (Karjaluoto and Huhtamäki, 2010). Capital investment decisions are driven by existing strategies and future expectations (Reichheld and Schefter, 2000).

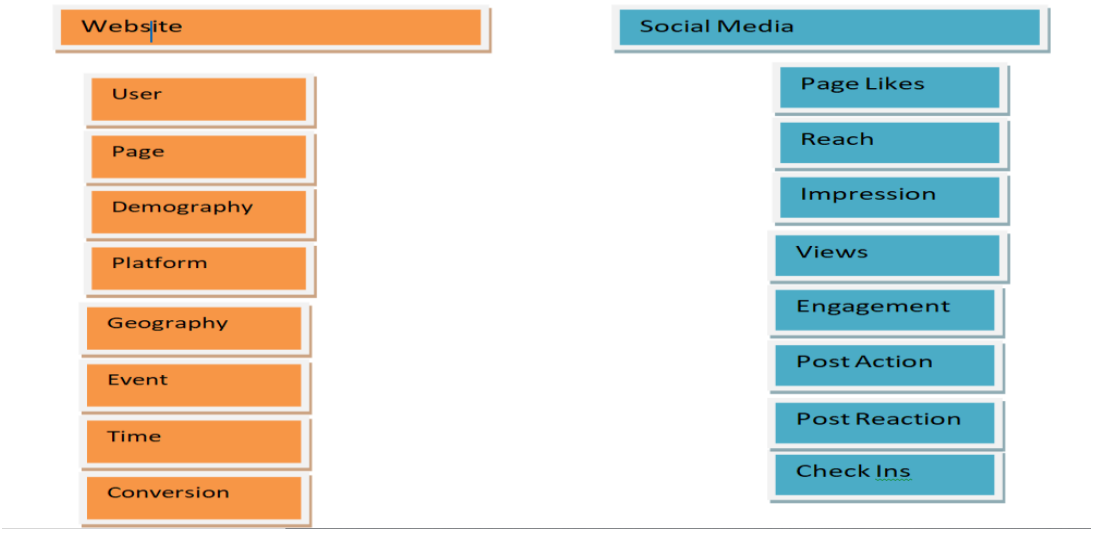
Need for a study

Most of the traditional marketing theories are not capable of delivering results in the context of small and medium scale businesses (Reijonen, 2010). Large businesses have always been the axis of digital marketing researches (Celuch and Murphy, 2010; Järvinen et al., 2012; Michaelidou et al., 2011). Large firms are quick adopters because of resource availability (Barnes et al., 2012). Adaptation is impacted by both internal and external factors (Dholakia and Kshetri, 2004).). Dynamics of digital marketing for both large and small business are different,(Harrigan et al., 2011 ; Nguyen et al., 2015). Many earlier researches and studies assumes that most of the functions of digital marketing are outsourced (Edelman,2010; Leeflang et al.,2014; Montalvo,2011). The best and advance marketing practices of the industry are hardly adopted by SMEs (Parrott et al., 2010). Absence of a strategy and marketing model is a common phenomenon with SMEs (Hill, 2001). A defined and clear plan can deliver results in marketing for SMEs (Parryetal.,2012). The researches related to adaptation, utilization and challenges have been discussed widely (Carroll and Wagar, 2010; Chatzoglou et al.,2010; Dholakia and Kshetri, 2004; Lohrke et al., 2006; MacGregor and Vrazalic, 2005; Parker and Castleman, 2007; Proudlock, 1999). Size of the firm influences the technology acceptance and absorption (Bordonaba-Juste et al., 2012; Teo, 2007). Although most of the earlier study followed structured interview or questionnaire pattern a real time data analytics of small business for academic purpose is still limited. The study focuses on understanding the factors relevant for achieving goals by small businesses, contribution of applied analytics by businesses and explores the conversion path.

Hence the objective of the study is to identify the most influential factors for conversion and most relevant metrics to estimate conversion.

CONCEPTUAL MODEL

The model has been developed for initial data collection.



The metrics dimension for website was selected from Google analytics and social media metrics were selected from Facebook insights. All the dimensions were included for the survey out of which most relevant metrics according to the respondents were retained for data collection.

4. RESEARCH METHODOLOGY

4.1 Universe of the study and sample size

This study has been conducted to understand the important factors in digital marketing for small sellers in achieving goals. Hence the universe comprises all the small scale sellers having digital access to its customers operating from the geographic region of the study (Assam, India). Therefore the total unit in the universe is indefinite.

4.2 Sampling Framework

Step 1: Sample segment identification has been done by keyword search: Assam Sellers, Guwahati Sellers, Business pages in Assam, Sellers from Assam, by using Facebook search bar.
Result: This lead to identification of major segments like Assamese ethnic material sellers, t-shirt sellers, local used goods seller.
Step 2: Sample identification has been done by using specific key words like: Mekhela Chador Assam, Assamese Jewellery, T-Shirt Sellers in Assam on random days with 7 unique Facebook accounts from 3 unique locations namely North Lakhimpur, Jorhat and Guwahati on 15 different dates during the month of October 2019.
Result: 80% of top search results remain constant per user id per location where as more view listing showed 40-50% diversions per search.
Step 3: Page visit has been done to check the relevance Criteria and with the fulfilment of Criteria samples were approached with a structured questionnaire and data sharing appeal.
**Criteria: (i) A page with minimum member of 500.*
(ii) The page must have at least 1 post in last 3 months.
(iii)The page must appear within top 25 search listings for at least one keyword.
Total number of pages found was 634.
Total Number of pages found under Criteria was 124.
Total responses came was 117.
Total relevant responses was 100.

4.3 Data Collection

The data has been collected in two phase with initial phase aim to gather insights on most important factors and metrics for sellers and their goal of digital marketing.
The initial survey was carried out with a structured 10 point scale questionnaire with 45 elements categorically divided under two sections for metrics and objective. The elements for the questionnaire were developed using Google Analytics metrics and Facebook Insights metrics. For objective Google Analytics and Facebook Goals have been used.

4.4 Tools and Techniques

4.4.1 Data Analysis Tools

For the first part of the survey a structured questionnaire has been used and for the second phase data collection process has been divided into 3 groups under Website, Facebook and WhatsApp. For website Google Analytics Reports (1st January 2019- 30th September 2019) form sellers and data extracting tool Alexa, Ubersuggest and Seranking has been used for extracting interaction, traffic and search engine related data. For Facebook data has been collected from sellers by taking inputs of Facebook insights for 9 months (same period as website). For interactive platform data has been filtered using WhatsApp business insights and for those sellers who don't maintain a business account Chatilyzer and Wordcount.net has been used.

4.4.2 Statistical Tools used

Descriptive Statistics has been used to define the type of the data set and compare between aggregated data and average data sets to find any gap. Kolmogrov-Smirnov Test has been done to test the data normality. Correlation analysis has been used to find the type of relationship and to understand the path of conversion. Regression analysis has been done to find the impact of Independent Variables (correlated factors) on Dependent Variable (Objective) to estimate conversion. Principal Component Factor Analysis has been done in the case of website as ratio correlation analysis failed to reduce factors. One Sample T-Test hypothesis testing has been used to generalized the Minimum Interaction required for objective,

Chapter 5: Data Analysis

5.1 Descriptive

The paper covers 100 sellers from Assam, primarily from Guwahati (Assam). The survey aimed at gaining insights about use of digital marketing formats and data analysis approach (key Metrics). Descriptive analysis summarizes the total number of sellers using different platforms and highly rated metrics out of all.

5.1.1 Important Metrics Dimensions

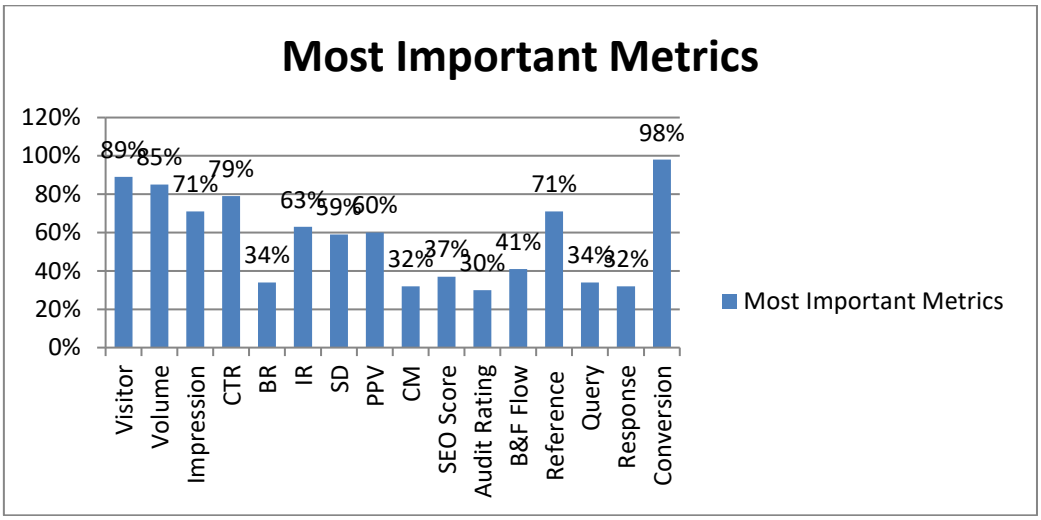


Figure 5.1.1: The data represents the most tracked metrics by the sellers are Conversion, Visitor and Volume with 98%, 89% and 85% respectively. Whereas the Bounce Rate, Content Match, SEO Score, Audit Rating, Query and Response are least important metrics as only 34%, 32%, 37%, 30%, 34% and 32% respectively. All the other metrics mentioned in the survey like Impression, Click Trough Rate, Interaction Rate, Page Per View, Session Duration, Reference and Back and Front Flow are moderately Important as between 50-80% sellers on average have marked them important.

5.1.2 Total Volume and Mean Volume

Platform	Factor	Total	Average
Website (n=43)	Visitor	40602	944.22
	Impression	78563	1827.04
	Click	54879	1276.25
	Session Duration	2610	60.69
	Time Spent on Page	2887	67.13
	Page Viewed	119	2.76
	Conversion	9876	229.67
Social Media (n=100)	Members	837500	8375
	Reach	458371	4583.71
	Engagement	87569	875.69
	Post	8456	84.56
	Conversion	11670	116.7
Interactive Platform (n=34)	Unique Visitor	5387	158.4
	Query	38784	1140.7
	Response	55988	1646.7
	Reference	2542	74.7
	Conversion	3900	114.7

The above table represents the aggregated volume of sample for each factor across the platforms. For website impression, click and visitor has close figures whereas other factors aggregated volume was recorded comparatively low, indicates websites performed poorly at onsite activities. For social media the huge gap between member, reach and engagement volume indicates that all the factors were impacted by some common factor at a proportionate rate although it cannot be verified at volume level. Query and response volume were found to be very high comparatively to visitor and reference which indicates high interactively of vistors and high responsiveness of sellers. The huge gap between aggregated volume and average volume indicates that only few sellers have performed well.

5.2 Frequency for minimum required interaction volume

The tables represent the frequency of interaction required to generate a related interaction for each factor. The frequencies were used to estimate the most and least performing factors for generating interaction.

Table 5.2.1: The table represents minimum volume for website

Metrics	Values
Click per visitor	1.351633
Impression Per Click	1.431568
Impression per visitor	1.934954
Click Per 1 unit of time spent on page	2.110301
Click per session duration	2.334268
Impression per 1 unit of time spent on page	18.44233
Impression per session duration	20.39962
Click per unique page view	51.19697
Visitor per 1 unit of time spent on page	140.6401
Visitor per session duration	155.5663
Impression per unique page view	447.4202
Visitor per unique page view	3412

The result revealed that frequency of impression and click (to generate visit) and click (to generate session) were extremely low with (1-3). Whereas frequency for Impression (to generate session and time spent) and click (to unique page view) was recorded moderately high (18 -52) and frequency for visitor (to generate time spent, session and unique page view) and impression (to generate unique page view) were extremely high (140-3412).

Table 5.2.2: The table represent minimum volume for social media

Metrics	Values
Post to Reach	0.018447938
Post to Engagement	0.096563853
Member to Reach	1.827122571
Reach to Engagement	5.234398018
Member to Engagement	9.563886764

All the frequency for interaction per factor were close to each other with a rage of 0-10. The frequency pattern revealed that post volume required for reach and engagement is lower than reach and member required for engagement that indicates only few post have performed well whereas majority of post failed to generate reach. 1.8 members per reach indicate post visibility was limited to less than 60% of the community size.

5.3.1 Conversion Rates

The total volume of interaction per factor against total conversion volume was tested to obtained rates for some of most common conversion metrics. The conversion ratios considered for website were: Visitor to Conversion (24.3%), Impression to Conversion (12.5%) and Click to Conversion (17.9%). The rates indicated that visitor generated highest conversion and impression has the lowest conversion. As search leads

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to impression, impression leads to click, click leads to visit and visit leads to conversion. Low impression to conversion indicates that only a visitor with high degree of intent converts.
The conversion ratios considered for Facebook were: Member to Conversion (1.38%), Post to Conversion (142%), Reach to Conversion (2.54%) and Engagement to Conversion (13.3%). The rates indicated that Post to conversion has generated highest conversion whereas Member to conversion has lowest rate. Frequency of post per seller per day was found to be 1.1 which was lower by any standard. The results obtained indicate that post and engagement has high impact on conversion and impact of reach on conversion was low. This indicate only audience with high intent of conversion interacts with post.
The conversion ratios considered for WhatsApp were: Visitor to Conversion (72%), Query to Conversion (10%), Response to Conversion (6.9%), and Reference to Conversion (84.5%). The rates revealed that Reference generated highest conversion whereas Response generated lowest. This indicates that visitor reached site through reference has highest conversion potential.

5.3.2 Minimum Interaction per Conversion

The frequency of interaction required to generate 1 unit of conversion. The frequencies were used to estimate the most and least performing factors for generating conversion. For website the minimum required interaction per conversion for each factor were Visitor (4.1), Impression (7.9), Click (5.5), Session Duration (0.26), Time Spent on Page (0.29) and unique page view (0.01). The pattern shows that a lower session, time on page and unique page for generating conversion once again validates only visitor with high intent converts. A better placement strategy can reduce impression frequency with higher click and visit. For Facebook the minimum required interaction per conversion for each factors were Member (71.7), Reach (39.2), engagement (7.5), Post (0.66). A lower frequency of post but high member and reach indicates high post frequency can reduce the other required volume and enhance conversion rate. For WhatsApp the minimum required interaction per conversion for each factors were: Visitor (1.3), Reference (1.4), Query (9.9) and Response (14). The close frequency of visitor and reference indicates visits often resulted into conversion and high frequency for query indicates visitor makes frequent queries before converting.

5.4 Correlation Matrix

Although volume analysis revealed the minimum required interaction per conversion along low and high performing factors for conversion. It doesn't explained the path of conversion. As any successive interaction is linked with previous interaction correlation analysis of conversion rates was conducted. The rates were obtained from total volume of each factor against total conversion volume independently and correlation was tested.

5.4.1 (Website): The matrix represents the correlation between rates of conversion for all factors

	V to CR	Vol to CR	Imp to CR	C to CR	SD to CR	TSP to CR	PV to CR
V to CR	1						
Vol to CR	0.829	1					
Imp to CR	0.861	0.829	1				
C to CR	0.861	0.896	0.987	1			
S to CR	0.944	0.882	0.923	0.923	1		
TSP to CR	0.923	0.774	0.847	0.847	0.940	1	
PV to CR	0.770	0.612	0.777	0.777	0.757	0.824	1

For website the tested rates were: Visitor Conversion Rate, Volume Conversion Rate, Impression Conversion Rate, Click Conversion Rate, Session Conversion Rate, Time Spent on Page Conversion Rate and Unique Page View Conversion Rate. Correlation matrix revealed that all the factors are highly positively internally correlated, that leads us to conclude that by improving any of the ratios can result into higher conversion rates. Impression Conversion Rate to Click Conversion Rate has the highest rate at .987. This explains that impression leads to click and click leads to conversion. Although overall volume for Impression and Click to Conversion is very less that means more impression can lead to more click.

5.4.1.1. Factor Analysis

As the correlation analysis could not narrow down the most important factors directly relevant for conversion required a structured approach to reduce the factors to understand the pattern of conversion. Factor analysis aims to obtain the most valuable components.

Factor analysis was conducted on 7 ratios taking them as factor with oblique rotation (direct oblimin). The KMO measured verified the sampling adequacy for the analysis, KMO=.93. An initial analysis was run to obtain eigenvalues for each component. The results shows first 2 components have eigenvalues more than 1 and explain 77.8% of variance. Scree plot justified the retention of factor 1 and 2 for further analysis. The items that cluster on the same components suggested the component 1 represents activities on website leading to conversion and component 2 represents website performance in the search engine or generating required traffic for onsite action for conversion.

Pattern Matrix

	Component	
	1	2
CR to TSP	.972	
CR to S	.965	
CR to PPV	.867	
CR to V		
CR to Vol		
CR to C		.996
CR to Imp		.996

The above Pattern Matrix results indicate that onsite factors were highly loaded on Visitor to Conversion where as website performance factors loaded on Volume to Conversion. That lead to conclude that optimized search performance can result into better impression which can result into better successive performance until visit. From visit onsite factors like Session Duration, Time Spent and Unique Page View has to be optimized with quality outputs.

Conversion path is = Impression to Click to Visit to TSP to Conversion

5.4.2 (Facebook): The matrix represents the correlation between rates of conversion for all factors

	MCR	PCR	RCR	ECR
MCR	1			
PCR	0.21	1		
RCR	0.23	-0.03	1	
ECR	0.72	0.06	0.77	1

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For Facebook the tested rates were: Member Conversion Rate, Post Conversion Rate, Reach Conversion Rate and Engagement Conversion Rate . The correlation matrix revealed that most significicant relations were: Members Conversion Rates to Engagement Conversion Rate and Reach Conversion Rates to Engagement Conversion Rate has the second highest and highest correlation with 0.72 and 0.77. This shows that Conversion is driven by reach and engagement and those can achieve by improving quality members. Negative correlation ash been obtained for Post Conversion Rate to Reach Conversion Rate indicate that overall conversion is not driven by post and post reach.
The conversion path is = Member to Reach to Engagement to Conversion

5.4.3 (WhatsApp): The matrix represents the correlation between rates of conversion for all factors

	CR to V	CR to Q	CR to R	CR to Ref
CR to V	1			
CR to Q	0.62	1		
CR to R	0.35	0.40	1	
CR to Ref	0.78	0.54	0.20	1

For WhatsApp the tested rates were: Visitor Conversion Rate, Query Conversion Rate, Response Conversion Rate and Reference Conversion Rate. The correlation matrix revealed that Visitor to Conversion Rate: Reference Conversion Rate has the highest correlation followed by Visitor Conversion Rate : Query Conversion Rate and Query Conversion Rate: Reference Conversion Rate. These indicate that the visitors arriving at site from reference and visitor making queries have higher rate of conversion. Also visitors arriving from reference tend to make more queries.
The conversion path is = Reference to Visit to Query to Conversion.

5.5 Regression Analysis

Initially independent regression analysis was conducted with factors in the conversion path for all the platforms separately. Factors were taken as independent variable (X) and conversion was taken as dependent variable (y). The factors of conversion path (impression, click, visit and time spent on page) were taken as independent variable (x) for website and tested against dependent variable (y=conversion). The adjusted R2 values obtained from the analysis revealed that highest variation over conversion can be explained by visitor (.94) followed by impression (.80), click (.78) and time spent on page (.52). For Facebook (member, reach and engagement) were taken as independent variable (x) and tested against dependent variable (y= conversion). For Facebook the adjusted R2 values obtained from the analysis revealed that highest variation over conversion can be explained by member (.78) followed by reach (.72) and engagement. For WhatsApp (reference, visit, query) were taken as independent variable (x) and tested against dependent variable (y=conversion). The adjusted R2 values obtained form the analysis revealed that highest variation over conversion can be explained by visit (.90) followed by reference (.87) and query (.79). The factors with adjusted R2 value above .50 were retained for further analysis of linier regression model for conversion.

5.6 Minimum Required Value (MRV)

As all the factors in the conversion path were highly internally correlated hence a standardized score was required for modeling. All the factors from independent regression analysis were retained as adjusted R2 value requirement (>.50) was met by all the factors. Minimum required score was computed to find a combined level of interaction for 1 conversion. As conversion was not driven by any single factor instead a set of interaction combined has resulted into conversion. MRV was obtained for each sample by computing the contribution of each factor per conversion (i.e. MRV (sample 1) = x1/conversion+y1/conversion+z1/conversion+ …….). Than the MRV and conversion were converted between 0 to 1 by dividing each MRV score and conversion value with the respective highest value . i.e MRV regression value = MRV(n)/highest MRV value and conversion regression value= conversion(n)/highest value. Regression analysis for conversion modeling was conducted with MRVof each sample taken as independent variable (x) and tested against dependent variable (y=conversion). For website adjusted R2 (.82) and p-value (.000) at .5 level of significance validate the obtained model {conversion= 1.64+.587(MRV)}. For Facebook adjusted R2 (.78) and p-value (.000) at .5 level of significance validate the obtained model {conversion= 2.57+.871(MRV)}. For WhatsApp adjusted R2 (.84) and p-value (.000) at .5

level of significance validate the obtained model { conversion= 1.17+ .678(MRV)}. Although the model fit and simple correlation found to be high it was observed aCross the samples that the individual contribution of factors in conversion does not follow a identical pattern. That indicates MRV has direct impact on conversion irrespective of factor contribution.

5.7 Contribution Correlation Matrix

The regression curves obtained established the liniar relationship between the overall combined interaction (MRV) and conversion. As mentioned earlier the factors have internal correlation the contribution correlation matrix was obtained to define the combine effect of factors on MRV and conversion. The contribution score for each factor was obtained by taking the percentage share of the factor in the total MRV. The test result obtained revealed that visitor has negative correlation with impression (-.88), click (-.84) and time spent on page (-.74) for website whereas positive correlation were obtained for impression: click (.81) and impression: time spent on page (.62). The relationship patter indicates that a huge volume of visitor those have converted reached website through non-tracked links. Increase in any factor contribution can result into better conversion performance but placement analysis for visibility optimized strategy will reduce the cost of conversion and relationship can be converted into positive. For WhatsApp query to conversion : reference to conversion was found to have high positive contribution correlation (.88) whereas unique visitor to conversion has negative relation with query contribution (-.48) and reference (-.53). The result obtained revealed that visitor conversion was highly dependent on reference. For Facebook the contribution correlation revealed positive relationship for post to conversion: member to conversion (.45) and engagement to conversion: reach to conversion (.65) whereas negative correlation was obtained for total engagement to conversion: member to conversion (-.62) and total reach to conversion: post to conversion (-.55). The test indicate that post contribution in conversion resulting reach and engagement was low whereas engagement generated directly contributed in conversion.

5.8 T –test

T-test has been conducted to generalize the minimum required interaction input in MRV per factor. The Minimum Interaction per Conversion has been taken as ‘μ’.

5.8.1 Website

H_01_{ws} : Minimum visitor required per conversion (μ) = 4.1
H_02_{ws} : Minimum impression required per conversion (μ) = 7.9
H_03_{ws} : Minimum click required per conversion (μ) = 5.5
H_04_{ws} : Minimum required session duration per conversion (μ) = 0.26
H_05_{ws}: Minimum required time spent on page per conversion (μ) = 0.29
H_06_{ws} : Minimum required unique page view per conversion (μ) = 0.01
The independent t-test conducted for respective ‘μ’ values resulted p-values were: visitor (.512), impression (0.412), click (.526), session duration (.612), time spent on page (.215) and page view (.322)) at 0.05 level significance lead to accept null hypothesis for all factors.

5.8.2 Facebook

H_01_f: Minimum member required per conversion (μ) = 71.7
$H_0 2_f$: Minimum post required per conversion (μ) = 0.66
H_03_f: Minimum reach required per conversion (μ) = 39.3
H_04_f: Minimum engagement required per conversion (μ) = 7.5
The independent t-test conducted for respective ‘μ’ values resulted p-values were member (.286), post (.458), reach (.785) and engagement (.459) at 0.05 level significance lead to accept null hypothesis for all factors.

5.8.3 WhatsApp

$H_0 1_w$: Minimum visitor required per conversion (μ)= 1.3
H_02_w: Minimum query required per conversion (μ)= 9.9
H_03_w: Minimum response required per conversion (μ)= 14
$H_0 4_w$: Minimum referral required per conversion μ= 1.4
The independent t-test conducted for respective ‘μ’ values resulted p-values were: visitor (.614) query (.272), response (.951) and reference (0.125) at 0.05 level significance lead to accept null hypothesis for all factors.

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The values can be considered as lower limit of factor in perfect for conversion.

Chapter 6: Results

6.1 Website

Conversion Path= f{V to CR =f(C to SD to CR, TSP to CR, C to CR, Imp to CR) + Imp to CR=f(C to CR), (SD to CR)+ C to CR= f(SD to CR)}

That states Conversion path is Impression to Click to Visit to TSP to Conversion

Low Impression and Lower Position in SERP raking for website are due to Negative relationship between High value Keywords and Relative Position.

Key Metrics: *Impression Rate, Click Through Rate, On Page Interactions*

6.2 Social

Conversion= f {(P, R, E) * member}

That states conversion path is Post to Reach to Engagement to Conversion.

Initiated by Post, as post generate reach, reach resulted into engagement and lead to conversion. The overall process is influenced by total member.

Key Metrics: *Post Frequency, Reach per Post and Engagement Rate (per post, per reach, per member)*

6.3 WhatsApp

Conversion= f {Ref to V, V to Q, Q to Ref)

That states conversion path is Reference to Visit to Query to Conversion.

Key Metrics: Rate of Referrals, Query per Visitor, Query per Referred Visitor, Query per Conversion

The study has found the all the metrics required to analyze the factors identified as most relevant for conversion has been ranked higher by the respondents for website and social media. Query and Response along with Reference as Crucial factors for conversion has been revealed by the study, was not initially mentioned by the respondents at first stage.

Chapter 7: DISCUSSION AND IMPLICATION

The study examined the factors important for conversion goal for small scale sellers. In the recent time it has be witnessed that a huge number of sellers started using digital technology, it is important to understand the operative ecosystem of the marketers with low volume targets as no such models are defined as exclusive for small scale marketing. The frequency pattern analysis indicate that factors related to traffic generation required lower volume of interaction and factors related to onsite activities required high volume of minimum interaction for websites whereas for Facebook it was found that visibility per post was very limited (>60% of the total community) and combined effect of post was poor whereas few post has performed extremely well. Conversion rates revealed that WhatsApp has the highest potential for conversion among all the platforms. From conversion path design for website and social media reviled that that customer interaction pattern has the highest influence over conversion. As website performance at search level determined the visit which is first step in conversion. The study also reveals that websites *time spent on page* and session were identified as highly relevant factor for conversion. That indicates websites should improve the quality of the content and should achieve faster rate of response with techniques like Chat Bot implementation. Retaining visitor on site will improve conversion. On the other hand website performance on search revealed that volume is the determinant force for impression and click. Search performance correlation analysis revealed that a negative correlation exist between valuable keywords and relative position. The gap reduction measures can improve impression and result into more clicks. Similar to website social media also register a huge gap between actual and average volume which indicates only few units of the sample performed extremely well. For some factors like members have high average score but conversion remained very low. *Member, Engagement* and *Reach* have highest influence on conversion. Hypothesis testing revels that all sellers have perform better than minimum requirement for one conversion. Whereas interactive platform has some unique factors like *Reference* and *Query* with highest influence on conversion. Highest conversion rates among all the platforms has been registered by interactive platform when reference is the influencer with 84%. The highest rate registered by Query to Unique Visitor, whereas highest conversion has been registered by reference although Reference to Query rate registered

comparatively low, indicates that referral visitors visits with an intent to convert. That shows sellers must try to get more referrals and appeal visitor to make more query as it is second most influential factor in determining conversion. The study conclusively shows that metrics considered important by sellers are relevant in deterring the goal of conversion. For social media conversions are not driven by post directly but by engagement. Sellers should try to post more relevant contents those are highly interactive after doing a content engagement analysis testing from past data. And improve frequency of post. The study doesn't reveal any requirement of separate strategy for small marketing conditions or develop any new metrics but suggest improving the performance of the digital assets for achieving better rates. The hypothesis testing for social and interactive platform shows that every page and account has at least some interaction and conversion as pages and accounts have reported above minimum requirement mark of combined volume. The minimum required volume for all platforms has been identified as lower threshold limit for generating conversion. Regression analysis revealed that ant change in MRV can result into a proportionate change in conversion and contribution correlation revealed that aggregate MRV is not dependent on any fix contribution pattern, hence the study suggest sellers to improve MRV at an exponential rate by improving the most favorable factor in their respective conversion path for better conversion performance.

Chapter 8: LIMITATION AND FUTURE DIRECTION FOR RESEARCH

The study has some limitations due to constraints related to low volume of data. A similar study with a bigger sample size can validate the findings with more conCrete evidence as the volume of data analyzed may not be sufficient for explaining the variation and dynamic situations those generate interactions. Factors like capital investment, Life Time Length are not considered for the study. Similar study can be done by exploring one digital unit at a time for different location and content. For direct interaction "query and reference" analysis can be done to further reveal the type of "query" which generates highest conversion.

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Annexure

Test for Normality

Kolmogorv-Smirnov test was conducted to test the normality of the data set processed for regression analysis and t-test. For t-test volume level data set of all factors were tested for each platform. The results were obtained for website taking visitor, impression, click, session, time spent on page, unique page view and conversion (Kolmogrov-Smirnov values for all factors were between .541 to .741 and Asymp. Sig. 2- tailed were between .321 to .641), for Facebook (member, post, reach, engagement and conversion) Kolmorov-Smirnov (were between .451 to .655) and Asymp. Sig 2 tailed (were between .382 to .589) for all factors and WhatsApp (unique visitor, reference, query, response and conversion) Kolmorov-Smirnov (were between .432 to .681) Asymp. Sig. 2 tailed (were between .351 to .622) as all the values (>.05) at 95% level of confidence conclude data was normally distributed for each platform.

For regression analysis MRVs and conversion values of each platform were tested. For website, Facebook and WhatsApp and results obtained for Kolmorov-Smirnov test for each platform (between .342 to .541 for MRV and .387 to .687 for conversion) and Asymp. Sig. 2 tailed (between .322 to .511 for MRV and .321 to .578 for conversion) were above the required value (>.05) at 95% level of confidence conclude data was normally distributed.

Alphabetic Notations	Meaning
V	Visitor
Vol.	Volume
Imp.	Impression
C	Click
SD	Session
TSP	Total Time on Page
PV	Page View
Cov.	Conversion
MCR	Member Conversion Rate
PCR	Post Conversion Rate
RCR	Total Reach Conversion Rate
ECR	Engagement Conversion Rate
CR	Conversion Rate
Q	Query
R	Response
Ref.	Reference
MRV	Minimum Required Value