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### Customer Service Enhancement through “On-Road Vehicle Assistance” Enabled with Internet of Things (IoT) Solutions and Frameworks: A Futuristic Perspective

Samir Yerpude<sup>1</sup> and Tarun Kumar Singhal<sup>2</sup>

<sup>1</sup> Research Scholar, Faculty of Management, Symbiosis International University, Pune, Maharashtra, India

E-mail: [yerpude.samir@tatamotors.com](mailto:yerpude.samir@tatamotors.com)

<sup>2</sup> Professor (IT Management), Symbiosis Institute of Telecom Management, Constituent of Symbiosis International University, Pune, Maharashtra, India, E-mail: [dr.tarun@rediffmail.com](mailto:dr.tarun@rediffmail.com)

**Abstract:** Purpose: To ascertain the customer expectations from a brand, the impact of a service product i.e. on-road assistance on the brand loyalty and IoT solutions and frameworks to improve the effectiveness of on-road vehicle assistance. The primary data used in the following research is collected from over 100 plus vehicle owners who own vehicles of different brands to analyze a completely random sample. Data from India Customer Service Index Study (CSI)-Mass Market (2016) along with data from a survey conducted by Zendesk referred to decide the parameters on which the vehicle owner's opinion was recorded with the survey tool. The opinion noted in terms of scoring on a five-point Likert scale. Single sample non-probabilistic tests conducted to determine the importance of each of the parameters considered. Along with the above correlation test was also conducted to find out the correlation between the service product and the customer brand loyalty. After calculating the Pearson's coefficient, the p-value of the correlation is determined to assess the strength of the correlation. The present empirical analysis supports the theory that service products have a positive impact on the brand loyalty and further generates insights, which determine the customer expectations from the brand. For the parameters delved, the researchers have determined IoT solutions to improve the effectiveness of the service product i.e. On-road assistance vehicle.

**Keywords:** Internet of Things; Brand Loyalty; On-Road Assistance; Customer Service; Service Product; Customer Satisfaction; Customer Relationship Management

### INTRODUCTION

Customer Relationship Management: Customer relationship management (CRM) plays a pivotal role in this area. CRM has cemented its position in business since inception; Customer Relationship Management

presents a groundbreaking strategic framework for successful CRM policy (Knox et al., 2007). CRM helps getting the point of view from the market and implemented' in its full potential can acquire the business value. CRM should not be misunderstood' as an IT initiative; it is a Business Process or a Business Strategy intended to derive Business Value enabled by Information Technology, creating value for its customers. In the current era of customer driven businesses, CRM is must have in the Top Management agenda (Buttle, 2009).

**Customer Service:** The support that is, offered to the customers before and after the product is bought, is called Customer service, which enables the customers to enjoy the product and the experience. It encompasses the brand promise that is made to the customers than just providing answers (Payne et al., 1991).

**Service Product:** Service products are bought and consumed at the same time and therefore it is very difficult to ascertain involvement of the customers. They involve certain indivisible intangible elements and involve participation from the customer in a significant way. They cannot be sold as a transfer of product ownership as they have no title. Now-a-days, businesses have come up with service products, which are partly tangible and intangible so that they can be classified as goods or services (Beamish & Ashford, 2007).

**Brand:** An identity by itself created by a name given to a product or service is called a Brand (Aaker, 2012). Depending upon how a brand is promoted, a brand can create sense of loyalty, faith, trust or market pulse and an image in the minds of the customers. The differentiation of the product, which enables the organization to charge a premium against the product or service offered, is because of the brand name that imbibes faith in the minds of the customers (Porter, 2008). It's the brand, which lives more than any product or service for an organization and at times also gets named as the product (Baker, 2007).

**Real Time Data:** Quick decision-making is enabled by the real time data collected at source (Sodhi & Tang, 2010). The objective of quick decision is realized only when the requirements of the decision pointers is spelt out in advance and parameters are frozen on the basis of which decision can be taken in a dynamic and distributed environ-ment. Gathering the values of the required variables is needed for closed loop decision making. These sensors and data collection equipment become an integral part of the Internet of Things eco-system transmitting data to the variables over net (Yerpude & Singhal, 2017).

**Internet of Things:** The budding channel of gathering, storing and transmitting information on the web has been the internet, which has emerged and grown rapidly. Information Technology innovations have made the internet the fastest and most reliable means of sharing information (Lou et al., 2011). "Ubiquitous presence and impact on all business and technology aspects makes Internet command an undisputable place in our lives" (Yerpude & Singhal, 2017). The internet has now transitioned from a micro network to a macro network and has further spread rampantly to become a global network (Yerpude & Singhal, 2017). In the year 1999, Kevin Ashton an innovator and consumer sensor expert coined the phrase "Internet of Things" to describe the network connecting objects in the physical world to the Internet. The packets of information gets transmitted in an uninterrupted way over internet while billions of things are globally connected (Kopetz, 2011). Databases are used to store the data that is transmitted over the internet. Various business process models are utilized to facilitate the problem solving for the different businesses (Yerpude & Singhal, 2017). Steenstrup and Kutnick (2015) define IoT as "a network of dedicated

physical objects (things) that contain embedded technology to sense or interact with their internal state or the external environment". Rio and Banker (2014) define "IoT as connecting intelligent physical entities (sensors, devices, machines, assets, and products) to each other, to internet services and to applications".

The present research article is organized as follows. It starts off with an extensive review of literature on role of Customer Relationship Management in Automobile Industry, introduction to Social CRM, determinants of customer loyalty and factors which lead to Customer Satisfaction turning a customer into a Brand Ambassador that laid the foundation of the conceptual model and proposition of the study. Then the study presents the detailed methodology of the study including research design, sample characteristics, data collection methods and data analysis. Further, this article presents the analysis of data by using exploratory factor analysis (EFA) and two-stage structural equation modelling (SEM) and finally, this research article concludes with the discussion, conclusion and managerial implications and limitations of the study anticipating the changes of the future.

## **REVIEW OF LITERATURE, LIMITATIONS OF EXISTING LITERATURE**

### **Role of CRM in Automobile Industry**

For every firm Customer relationship Management is vital as they look at these long-term relationships with customers from the perspective of profit making. With strong competition between new and used cars there is a very different challenge for the automobile industries. Further through internet, review system, social media as an additional platform for customers of today have implausible information and hence it takes a lot of efforts for building relationship (Singhal et. al., 2016). CRM is not just important for the business but it making the personal bonding even stronger within people. Development of this type of relationship with the customer takes the business to new level of success. Once such a relation is developed, organization can easily identify the authentic requests of the customer and to figure out their expectation and that will help the organization to serve them as per their expectations (Dibeesh, 2016).

Traditionally there are three types of CRM. First, one being Operational CRM that refers to the products and services with which the organization takes care of its customers. The business processes covered include sales, service and marketing, Contact centers etc. Second one being the Collaborative CRM, which includes communication with customers and covers direct interactions encompassing feedback and issue reporting. The channels of interface could be web, emails, calls etc. Third and the most important one being Analytical CRM. This type addresses the analysis of customer data for a host of different purposes. In general, it is used to design and execute targeted marketing campaigns that optimize marketing effectiveness. Analytical CRM takes into account product and service decision making, pricing and new product development (StraightMarketing, 2010).

### **Social CRM**

A newer emerging form of CRM called the 'Social CRM' that is greatly influencing value perception and establishing trends that force organizations to pay more attention to their marketing strategies in the social media platform. Customers are increasingly taking to social media and forming opinions regarding unfamiliar brands. Their growing usage of social media is causing great influence on peers, as there are multiple opinions and positive as well as negative experiences, which are helping others in associating value with

brand/product/organization and making purchase decisions (Gupta & Brooks, 2013). The presence of online supporters being passively experienced influences brand evaluations and purchase decisions among prospective customers (Naylor, Lamberton, & West, 2012). The opportunities to seek, give, and pass opinions about products and services in online environment can lead to increase in customer engagement (Singhal, 2015). This co-created value serves as knowledge for existing and prospective customers leading to increase in buyer involvement and trust (Chu & Yoo jung, 2011).

Organizations still have to learn on how to deploy social media to reap maximum benefits, build brand, and establish brand loyalty (Investopedia, n.d.). A number of factors such as cost, time, and lack of senior management knowledge, unproven success metrics and perceived loss of control have been attributed to this unachieved objective. Hence, it is very necessary to understand what contributes to brand loyalty. The research study conducted by Zendesk placed consumers rank quality with 88% and customer service with 72% as the two biggest drivers of loyalty (Norton, 2012).

With a 34% impact on customer loyalty, we can infer that customer retention is driven by efficient and competitive customer service. The dealer or the contracted service centre enforces this in case of automotive industry which drive the CSI score for the automobile manufacturer.

### **India Customer Service Index Study (CSI)-Mass Market (2016)**

Customer Expectations of Convenience during Vehicle Service Rises Significantly in India. Vehicle owners in India increasingly seek speed and convenience when having their vehicle serviced, according to the JD Power Asia Pacific India Customer Service Index (CSI). The study, now in its 16th year, measures satisfaction among vehicle owners who visit an authorised dealership service centre for maintenance or repair work between the first 12 to 24 months of vehicle ownership. The study measures overall satisfaction in five factors viz, service quality; vehicle pick-up; service advisor; service facility; and service initiation. Overall customer satisfaction is measured on a 1,000-point scale, with a higher score indicating higher satisfaction.

The study reveals that vehicle owners increasingly consider faster turnaround in service, door-step service and alternate transportation arrangements post vehicle drop-off as essential to satisfaction. Satisfaction is significantly higher among vehicle owners whose dealership provides an alternate form of transportation while their vehicle is being serviced than among those who do not receive this service. Correspondingly, during the past three years, the gap in satisfaction between these two groups of customers has increased by 41 points. The expectation for this service continues to outpace the delivery of it from dealerships by nearly 29 per cent. A large population of customers, when asked about the cost of service have indicated that the cost is reasonable, as mentioned by JD Power studies. Price is just one out of multiple factors in determining whether customers' interests are fully met, or if they would return to the same service center for repeat service. Customers seek more the value, quality, proximity, assurance and the overall service experience rather than just the price point when choosing their service center.

Doorstep service for vehicle owners also contributes to higher satisfaction scores. Overall satisfaction is 43 points higher among owners whose vehicle is picked up and dropped off at their home or work by the dealership, as compared to those who take their vehicle to the dealership service centres themselves.

## Research Objectives

We discussed in the earlier section about the increased CSI due to the various value add services. These services more so point towards the convenience of getting the vehicle serviced. While doorstep service contributes to the highest percentage of customer satisfaction, on-road assistance is a service product in which the vehicle can be serviced on road along with minor repairs. Profoundly it becomes extremely vital when the vehicle is off road and can't be driven further due to an emergency breakdown. On-Road or Road-side assistance is a service product wherein the dealership has a mobile workshop to cater to the normal service and emergency service for the off road vehicles to come on-road. It is one of the most wanted and appreciated product.

The present research study addresses three critical issues: First, it identifies the important parameters contributing to an efficient On-road assistance provided by the manufacturer. Second, it examines the influence of the parameters on the Brand Perception. Third, it evaluates the impact of a Service product such as an On-Road assistance on the Brand Loyalty.

## Proposed Conceptual Model and Proposition Formulation

Based on the literature review and proposed model (Figure 1), it can be concluded that brand loyalty comprises CSI of customer satisfaction. It is also hypothesized that positive customer satisfaction will positively affect brand loyalty.

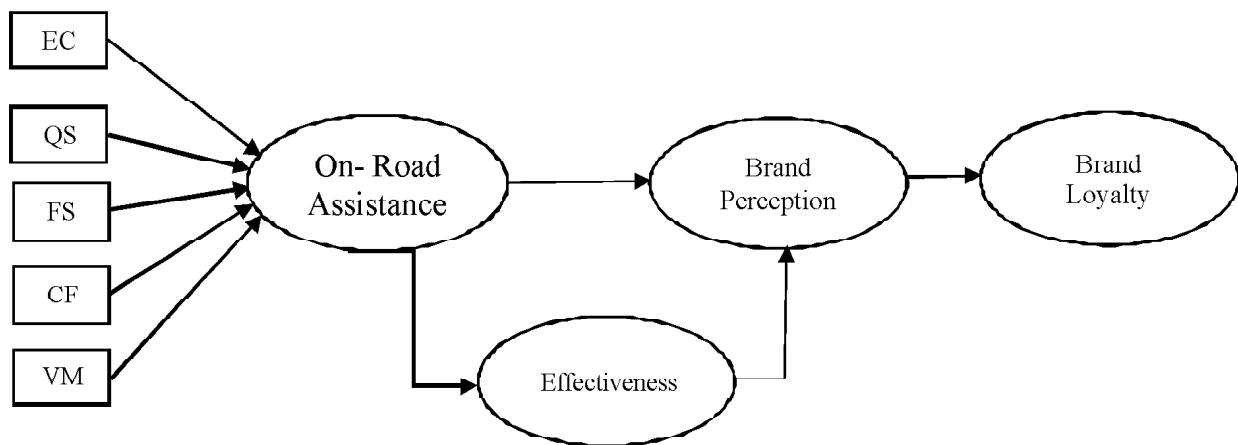


Figure 1: Conceptual Model for the Study (Authors' own.)

Notes: EC—Extent of Coverage; QS—Quality of Service; FS—Feeling of Safety; CF—Customer Focus; and VM—Value for Money

To establish the important parameters of an on-road assistance provided by the manufacturer and its impact on Brand Perception and Brand Loyalty, a data analysis was conducted basis the responses gathered from customers using different brand of vehicles.

**Rationale of the study:** Markets are disrupting almost daily creating newer opportunities breaking the entry barriers for entrepreneurs to enjoy their market shares. Customer service has turned out to be

vital not just to business but to the growth of any organization which is paralyzed by sluggish decision making and afraid of change management. During this research, we clarify on three fronts. One the need of a service product such as on-road assistance vehicle, secondly the critical parameters defining the efficiency of the whole system that gives the output in terms of customer satisfaction and finally the impact of customer satisfaction on brand loyalty. Literature review has revealed certain research gaps in this area with a limited spread of IT in this domain throwing abundant opportunities to tap. Therefore the researchers have taken up the study to bridge the gap and add this research to the body of knowledge for the organizations to get benefitted.

## **METHODOLOGY OF THE STUDY**

### **Sample Characteristics and Instrument Development**

**Survey Questionnaire Method:** To test the various understandings developed on the basis of the conceptual model, data were collected from 115 respondents through a structured questionnaire developed on the basis of previous literature. The first part of the questionnaire is intended to collect data related to the vehicle ownership, make and brand (reported in Table 1). The second part of the questionnaire intended to measure various constructs that are related to various components, namely, Extent of Coverage of On-road assistance, Availability of Spare Parts, Perceptions on Feeling of Safety, Customer Focus and Value for Money, and finally on Brand Loyalty due to Customer Satisfaction. Post, which all the statements of the survey were pretested on a sample of 20 vehicle owners of different brands to test the reliability and validity of the statements.

**Sampling Technique:** “Deliberate Sampling” technique, also known as purposive sampling, has been used by the researchers to choose the sample for rolling out the questionnaire. This sampling technique involves deliberate or purposive selection of respondents constituting the sample and representing the universe.

**Threats to the right representation (Bias):** There are different types of errors that are introduced and that have to be eradicated before conducting the statistical tests, such as sampling error, non-response error and coverage error. The researchers did not employ an interviewer for the data collection purpose. This encouraged an unbiased response from the respondents, as they were not led to any conclusions on their responses. The respondents were approached at their convenient times and sufficient time was given for them to respond to the questionnaire, which safeguarded the researchers against a hassled retort. Further, as per the deliberate sampling technique only those respondents were approached who were qualified to respond as per the concept mapping (i.e. owner of a vehicle who had a vehicle service experience) and who were willing to respond closing the doubts of rating scale errors to a large extent.

**Reliability Testing:** Reliability testing is carried out to assess the ability of an instrument to create reproducible results. A faster and comparable method to calculate a questionnaire’s reliability is to deploy Cronbach’s Alpha analysis. Researchers have tested the questionnaire for reliability by analyzing the Cronbach’s Alpha values. The calculated value of Cronbach’s Alpha is 0.81, thereby indicating a higher level of reliability. We have also tested for Split-Half Correlation, and Split-Half with Spearman-Brown Adjustment. The values of 0.76 & 0.86 observed respectively did further reinforce our findings on reliability.

**Data Analysis:** The data gathered through the self-administered survey was coded in SPSS 22 and AMOS 21 for further analysis. Most of the statements were cited from studies in the customer service domain therefore we conducted Exploratory Factor Analysis (EFA). The objective of EFA is to understand the underlying factors’ structure without imposing any constraint/limitation on the outcome (Child, 1990). The Exploratory Factor Analysis was deployed with Principal Component Method with Varimax rotation for extraction of factors. P-Values were calculated for the individual parameters to answer the question of relevancy as the customer. Post this a two-stage SEM was conducted to validate the model created. The first stage-involved validation of the measurement model with the help of confirmatory factor analysis (CFA) and the second stage examined the relationship between various variables considered in the study.

**Exploratory Factor Analysis:** Prior to execution of Exploratory Factor Analysis, it is quite important to test the sampling adequacy of the data. The results reported that Kaiser–Meyer–Olkin’s (KMO) value was 0.740 and even Barlett’s test was observed significant at 0.000 level ( $p < 0.000$ ). These calculated values are observed to be higher than the recommended minimum value of 0.5 by Hair et al. (2013) and 0.6 by Tabachnick and Fidell (2013). The factors were extracted on the basis of eigenvalue more than 1. The factors identified in the study are the factors which contribute to customer experience of service products. Two of the factors were non-significant as their reliability and factor loadings were below the minimum cut-off value of 0.6.

**Sign Test/ Paired Sample T-Test:** In this case, we use Median, to conduct the sign test. Sign test involves finding out the differences between the recorded value and median (Hogg & Craig, 1995). The computed p value is computed for each of the parameters and multiplied by two since we are checking for a two tailed test. While we computed the p values for the pre-defined statements, the results revealed that Extent of coverage, Availability of Spare Parts and Perception of Safe Brand scored ahead of the other parameters tested. The findings are mentioned in the table 1:

**Table 1**  
**Statistical analysis In SPSS (Authors’ own)**

<i>SrNo</i>	<i>Parameter</i>	<i>Median</i>	<i>Standard Deviation</i>	<i>Sample Size</i>	<i>Confidence Level</i>	<i>p-Value</i>
1	Extent of coverage of the On-road assistance vehicle	2	0.9498	115	95%	0.000085
2	Availability of Spare Parts	1	1.5472	115	95%	0.0000
3	Perception: Safe Brand	1	0.8569	115	95%	0.0000
4	Perception: Customer Focused	2	0.82505	115	95%	0.2892
5	Perception: Value of Money	2	0.8119	115	95%	0.07692

**Measurement Model Analysis:** As the first stage, Confirmatory Factor Analysis (CFA) is used to test the measurement model and later Structural Equation Modelling analysis to verify unidimensionality. The relationships as defined in the structural model are analyzed in this step. The model is tested by examining the path coefficients and their significance. The relationships in the proposed model are well supported by the overall model fit indices. The  $\chi^2/df$  value of 3 meets the recommended value of less than equal to 3 (Carmines & McIver, 1981). The goodness of fit is observed to be 0.9 as against a

recommended value of greater than or equal to 0.9. Figure depicts the path diagram with the estimated standardized path coefficients. From the output path diagram as seen in fig 2, it is evident that all the path coefficients are significant at the level of 0.001.

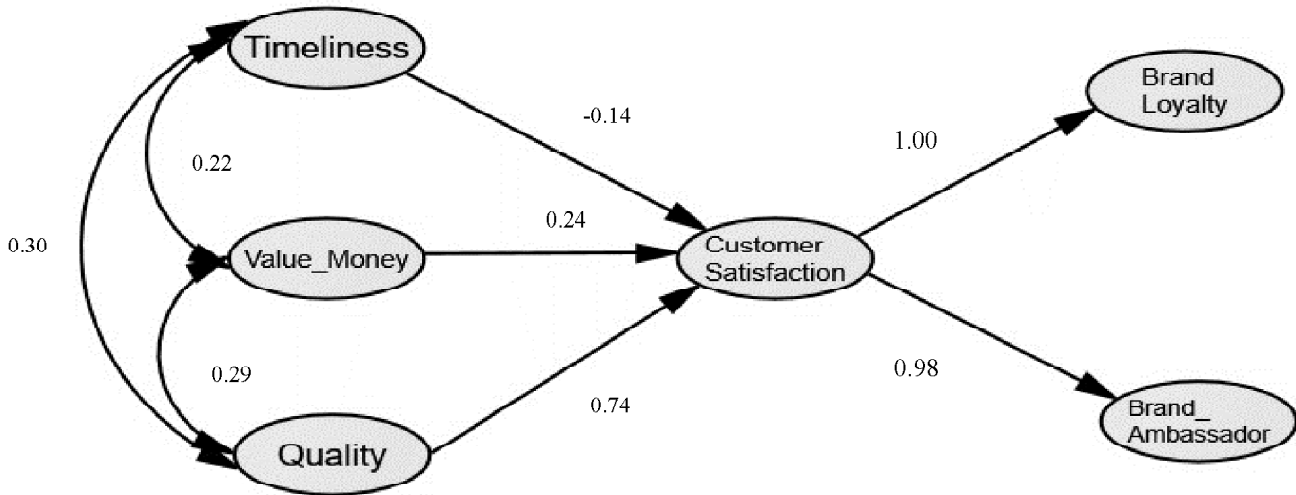


Figure 2: Output Path Diagram (Authors' own based on AMOS output)

**Analysis of Structural Model:** In the second stage of SEM analysis, casual path analysis was conducted to test the propositions in the study. From the analysis of modification indices, it can be observed that most of the pre-defined statements are accepted except the fact that the direct relationship between value for money and customer satisfaction is weak. Although, Hair et al. (2013) proposed that a value of model fit indices between 0.5 and 0.8 is considerably good for social science studies. In this case, we observed the good of fitness to be 0.9, which ensures that the model fits well with the data. The findings of this study reported that the direct relationship between customer satisfaction and brand loyalty is influenced majorly by Quality of Service and Timeliness. Further, the study reported that timeliness and quality of service which is received by the customer is framed from coverage of the On-road assistance vehicle and the availability of spare parts in the vehicle along with a high customer focus expectation from the brand. The complete model explained 62 per cent of variance.

## DISCUSSION OF THE STUDY

The main objective of this article was to understand the role of Cost, quality and timelines in customer satisfaction and further the impact of customer satisfaction on Brand Loyalty. The findings of this study reported empirical evidence to support the proposed model reported in Figure 1. Most of the propositions were supported and the overall prediction of the model is 62 per cent. The findings of this study suggested that Customer Satisfaction is a strong predictor of purchase intention while customer satisfaction can be achieved by the quality to services offered to the customers. The results of the study provided empirical evidence that purchase intention is strongly influenced by customer satisfaction and the quality of service given by the dealership with service products such a road side assistance vehicle. Similar findings were revealed by American express survey in 2011, for the parameters such as extent of coverage and availability



of parts. All the attributes of service quality have demonstrated a positive relationship with customer loyalty having mediating effect of customer satisfaction (Dubey & Srivastava, 2016). Our study reinforces this statement and completely concurs with the same.

**IoT enabled Customer Service:** Parameters to define the effectiveness of on-road assistance Vehicle are derived from the variables which are found significant in the above study. Following are some interesting trends that highlight what customers expect in service in terms of repair.

**Location** (Arora, 2014): Among the top five reasons as per the India CSI study (India Customer Service Index Study (CSI)-Mass Market, 2016), convenience of location is voted as the key reason for customer satisfaction regularly. Apart from this there is one noteworthy issue of the vehicle owners, i.e. is proximity of service workshops in India.

**Service Quality – Focus on the Customer** (Arora, 2014): In the recent years the Service quality of the workshops is steadily improving, which is the greatest contributor to customer satisfaction in India. In 2014, 95 percent of owners expressed that the work on their vehicle was done correctly the first time. This is possible only because of the processes and standards, which need to be improvised continually to match the customer expectations, which keep on changing as per time and geography in India.

**Countrywide Connected Brand Network** (Meister, 2016): Now days the vehicle owners do not believe in maintaining their vehicles with the same dealer. More so, the owners would want to walk in any recognized dealership and get their vehicle serviced retrieving their vehicle history and expect their personal preferences.

**Reliability of Spare Parts** (Arora, 2014): In the year 2009, 70% of the owners replaced at least one spare part in their old vehicles, as against 54 % in 2014. This is as per the J.D. Power survey findings. This dip was not because of parts not being available but because of the improving quality and reliability of spare parts. Reliability does not only mean in terms of quality of spare parts but also its availability at the point of consumption. This fundamentally calls for a demand forecasting, proper order, and inventory management of spare parts in the on-road assistance vehicle.

**Time to Reach** (DeGraff, 2013): The trend today, which is followed by most of the companies, is to contract their roadside assistance program to third party service providers. Mercedes-Benz, for example, has 99% of its calls answered by dealer-trained technicians.

**Role of IoT in helping the effectiveness of an on road assistance vehicle:** Information Technology (IT) is influential in creating the niche and gives the organization a competitive edge to compete and improve its position amongst the competitors. (Dehning & Stratopoulos, 2003). IT has provided the necessary impetus to the changes, which took place in the processes in an organization helping connect the customer and the employee (Strebinger & Traiblmaier, 2006). Organizations with the help of IT applications are creating niche IT capabilities and competencies (Bhatt & Grover, 2005). Future business opportunities get created with the IT utilities being provided to the customers (Singhal, 2014).

IT plays a vital role in automatic generation, collection, storing and analysis of the data that's gathered from the vehicle. Let us visualize each of the effectiveness parameter along with the IT solution, which can be deployed to enable and enhance the parameter and further better the customer service.

The location/ coverage of the on-road assistance vehicle predominantly was decided basis the population of the vehicles sold by the auto manufacturer. This provided a rough estimate of vehicle population and age of vehicles. But, this method failed to report some very vital facets such as driving conditions or the way the vehicle is driven by the driver etc. These facets have a direct impact on the condition of the vehicle and the need of service for the vehicle. The requirement of service differs between vehicles being driven in different driving conditions. An auto manufacturer cannot ignore these facts and measure all the vehicles with the same yardstick. These aspects are covered comprehensively with the implementation of internet of things landscape called Telematics. Telematics, in a broad sense, is any integrated use of telecommunications with information and communications technology. It is the technology of sending, receiving and storing information relating to remote objects—like vehicles—via telecommunication devices (Papp, 2017).

Telematics is a method of monitoring a vehicle. By combining a GPS system with on-board diagnostics it's possible to record—and map—exactly where a car is and how fast it's traveling, and cross reference that with how a car is behaving internally. This data is transmitted over the internet and stored in databases. This data is used to build early warning systems, by maintaining thresholds for each of the parameters. The exact location helps the dealership to know where and how many vehicles are plying. The data gathered from the Telematics devices helps give all the prior information about the vehicle condition. The essential components of a Telematics system are:

- Telematics Control Unit
- Service/Content Provider
- Telematics Operation Centre
- Service provider call centre

The Telematics service call center uses the vehicle Telematics information to inform the customers about the problem and the nearest on-road assistance vehicle available, averting a larger problem for the vehicle and the owner (Joshi et al., 2009). The environment in which the vehicles are operating and the vehicle condition serves to be most important parameters determining the location and route of the on-road assistance vehicle (Van et al., 1997).

With the Telematics devices on the vehicles, there are two fundamental issues related to the customer expectation that can be addressed. As discussed, most of the manufacturers deploy third party service providers for their on-road assistance program. In such a multi-partite landscape, co-ordination and timely information takes the paramount important position. Since the digital business focuses on customer first principle, it becomes extremely significant to possess the real time information of the customer (Yerpude & Singhal, 2017).

The effective use of Telematics information can help reduce the time to reach substantially. As discussed, most of the manufacturers deploy third party service providers for their on-road assistance program. In such a multi-partite landscape, co-ordination and timely information takes the paramount important position. Since the digital business focuses on customer first principle, it becomes extremely significant to possess the real time information of the customer (Yerpude & Singhal, 2017). Real time information stream aids all the relevant stakeholders to take the customer experience to the next level improving the Brand Network.

For addressing the next effectiveness parameter i.e. service quality, we consider the pre-requisites for the same. Service quality is the end result of a mix of parameters such as skilled labor, availability of right diagnostic tools and spare parts along with a rugged service standard operating procedure. Apart from the skilled labor parameter, Internet of things can come to rescue for the rest. On the contrary, the vehicle fault codes are retrieved even before the vehicle reports for a service, with the help of the Telematics device fitted on the vehicle (Howard, 2015). The device is capable of generating these codes basis the different readings gathered for the critical parameters as against their thresholds. This helps in diagnosing the problem accurately. Further, when the vehicle is attended for repairs in the on-road assistance vehicle, the sensors affixed on the diagnostic tools send the information to a central service system managed by the dealer. The function of the central service system is to ensure that on basis the diagnostic data, it should automatically suggest the right service repair jobs, spares and the standard operating procedure for the same. There is a significant amount of standardization achieved in customer service management ensuring a similar experience for the customer during every visit. Such initiatives help in bettering of the CSI scores for the manufacturers.

Reliability of spare part has two vital aspects. One is concerned with the functioning of the spare part as per the intended purpose and second related to the consistent availability of spare part. Information technology plays a vital role in manufacturing to ensure that the parts are manufactured with precision under strict tolerance limits. Machines such as CNC i.e. computer numerically controlled which automates the machine tools by means of computers executing pre-programmed sequence of commands are used to manufacture automobile spare parts. This ensures that the parts are almost 100% interchangeable and functionally reliable to be used in any vehicle of similar make and model (Ryan, n.d.). Reliability in terms of the spare parts being consistently available in the right quantity at the right time and right place is a function of a Demand Planning and Forecasting under the broader umbrella of Supply Chain Management. Real time data collected automatically from the deployed IoT landscape to monitor the spare part consumption increases the accuracy of forecast multifold (Yerpude & Singhal, 2017). Globally 3.5 billion users using internet in a single year at an average speed of 6.1Mbps, it becomes one of the most significant media of data exchange on real time basis (Internet usage worldwide, 2017). To gain and sustain the leadership position in the market, accurate forecast of parts proves to be the game changer for the dealerships as well as the manufacturers. Research literature further reveals a growth in revenue and reduction in costs for the organizations who have adopted IoT data i.e. real time data for demand forecasting. The improvement in the serviceability because of precise and accurate forecasts helps dealership and manufacturer achieve higher customer satisfaction.

## CONCLUSIONS

Customer service experiences have an impact on consumer's impression of a company's brand. Consumers in India (76%), Italy (56%) and Mexico (55%) are significantly more likely to say that a good customer service experience has the most impact on their impression of a company's brand. Over half of consumers in each market would try a new brand or company in order to get better customer service (American Express Survey, 2011). All the attributes of service quality have demonstrated a positive relationship with customer loyalty having mediating effect of customer satisfaction in a study in retail banking sector in Bangladesh (Dubey & Srivastava, 2016). According to Hoisington and Naumann (2003), "customers use

five major categories to value a company or organization's performance: (tangible) product quality, service quality, quality of relationship between customer and supplier, image, and price perception. For a tangible product, quality might include features, usability, or compatibility. For a service offering, this would include the various dimensions of the service being provided." Our research study has also revealed similar findings and strongly propagates customer satisfaction as the driver of Brand loyalty for a customer. This is to not only have a purchase intention but also influence others and become a Brand Ambassador. The new mantra for today's automobile companies selling On-road assistance product is to "Be there for your customer at the right time"

**Managerial Implications:** The study contributes to the theoretical constructs of customer satisfaction and brand loyalty and reaches further to have some managerial implications too. This article not only emphasizes the need for an on-road assistance vehicle but determines the various constructs and factors which influence customer satisfaction. Technology disruptions are changing the market scenario rapidly and hence the physical aspects of implementing the IoT landscape to take care of automation and tap the richest source i.e. data should be on the top priority of any organization. Focus on customer service is the key to influence the purchases and turn the buyers into repeat buyers and brand ambassador. Technology support to this very important business process if ensured by organization, they would reap handsome rewards. There are quite a few business cases, which depict how the IoT deployment has increased the contribution towards the top line and simultaneously rescued the bottom line.

**Limitations/ Future Research, if any Customer Value proposition:** In case of an organization policy building and decision making the customer value play a vital role in determining the same (Singhal, 2016). Customer Value for any organization is measured in terms of final functionalities, end product specifications, quality and customer satisfaction (Parasuraman & Grewal, 2000). If the end product is of high end quality that supports the intended purpose and is easy to operate, the organization can create successful customer value (Singh & Singhal, 2015). Without customer value the organization would be crippled in terms of operations, profits etc. (Singhal, 2016). There are lots of changes that have happened in the automobile domain especially in the vehicle sale domain in the past few decades, which has revolutionized the following:

1. Connect through multiple devices
2. Personal touch and trusted advisory
3. Brand Network

The above framework will enable the dealerships and OEM's use the dealer data, customer and vehicle data for the benefit of customer. Before concluding the study the researchers would wish to mention that in this age of technological disruption things are changing rapidly. Almost on a daily basis we are exposed to a new technological disruption such as Machine learning, Artificial Intelligence. But literature review suggests that IoT has cemented its position in the automation domain and spreading at a brisk pace in all the directions. Early entrants in the IoT implementations have been rewarded quite handsomely. It would be a wise call for the companies to invest and implement IoT landscape and be future ready.

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