Cu Customer Relationship Management
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Lecture – 23
Social CRM (Contd.)

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Hello everybody. Welcome to the Swayam NPTEL course on Customer Relationship Management this is Doctor Swagato Chatterjee from VGSOM, IIT Kharagpur, who is taking this course for you.

We are discussing Social CRM. Until now we have discussed, why social CRM? What are the benefits? What are the challenges? What are the overall strategies that you can do? You can do marketing, sales, customer management, probably innovation management, customer experience management and lots of stuff using social CRM.

And I have also talked about multiple tools, how you can use Facebook, Twitter, YouTube and various other social media tools to create customers ─ to do the operational strategies of this particular customer relationship management and the last part we were discussing about customer analytics. So, I will come to that.

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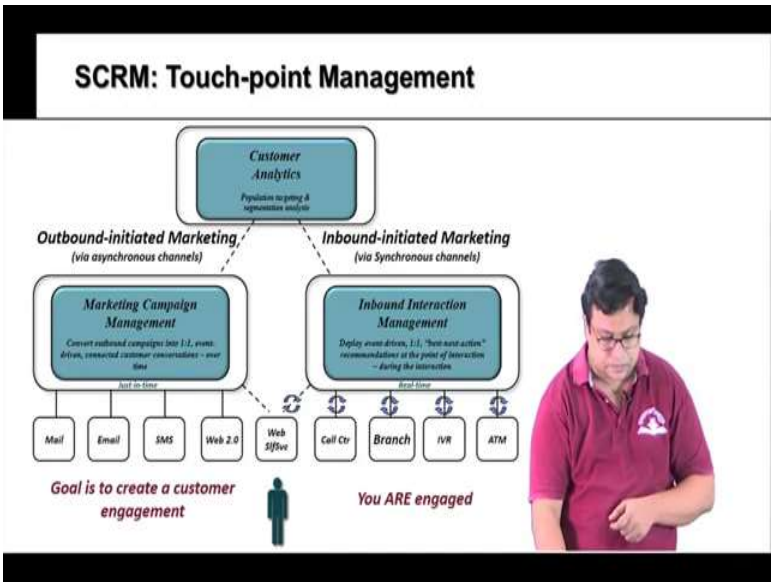

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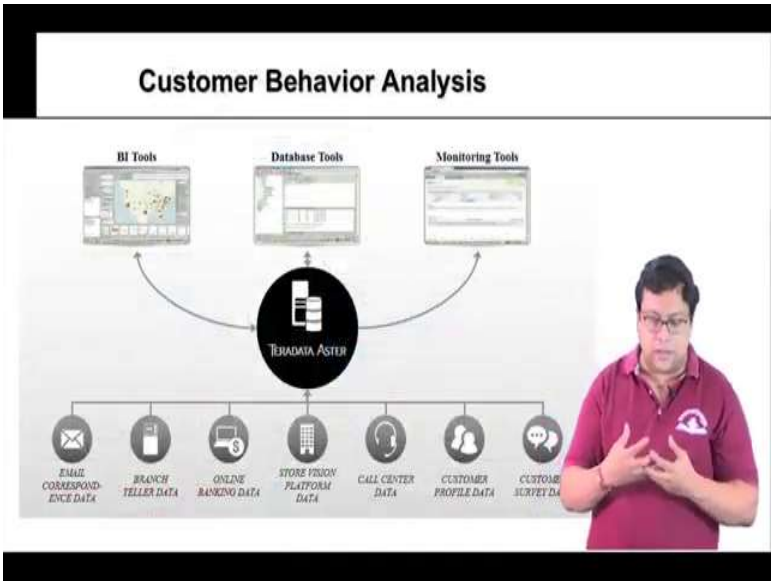

So, when I talk about analytics, you have to understand that there are lots of things that you have to understand in customer analytics. First of all, there are lots of data sources in customer

analytics, the first is like email data and then branch teller data if it is a bank, then there is email data, there is branch teller data means somebody is doing the transactions in the bank that create certain kinds of data.

Online banking data which is another source of data, the store platform data, let's say, store vision platform data is probably if you have a store and there are lots of I would say video cameras are there. So, that kind of video camera also creates a data set for those e-commerce firms or retail firms.

Then there is call center data, customer profile data, whatever customer has shared before and then customer survey data; sometimes you do surveys with the customers about their satisfaction, their problems and etcetera so that kind of data comes up . So, if you can see the data source, some data sources are customer generated by themselves they respond to that. Some they do not respond, but their behavior is something from which you can trace the data.

So, some are behavioral, some are responsive, some are basic demographics like; customer profile data is basic demographic, customer has no control on that. So, all of this kind of data is created and when you get this data through various data tools, data mining tools I would say, big data mining tools basically Teradata Aster is a big data mining tool based on that, what you can do is you can create multiple types of tools.

First of all you can create a database, the basic thing is database. Database means where lots of data is stored in a particular format in such a format which can be easily, from where data can be easily retrieved.

So, that database is the first thing, the second thing is the monitoring tool where you can monitor that, whether the, your based on the data your performance is going up or going down for what kind of problems are happening and those BI tools are basically backed by this.

So, their monitoring tools are basically backed by BI tools, which does the same thing monitoring only, but creates lots of very beautiful charts and graphs and etcetera which is from where, it is the objective of BI tool is that you can see the particular outcome of the BI tool and very easily understand the problem, where the problem is.

So, it is a graphical or non-graphical textual representation. Any kind of representation of the data, it can be graphical or non-graphical, where by seeing the data it becomes very easy for a naive person also. For a person who is not very good in terms of data science and etcetera. He can also see, who has domain knowledge, he can also see and understand that this kind of

problem is there. So, oftentimes BI tools are used for report generation BI tools are also used for real-time monitoring purposes.

So, oftentimes the monitoring tools are backed by BI tools, but all I am trying to say is that customer behavior, when I am talking about customer behavior analysis and when I am talking about data sets. Data sets may come from multiple sources and that sources are sometimes not even in control of the customer and you can take advantage of those things.

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Now, what kind of analysis that you can do in the context of social analytics?So, one important social analytics that you can do is path analysis. Path analysis is to discover patterns in rows of sequential data. So, Let's say certain data sets are sequential, to give an example.

Let’s say in a website, if you have ever handled Google analytics you will know that Google analytics gives you a path that most of the traffic comes in the home page. Let’s say for a particular website ─ and then from the home page, 90 percent goes in this particular page 1, 80 percent goes to page 2, sorry 90 percent goes to page 1, and 8 percent goes to page 2, 2 percent goes to page 3 . And then from page 1 another 30 percent goes to page x, page y, page z, so that kind of tree gets created, that’s a path.

Now, you know that this is the right path. That home page, then page *a* and then page I will lead to maximum sales. In the last historical data, you have analyzed historical data and you found out

that this particular path, that home page then page x, then page a, then page x and then ultimately the transaction. This leads to maximum closure.

Now, if you have this kind of data in your hand, what you can do is in the social media page that you have created you can create certain kinds of pop-ups or certain kinds of links. The moment somebody, instead of coming to page *a* from home page, he goes to page *b*, you will populate a hyperlink towards page *a* in that particular page.

So, that you are bringing in, the moment he is moving out of the track of the coveted path. You are pulling him back or you are probably inspiring him to come or influencing him at least to come to the path and again follow the path.

Now that kind of creations, that kind of strategies can be taken only when you know which path, which sequence, which customer journey results in the most positive result. Not all customer journeys will come up and end in a purchase. In context of all customer journeys, if it is a normal website, if it is not an e-commerce then purchase is out of the story.

But not all customer journeys will also come to a positive outcome. Let's say positive brand image or whatever way you try to measure that. So, you have to find out the best possible path and all other paths that are happening. It might not be one single path.

There can be four different paths which all of this force results in some amount of purchase. Let's say there are four paths instead of one path like, home page, page a, page x and result. Instead of happening, there are let's say four paths ─ **Home page, page a, page x, result, home page,** page **a,** page **y,** page **z** and then **result** and **home page,** page **b,** page **x,** page **y** and result Let's say there are three paths.

Now, somebody has come to the home page and then page y ─ so, from page **y**- so, page **b**, from page **b** the next best option is page **x** and then page **y**, but somehow after page **b**, he goes to page **x** page something else **m**. Let's us say, when after page **b** goes to page m you have to create some strategy in your design. So, that it will not be for all, only those guys who have come to page **m** and before coming to page m they were in page **b** for them this will be populated.

So, you will see oftentimes you have been seen, you will be seeing on their website that ─let's say that I will track your cookies. They say that please accept all cookies that I will track your cookies to give you a better experience. How I will give you a better experience if I can track your path, not only in my website, probably sometimes in other websites also what kind of websites you generally see and etcetera.

If I get this kind of information, I can create a responsive website which includes this information and redesign your page, whatever page you are seeing, that gives you a better result. So, this is something, which is a strategy, which comes under social analytics also.

Not many companies have the power to do that, but often many organizations who have a very strong tech team can do that. Now you have to understand that this is not only the tech team's job, it is also a marketing manager's job to identify those *paths* and to give a reasoning why this path is the best path.

So, until and unless you can do that, the tech team is a blind team, he knows that this is a *path a, path b, path c*, these three paths are the best result, he does not know why. That 'why?' answer will actually help you to answer much more lucrative offerings or much more much different kinds of strategies such that you can use this *path analysis* in your advantage.

The next is text analytics. So, again I was telling that in a different video I will talk about how reviews and peoples conversations are used to do text analytics, but let me give an example. So, one thing that we do and I will share some papers on that.

This probably exactly my own research area, is that what makes a particular review helpful or if I say that; if you see certain reviews. How will I know that in this particular text, what are the factors people are talking about, what are the key issues people are having problem, or what are the key issues people are complaining about?

So, there are text mining techniques which can do that to find out the key extract from a text and then you can also find out the sentiment associated with that topic. Let's say one particular text might have 4 topics; you have gone to a hotel, you have written a review and you are saying that okay, in this hotel the stay was pleasant, but the people's behavior was not so good, the food was okay, but the hot water was not running. So, something is positive, something is negative.

So, first of all I have to find out the things, what things you are talking about, and then I have to find out whether you are talking about positive in those, about those things and negative about what things. So, certain parties you will be focusing on giving me positive vibes, certain parties will be giving me negative vibes. So, I have to find that out. I can also find out what kind of emotions that are associated with this conversation.

The thing that you are saying; are you angry, are you anxious, are you disgusted, are you very, I would say very, very I would say, fearful about this incident, what is your emotion, because those things all each of this information the sentiment, the emotion, the key aspects, all of these

leads to better service design or better product design. If I know that this kind of features you will want, this kind of features, needs, improvement this kind of features are where you are happy, I can track your text and based on that I can create lots of information out of it.

So, that is that is how text analytics is also one major area. So, I will not talk about how exactly to do it, the operational part to do it, because this this not an analytics class, but this is a customer relationship management class and as a marketing manager or a customer relationship manager you have to know what are the various tools I have in my hand. What are the various things that I can do, after that who can do that, how to do that, can be found out later using a data science team or using some data analytics courses. But here I am at least giving you this idea that what are the various things you can do, you can think of doing.

Then path analysis or text analytics, whatever you do you can do statistical analysis for that. When I say statistical analytics you can do high performance like machine learning or you can do econometric analysis to find out statistically whether some effects are significant or not. What affects more, what affects less; you can do some predictions about the future. So, all of these things can be done. So, if you have done basic statistics you know what kind of statistical analysis can be done.

Then you can also do some unsupervised learning techniques. So, things which were nowhere previously it was not told that okay, these are in *group a*, these are in *group b* or this kind of observations are *a*, this kind of observations are *b*, that pre level data is not there. When those pre level data is not there you have to create your own level, you can use ***segmentation***.

Segmentation is basically a way of grouping customers in such a way that customers who have similar characteristics come in the same group and customers who are offering dissimilar characteristics go in different groups. Two groups should be away from each other in terms of their characteristics and the group members within the same group have to be very close to each other.

When this kind of algorithm we try to create we create groups of customers. Why do we create groups of customers? Why is customer segmentation needed?

Customer segmentation is needed because customers are heterogeneous, some people like hot tea, some people like ice tea, Let's say in a class 50% people like hot tea, 50% people like ice tea . To make everybody happy; you cannot make one cup of hot tea, one cup of ice tea and mix it up and then serve.

You cannot serve lukewarm tea to everybody, nobody will be happy, if you serve lukewarm tea to everybody, the hot tea guys will say this is not hot enough, the ice tea guys will say that this is not even cold, forget about not even normal temperature forget about ice tea. So, nobody will be happy.

Then you have to select whom I will serve and if you have the ability to serve both of them then you have to come up with two different products for two different people. Oftentimes, companies do not have the capability to serve both of the both of the segments or multiple segments.

So, then what they do, then they generally go for that particular segment which is most profitable for them. So, they do a targeting mechanism. So, all of these things will only be possible, only when you have enough data with you and you do some amount of cluster analysis or segmentation analysis to solve your problem.

Next is ─ you can do marketing analytics. So, there is a whole course on marketing analytics in NPTEL you can go and attend that course also which is given in the other semester not in this semester.

So, there you will get more details about whatever I am saying here, that what kind of basic things that you can use to be based on basic Excel type of analysis and if you have a little bit of coding idea we have taught from the very basic, probably from very starting of coding we have done the coding in R programming.

So, with Excel and with the help of R programming I have shown, that course also has been taken by me. So, I have shown how all of these things can be done using real time data. So, this particular course on marketing analytics is offered in the other term by NPTEL Swayam which is also a similar kind of course, what you are doing right now probably is a little bit longer, you can do that course.

And you can get a better idea about what these things are operationally in hands on basis, you can get a better idea. So, even if you are a marketing manager, if you have a little basic statistics background or basic business analytics background you can do this particular course.

And then the last one is ***data transformation***, which is transforming data for more advanced analysis generally done by these BI guys or data engineers, which can also be one part of social analytics portfolio.

So, these are all the things that you can do under social analytics and when we say statistical analysis there are lots of things that come under statistical analysis. Again, do a business

analytics or marketing analytics course to get an idea about what they are, but overall these are some of the things that as a customer relationship manager you should be using.
You might not be doing it on your own, but somebody else is doing it. You should be able to use the results that the other guys are producing for you by doing this kind of analysis.

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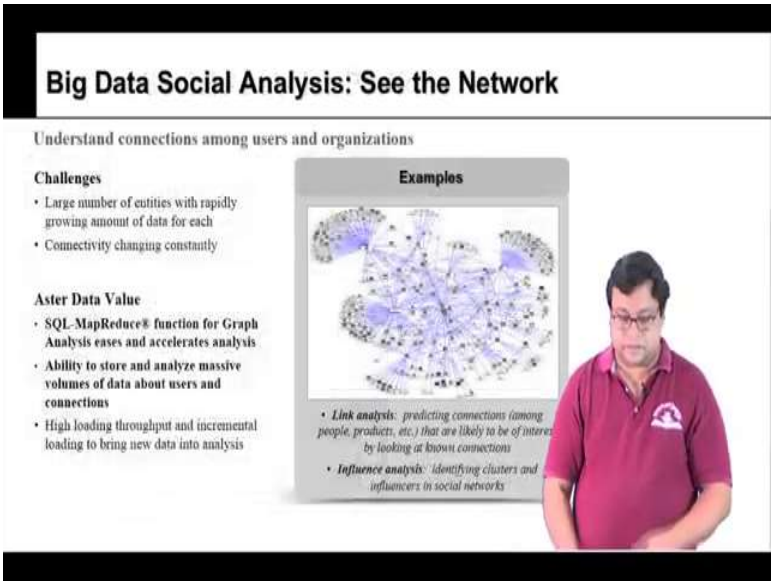

Then **big data social analysis**, you can also do big data social analysis in terms of the, so when I say social analysis, this is the social network analysis that we are talking about. Again in the marketing analytics course we have discussed, what social network analysis is? This is about, there are multiple nodes, multiple people in a social media are basically one-one nodes and I and their connections between each other is basically this, I would say these straight lines which we call the relationships.
Now, the relationship can be bi-directional. Bi-directional can be unidirectional. For example, my relationship with a celebrity whom I am following is unidirectional, whatever he says I listen, whatever I say, and probably he or she does not listen.
So, it is a unidirectional relationship, but I am liking his page. So, there is some relationship between that particular person with me, but it is a *unidirectional* relationship. Whether it is a strong relationship? No, probably I follow him, but I do not get persuaded by him, my day to day decisions are not taken by him.

On the other hand, let's say my other colleague is also there on Facebook. They are the relationship bi-directional, both of us talk with each other on social media and that relationship is probably closer than my relationship with the celebrity. So, that is a *bi-directional* relationship and probably a stronger relationship.

Now depending on how many relationships you have in a social media, depending on how many strong and how many weak connections do you have, how many unidirectional and how many bi-directional connections you have, based on all these things I can create a social network which might look like the picture that is given in this particular slide .

And in this social network you can see that there are some nodes, some points who are more important, more strong, in terms of data sharing, in terms of influencing people than others. You will find out your potential influencers here and if you can find out the potential influences in the social network then that will help you to understand that; whom I should influence such that I can pass the information in the whole social network.

Whom I should put money on or whom I should persuade, whom I should bring in in my advocacy team by doing lots of efforts, such that this particular person who is an influencer himself or herself can actually spread good things about me, positive news about me in the whole network.

So, identifying that influencers, identifying the network structure all of these things can be done using social network analysis. One small case study has been discussed in the marketing analytics course also, you can go and see that, but these kinds of things are also there.

You can ask a data scientist in your team, if you have a data science team, ask them that, why do not you create a social network and social network for a group, for a closed group and try to find out that who is the major important person in this group and try to influence him, if you can influence him that might ─ For example, brand ambassadors, oftentimes these events and various kinds of competitions or various kinds of brands, create campus brand ambassadors. They hire campus brand ambassadors.

Now, should it be hired, using what should be the policy when you try to hire the campus brand ambassador. One important policy can be that; whether this person is a, probably a person who is well connected.

Now, if you can create a social network for a group of people within a campus; or if campus is very large (probably a significant amount of people in the campus.) Let's say if you say that,

okay I cannot track in IIT Kharagpur that 12,000 students I cannot get data for everybody , but if you can get data for 5,000 that gives you enough big network representative network.

From there if you can find out that, okay I have 100 applicants and these 100 applicants are here, here, here, here, this is their position, these many people they are connected with, I can get an idea of who should be my campus ambassador.

So, now I am talking about campus ambassadors in a closed context. The same thing is done in social media in a much larger context, how many friends do I have? So, you will see that oftentimes, when you go and click on, let's say certain kinds of links or certain kinds of apps in Facebook, which says that how will you look after 30 years or what is, what was your profession in your last birth.

So, what they do is, you go and click an app they collect some information about your profile and give you a funny message, some funny outcome of this and you share, many people laugh. Right now the avatar thing is going on, what is my avatar? So, you share your picture and now by doing that you remember that you are sharing your public information, you are sharing your pictures, you are sharing your friend list ─ you are sharing your name and many things you are sharing.

Now, if many people actually access this then I know which people are connected with which people and by doing that I can create a social network and from that social network I can find out which are the people who are more connected with each other in terms of strong connections, weak connections blah, blah, blah.

And if I can get that kind of information I know that whom to target, whom not to target. It is a tough exercise, cannot be done by a common person. You have to spend lots of money, but if you can spend that kind of money, you get resources you get information from Facebook or social media. So, strong that that can give lots of marketing benefits to you.

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You can also find out what shoppers are searching for, for example, "*serious shoppers*" who browse 5 plus products in a session. So, you find them and after browsing, they perform 2 plus fruitless searches within 10 pages of each other. And then within 5 pages of the last fruitless search, they abandon the site, perhaps frustrated.

So, the one that I was saying that there is a path which is the best path, some searches that this particular customer is doing is good, some things are bad, some things are fruitless and fruitless search will lead to frustration and then leaving. So, you have to bring it into the fruitful search again. So, that kind of analysis you can do.

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What is the marketing strategy for success using social media? Where should I increase my marketing spend to drive ROI? That is the major decision. So, you will see that, okay I have so many tools I have, I am discussing so many tools, so many ways blah, blah, blah, everything will require money.

Now the next basic question comes up is, where to spend the money? Will I spend the money on Facebook? Will I spend the money on Instagram? Whether, will I spend the money on Twitter? Or what, how to spend the money, how to decide where I will put my money in?

So, that also becomes a very classic example of marketing budget allocation and we try to, what we try to generally do here in this context is that in the last couple of years if you have historical data. For the last couple of years, in multiple channels, how much amount you have spent and what were your ultimate sales you try to find out. And you try to find out the relationship between these investments with sales and when you are able to find out the relationship of these investments with sales that particular functional form you can use to further optimize your investments.

Again one case study on exactly this particular topic has been given in marketing analytics course. I am coming back and back to that course because these two courses are very interrelated

with each other, many things that could have been theoretically discussed here actually have been practically done there, so Multi-Touch Attribution.

So, you go beyond the last click and identify which ads and channels perform the best. Because not always, I have bought from Amazon just by clicking on Amazon and putting the product name and I got to that product and then bought this product, doesn't mean that Amazon alone has actually created my sales.

Probably somebody has shared this particular thing in Facebook or Amazon was giving my ads in Facebook or some other platforms. I have seen it there, I have checked there, probably I have also checked in Flipkart and then after multiple customer journeys, I ultimately bought it here.

So, if it is very important to trace back, it is not only the "last click" that matters, what actually matters is the lots of paths that I have travelled before that last click. And which multiple touch points between me and the company, in my journey which touch point has actually contributed towards my sales is something is very important to find out. Very difficult to attribute, very important to find out still, it is a research problem, we are in the marketing analytics course we have given some probable solutions, but it is still a research problem, we are still struggling and how to find out the correct attribution.

Quantify which ads lead to conversion as I was telling, which is the correct touch point which one actually resulted in good result and bad result. Calculate the true ROI, in a per ad basis and run time-sensitive promotions by knowing which ads convert the fastest. So, all of these kinds of decisions can be taken. It requires data analytics skills, but you as a customer manager at least ask these questions to the data science team so that they can try to help you in strategizing.

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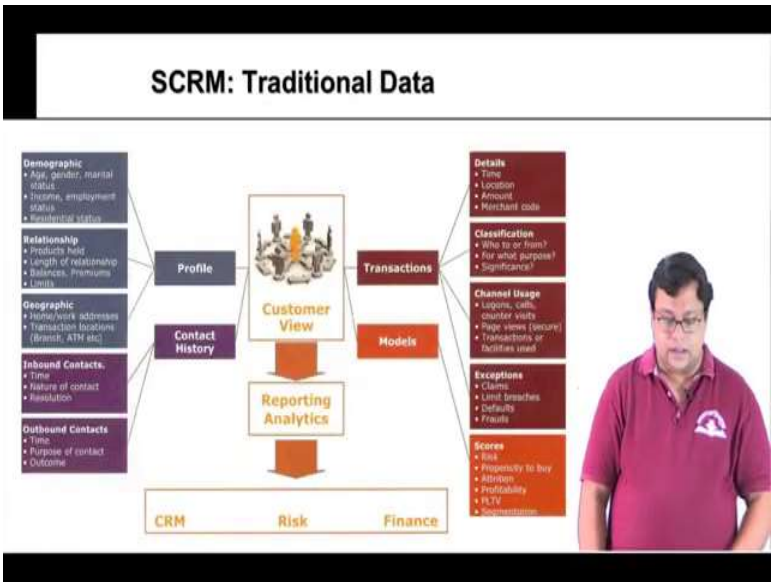

Some of the traditional data that we use in social CRM is the profile data, customer profile data, customer contact history that, whom they are friends with blah, blah, blah, and their transactions and their models. For example, the risk propensity model, the attrition model, the profit dividend trial, when we create all of these things that gives you the reporting analytics. In case of banking that leads to the risking and risk and finance profile of this particular company.

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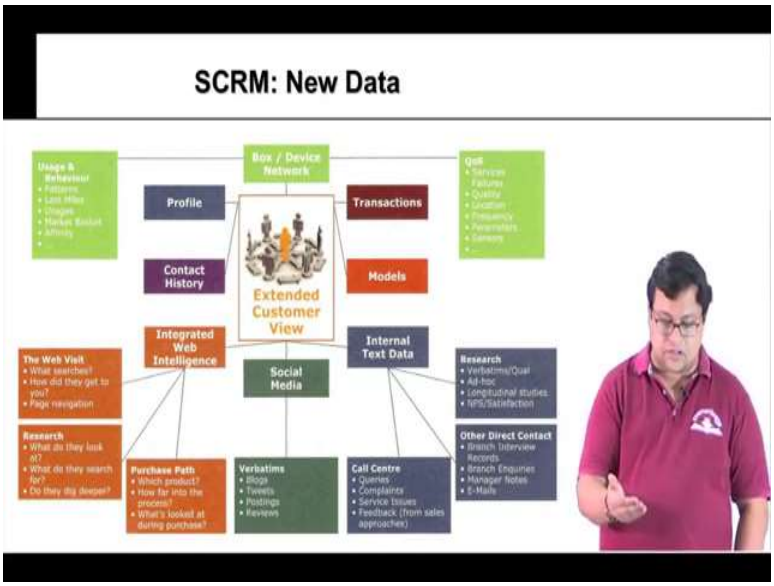

And in the new data, in the new context, this was the traditional data. In the new context what we also got is their behavior in the...So, other than profile history and contact history we also have integrated web intelligence. I know which kind of websites he is looking for? Which kinds of social media friends he has? Whether he is connected with the political person or not? Whether he supports a certain political group or not?

I can have the social media, verbatim social media post like; whether they are talking good about us or not, talking bad about me or not. I can also have the internal text data, if this particular customer is talking with my customer service agency, then what kind of conversation is happening with my customer service team and this particular customer.

And then I can also have their *usage data*, I can also have their *QOS data*. All of these things together create a customer profile. So, the alone customer profile data and customer contact history data which was classically used before the traditional data points have absolutely changed in the context of social CRM and social CRM as a strategy of marketing very good, but it becomes handicapped unless you have a very strong data science team.

So, use social CRM; obviously, to start with, create the data fast, but then; obviously, employ a data science team who can help you in creating much more information from the data that is generated from social CRM.

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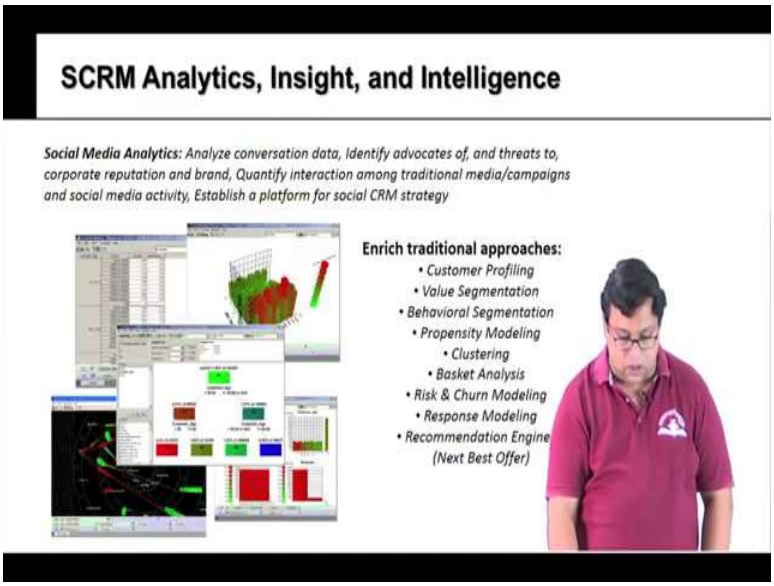

That is probably all. These are the various kinds of insights that can be generated, that can be all about social CRM. We have discussed quite a lot of things about social CRM, we have to think about some of these things and I will be giving certain assignments on this particular social CRM aspect. You can go and see in the discussion forum also and I will see you with certain case studies on social CRM and etcetera in the next videos.

Thank you very much for being with me, see you in the next video.