Creating Green Organizations through CRM Solution

Evaluating Customer Carbon Footprint in CRM

Charudatta Thute

Abstract: Companies are made of internal employees who are responsible for day to day operations and Customers who provide revenue to the company. At the same time partners ensure that operations are carried in a cost-effective manner. CRM (Customer relationship management) solution ensures management of customer and Partner centric operations effectively end to end. Today worldwide, every organization is willing to go green and it's important their effort towards customer win/retention and partner management is green too. Is it feasible for companies to evaluate, if its customer/partner centric efforts are green, through existing CRM solutions without any significant investment in technology? The paper gives an innovative approach for organizations to measure and effectively track efforts involved in winning and retaining customer and evaluating 'Carbon Footprint' (The total set of greenhouse gas emissions caused directly and indirectly by an individual, organisation) at each effort level with customer and Partner. These efforts may be travel involved for sales, cold calls, customer care calls, brochures/prospectus sent or mail communication done. With this approach, companies can collect auditable data on core environmental performance and carbon footprint for their customers and Partners. Based on this information, organizations can monitor their carbon footprint and institute business practices that are both environmentally and economically sustainable to retain and win the customers. It will set up a practice within organization that customers are won through greener means. The purpose of paper is to provide necessary thought leadership for greener customer efforts, incur savings in long term, improve bottom lines and help companies be an excellent corporate citizen.

Keywords: CRM Solution, Carbon Footprint, emission, Green Efforts, Customer

1. Preface

Customer relationship management (CRM) is a model for managing company's interactions with current and future customers and partners. It involves tracking and recording every stage in the process for each prospective client, from initial contact to final disposition.CRM software is also used to identify and reward loyal customers and as a mean to ensure up sell and cross sell of the products and services to potential as well as existing customers. The new customers are won through lot of efforts and many different ways are adopted to retain existing customers. The effort to win a new customer involves calling customer, regular travel, sending company prospectus or brochures, proposal document, mailers whereas when the customer is won the retention of customer also involves multiple level of interactions with the customer. These interactions can be checking customer satisfaction level through surveys, sending regular mailers, calls to keep updated about new product/services, travel to meet regularly. Similarly while interacting with Partners the efforts are taken in terms of asking for their quotations, Brochures, invoicing and order confirmation.

In winning a new customer sales/presales team and for customer retention back end or customer support services team is regularly involved. For Partner management purchasing or procurement team within an organization is involved.CRM solutions covers customer management through lead, opportunity and service request management;

but how green are the efforts taken to win or retain the customers are not tracked through any of the CRM solution. If these efforts are measured and evaluated on the basis of green parameters the company can in a true sense can be called a green company. This is because many companies focus only on internal employees and efforts to go green whereas these focus on green way of doing business with external entities (Customers/Partners). The solution developed within CRM to track measure and evaluate customer/Partner win, retention on a green scale provides in detail the approach towards this. The solution is easily extendible to track carbon footprint for the internal employees too. The activities covered within scope of solution are correspondence, travel, calls and Partner centric operations. A Siebel CRM solution 8.2 version is used for solution development due to expertise in the solution and flexibility which it provides to track customer centric operations. A PoC (proof of concept) is built to evaluate the concept. 'Accounts' entity is used to track the companies and 'Contacts' entity is used to track the individuals with whom business is done. 'Accounts' entity is also used to track the Partners with whom business interact for sourcing the products needed internally. The 'Activity' entity is associated with each account (Company/Partner), contact (individual) to track interactions done with an Account or Contact. Siebel CRM 'Correspondence' entity is used to track each literature/content sent to customer. The literature is tracked as a hard copy or a soft copy. Accordingly as the literature is dispatched to customers (Account/Contact) an activity of type correspondence is created to track correspondence as a hard copy or a soft copy. It's assumed that inbound as well as outbound calls are logged in CRM solution automatically through Siebel CTI (Customer telephony integration) and its duration is measured. The solution has provision to manually capture details of an employee travel for the customer meetings and discussions. Travel miles, mode of transportation and each of the activity (correspondence/call etc) is tracked. Appropriate carbon emission matrix is built based on various parameters within the solution to automatically track carbon footprint associated for each activity. It provides an approximation for carbon footprint, C02e (the unit of measurement for carbon dioxide and other greenhouse gases emitted) evaluation. The emission is directly linked with tree plantation to ensure that carbon emissions done are offset appropriately by companies. Companies can evaluate green efforts taken for each customer. A separate view is built in the system as 'Carbulator' to track and measure the carbon footprint of each customer/Partner.

2 Carbon Emission and Offset Parameters

As mentioned above different carbon emission calculation matrix based on various parameters is build in the system to fetch appropriate values of the carbon with each activity. These matrices are

- Transport carbon Matrix
- Paper carbon Emission
- Tree plantation carbon offset matrix
- Call carbon matrix
- Enviro Zone Matrix

2.1. Transport Carbon Matrix

The transport carbon matrix considers bus, car, bike and air as modes of transportation.

Table 1: Transport carbon emission Matrix

Sr.No	Mode	Kg Co2/Km
1	Air	9.100
2	Bus	0.710
3	Car	0.167
4	Bike	0.055

The figures for Kg Co2/km are based on the calculation with logic as,

1 liter of diesel weighs 835 grammes. Diesel consist for 86,2% of carbon, or 720 grammes of carbon per liter diesel. In order to combust this carbon to CO2, 1920 grammes of oxygen is needed. The sum is then 720 + 1920 = 2640 grammes of CO2/liter diesel. Similarly 1 liter of petrol weighs 750 grammes. Petrol consists for 87% of carbon, or 652 grammes of carbon per liter of petrol. In order to combust this carbon to CO2, 1740 grammes of oxygen is needed. The sum is then 652 + 1740 = 2392 grammes of CO2/liter of petrol.[2] (Since C02 has atomic weight of 44, C has 12 and O2

needs to be 32 i.e. 2.67 times of C). Hence an average of 2500 grammes of Co2/liter of fuel used (petrol/diesel any) was considered.

For Bus a travel estimate of 3.5 km/liter of fuel was taken and hence 2.5 kgCo2/liter x 3.5 km/liter equals 0.710 kg Co2/km. Similarly for car an average of 15 km/liter, for bike an average of 45 km/liter is considered. For Air travel Air Bus A320/A321 and Boeing 737-400 series is considered with a passenger capacity of 150 and above. The average cruising speed is 825 km/hr and fuel consumption of 3000 liter/hr.[3] Hence fuel consumption is 3.63 liter/km and after multiplication with 2.5 kg Co2/liter approximates 9.1 kg Co2/km.

2.2 Paper carbon emission parameter

A single well grown tree accounts for approximately 8,000 pieces of A4 paper. For each tonne of paper produced, around 1.36 tonnes of CO2 emissions are released into the atmosphere. With around 40,000 sheets of A4 paper per tonne produced the average of 0.034 kg Co2 emission (1.36/40) is considered for a single A4 paper.[4]

Table 2: Paper based carbon emission

Sr.No	Mode	Kg Co2/per unit
1	Paper (A4)	0.034

2.3 Call carbon emission factor

The analysis, performed and approved by environmental organization 'Carbon trust', calculated the greenhouse gas emissions embedded throughout the lifecycle of O_2 company voice and data services. The analysis revealed that the carbon footprint of making a one minute voice call was 3.6g CO2e (the unit of measurement for carbon dioxide and other greenhouse gases emitted).[6] This factor (3.6g/min CO2e) is assumed for the carbon footprint calculation across the Siebel CRM solution to map the carbon emissions through call based activities done for the customers.

2. 4 Tree equivalent for Carbon offset.

Trees absorb Co2 and release oxygen in air. An approach is provided in solution to ensure that carbon footprint built by the customer is offset appropriately. An equivalent of trees for the amount of carbon released is directly associated per customer/partner through automation built in system. The companies can decide themselves whether to offset it themselves or through customer/partner by planting appropriate number of trees. Tree offset calculation is assumed and based on a tree planted in the humid tropics absorbing on an average 50 pounds (#23kg) of carbon dioxide annually over 40 years. Each tree will absorb 1 ton of CO2 over its lifetime; but as trees grow, they compete for resources and some may die or be destroyed - not all will achieve their full carbon sequestration potential. This calculator assumes that 5 trees should be planted to ensure that at least one lives to 40 years or that their combined appropriation equals 1 ton.[5]

2.5 Enviro Zone

A new indicator called as 'Enviro-Zone' is introduced in the solution for carbon footprint offset. Based on the required number of trees to be planted as mentioned in section 2.4 the Enviro-Zone for each customer is calculated. Enviro-Zone clearly signifies if the customer related carbon footprint is truly offset or companies still continue to serve the customer even though his carbon footprint is high. It acts as an indicator to ensure that the carbon footprint is offset and companies remain as green companies in a true sense. The below formula provides the approach for calculation,

Enviro-Zone = (Trees Planted/No. of trees required) * 100

Based on percentage for Enviro-zone after calculation a color indicator is given,

Table 3: Enviro-Zone Indicator

Indicator	Enviro-Zone %
Green	>=100
Yellow	>=50
Red	<50

3. Partners Carbon Evaluation

Partners are classified as 'Accounts' and with type as 'Third Party'. The fields are provided in Accounts entity to evaluate Partner on their green initiatives. The evaluation is based on three factors and customers should rate each Partner on a scale of 1-10 for each criteria associated with factor. This way partners can be evaluated and ones who focus

on green initiatives will be selected to do business.

The factors and associated criteria are as below;

- Operations
  - Design
  - Procurement
  - Packaging
  - Manufacturing Process
  - Electricity Consumption
  - Lighting
- Environment Practices
  - Waste reduction
  - Recycle
  - Water Treatment
  - Reproduce/Reuse
- Eco friendly practices

Based on the count and assessment on these parameters the total count is taken on each of the factor. Each Partner is evaluated based on their respective scoring. With the scores the green index of each of the Partner is managed. The ratings for Partner are put by the procurement team. Although there may be other Partner management systems within an organization, but usage of CRM solution is assumed in this approach for tracking third party green efforts as 'Account' entity can easily accommodate Partner related features needed for Green efforts measurement.

4. Paper consumption data migration approach

The paper consumed by each of the customer or partner when doing transactions should be tracked. The Siebel EIM (enterprise integration method) is used to track the paper consumption by migrating paper consumption done for each of the customer from the printer logs. Each of the content to be sent to the customer (prospectus/brochures/information) is saved in the application with a unique content Id. When the content is printed the content Id associated with each of the print record is retrieved from the printer server logs. As we are generating a correspondence activity with each of the account (as mentioned before) the count of the paper can be retrieved. The content Id associated with the customer in Siebel CRM application matches with the content id from the printer logs and data migration is done to associate appropriate number of pages with each of the account on the same date. The print log details data are sorted in a staging table called as PRINT_LOG_STG table where file name, no. of pages, date of print and content Id and login details are kept. This information is taken from print log server. The content Id /name which come from Siebel CRM is matched against the correspondence activity for the content id on the same date i.e. against whom the file is printed. Row id are captured here from the attached file content id for finding the account or contact details and stored in from PRINT_LOG_STG table.Then by running the batch job using configuration (print_innw.ifb) it will add the total number of pages to Siebel value. Customers as accounts are marked as 'A' and as Contacts as 'C'.If print for same content Id is taken for multiple customers then again content Id associated with customers in Siebel CRM application (for whom print was given) is matched with the content id from the printer logs and associated to each customer but this time based on the timings when the 'correspondence' activity was created and print was taken. When the activity created in Siebel CRM and print timing from server log matches for each customer (with minimal variation) then the pages are associated with respective customer. If the print of same content is given same time for all customers then the migration logic associates the print logs randomly. The figure below gives a representation of data migrated.

FILE_NAME	NO_OF_PAGES	PRINT_DATE	STG_ROW_ID	
amita_1-A0XK.pdf	9	12-FEB-13	1-A0XK	C
PANDA_1-7F4-1.pdf	9	12-FEB-13	1-7F4-1	C
RELEASE_1-U0DE.pdf	9	12-FEB-13	1-U0DE	C
nihar_1-1NB-44.pdf	9	12-FEB-13	1-1NB-44	C
ashsih_1-1NB-44.pdf	9	17-FEB-13	1-1NB-44	C
fujitsu_1-86Y3.txt	9	22-FEB-13	1-86Y3	A
FCI_1-3EXK.pdf	9	10-FEB-13	1-3EXK	A
FCI_1-15Q-2.pdf	9	10-FEB-13	1-15Q-2	A
My_SalarySlip.pdf	6	10-FEB-13	SalarySlip	E
Investment.doc	8	10-FEB-13	Investment	E

Figure 1: Representation of printer data

5. Measuring Carbon Footprint automatically against customers

An activity is created against each customer providing readings of the carbon emissions done. The travel activity done for customer is manually entered by sales representative by

providing distance and mode of transportation used. The correspondence activity is auto created in system when company representative associates an appropriate correspondence done against customer with details like soft copy, hard copy. Every content has number of pages associated and they get directly linked against customer in correspondence activity. These pages against each correspondence are tallied with actual number of paper prints through data migration from print server logs taken and the exact paper count is associated against the customer/partner. This is needed as sometimes a content sent can have many pages but only few of them which are relevant might be sent to the customer. The calls done to the customer for business purpose through the call center is tracked through creation of 'Outbound activity' in CRM solution. The duration of the call is also calculated by taking the difference between call start time and call end time. Based on the duration of the call the appropriate carbon emission is associated directly against the customer/partner. The automated Siebel workflow calculates the carbon footprint against each of these activities. The combined carbon footprint of account/partner is shown by taking a total of individual carbon emissions done from each of the activities. The appropriate amount of tress to be planted against the total carbon footprint is displayed in the field 'No. of trees required'. This is based on the logic to measure trees for carbon offset. As per the carbon emission and trees required for carbon offset, the Enviro-zone for particular customer/partner is displayed. The system also captures the exact number of trees planted for each customer and based on this, the Enviro-zone color changes appropriately as displayed in Enviro-zone matrix. This ensures that the entire process for carbon footprint measurement, evaluation and tracking is automated with CRM solution by building a robust matrix and automations.

6. Conclusion

This innovative approach is first of its kind inbuilt within CRM solution and a single source to measure and evaluate customer centric emissions. It ensures that the company is going green towards customer centric efforts in realistic ways. The winning of customers and retaining them through greener means signifies that companies are socially responsible corporate. More over through this approach companies leverage their existing CRM solutions without any significant investment in new technology. The parameters taken for evaluation are based on globally accepted and can be changed if required. Currently for the customer centric carbon footprint evaluation the areas considered were Travel, Paper consumption and Interactions. Some other factors if required by the companies to track the customer footprints can be easily accommodated within the CRM solution as it provides end to end solutions for all the customer centric efforts and is easily extendible to accommodate related customer efforts. Companies can collect auditable data on core environmental performance and carbon footprint of their customers and Partners. Based on this information, organizations can monitor their carbon footprint and institute business practices that are both environmentally and economically sustainable to retain and win the customers. It will set up a practice within organization that customers are won through greener means. Companies can contribute to the resolution of global environmental challenges through ICT (information communication and technology), while at the same time reducing the groups own environmental footprint. Governments are thinking to impose carbon related taxations on the organizations and this approach can ensure that companies take a proactive approach towards reducing carbon footprint not only from its operations but also from customer centric efforts. Customers today are willing to do business with who have their green policy in place and by this approach companies can ensure customer delight by tracking customer centric carbon footprint and going an extra mile towards it. Approximately 7.8 GtCO2e (Giga tonnes of CO2 equivalent) emissions can be reduced by

2020 through proper ICT deployment; which would amount to approximately $946.5 billion in cost savings and through this approach companies are saving some part of this emission.[7] Hence the solution ensures that companies contribute towards reducing global warming through an innovative approach by leveraging existing CRM solution with no significant investment in any technology. Customers are won/retained through greener ways and companies can boast to be a really green organization.

Reference

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