Management Information System
Prof. Surojit Mukherjee
Vinod Gupta School of Management
Indian Institute of Technology, Kharagpur

Week - 04
Supply Chain Management
Lecture - 15
Customer Relationship Management

Hello everybody. This section, we will be talking about an area called Customer Relationship Management.

Now, this is something an extension of ERP, I would say. So, like beyond ERP, like I said that in the previous section, in last slide, we mentioned that the new developments which are taking place after the ERP. So, once ERP was over and people implemented ERP, then you know people realized that we need more software because it was a big help.

So, one of the first extension which was developed was and is known as Customer Relationship Management. So, these are lately the branch out of the ERPs, there were some part was covered under the sales and distribution module. Because after all CRM is all about customers and marketing etcetera.

But then it started to grow. So, when it grows, it becomes a separate software altogether and it can be used by itself , because sometimes you can implement a CRM software

without even having an ERP and you can integrate that with your existing ERP of course anyway. For an ERP software, you can buy SAP, and the CRM product you can buy from some other vendor. But they all talk to each other and they can be very easily linked because as I told you also when you have an ERP in place, everything has to finally flow into ERP. All financial information flowing from any transaction must go to the ERP system. So, as either a credit action or a debit action will be recorded in SAP's book of accounts.

CRM is a tool for managing a company's interactions with its customers and sales prospects. So, it is talking about customers. Often CRM is equated with automating business process related to sales and marketing and customer service, but CRM is just not technology products but it also helps in doing lot of business transformation. It is just not a software, but it can develop lot of knowledge system which comes out from these transactions. So, lot of reports, knowledge and information about customers' behavior and preferences etcetera get generated from CRM tool.

So, that is what is what people really look forward to because all these knowledge helps them to take future decisions. These are supporting your decision making. So, it is a decision support system you can call. It involves strategy and redesign of business processes with the overall goal to find, attract and win new customers.

Retaining those customers and finally, getting feedback from them to better design company's products and customer facing processes. So, it is always you are you thinking about improvement, improvement and improvement. So, that is the whole thing about a business goal that you need to improve your products and services and your customer relationships because relationships matter. Relationships is what brings you more and more business.

CRM can also reduce the costs of marketing, sales and retaining customers. So, whenever you implement or invest money in such software's; again, as I told you repeatedly, these are not cheap, these are quite expensive software's; you are investing lot of money not only in the product, but also in the implementation project and you saw how complicated these projects are. It takes lot of time lot of consultancy effort so that it gives benefits by getting more business and of course, the other part is reducing cost.

CRM uses People, Process and Technology to gain insight into the behavior of customers. So, again, here we were talking about same thing what we did earlier in the case of ERP. CRM can bring together information from all data sources within an organization and give one holistic view of customer in real time.

So, it is doing lots of analysis. Data gets captured, basically when you are executing lot of transactions related to sales etcetera and then, you are doing lot of smart analysis and getting reports. So, give you an overall high-level view about that customer; how much he is buying, when is he buying, what sort of product he is buying, what are his likes and dislikes etcetera.

And then, you get real insights into your customer and then, you can push things which are more relevant for the customers and these are things which gives customer delight. So, I think these are the things which are happening in a great extent in e-commerce. You must have seen the Amazon, Flipkarts etcetera. They have lot of experience; everybody is having now experience with these kind of e-commerce platforms and that is where you see the impact of CRM in a very big way. Much more than what you see in a conventional industry like a manufacturing industry for example, or automobile industry; but e-commerce businesses are using CRM in a very big way.

CRM allows customer facing employees from sales, customer support and marketing to make informed decisions on everything from cross-selling to up-selling. So, with the help of this tool, sales guys are getting lot of on the spot information so, that probably

you can sell something extra. Probably, he is come for one product and probably but we can find out that he is interested in something else from CRM analysis reports.

So, we can also showcase that and we can additionally tell the customer that we have items which he likes and uses and we are aware of that fact. So, we can sell more, we can up-sell, probably he came to buy something of the medium grade but we can sell him in higher grade product, the more value-added grade which is more expensive. So, finally, it is more business more revenue, more money and all this is made possible with customer knowledge gained from CRM data. So, from your angle that is what you want.


Benefits of CRM - So, its higher productivity, better cross-sell, up-sell; Improved customer service and satisfaction; Better opportunity closure; Focused marketing, reduced sales and marketing expenses; better profitability, and increased customer retention loyalty. Most of these benefits I was talking earlier; but I will talk more about that here. So, better cross sell, up sell etcetera you can do because you have information readily. When the customer comes in to your store, from your screen, you get the information and you know what he wants, what he likes; what he desires and what he has purchased earlier.

So, you can sell him something more than what he really came for. So, that is better business for you. Improved customer service because when customer readily gets information whatever he likes, dislikes; he gets a satisfaction. Yes, ok, this the supplier or the business man, he knows what I actually like, what I prefer.

So, that is the customer relationship which gives satisfaction to the customer.

Better opportunity close - means you can close deals faster etcetera, because information about your customer is readily available. So, you can take decisions and the customer can also take decisions. So, the deal gets closed quickly.

Focused marketing, - you can focus on particular product because you now know the customer. You know his behavior, you know his buying pattern, his preferences you have all the analysis about him. So, now, you can really target what products to push him and at what time or what season etcetera. That is at which time of the year, he buys something. You have so much information of the customer, you can really push particular item etcetera; brand, color, dress, everything you know about his likes and that is your strength.
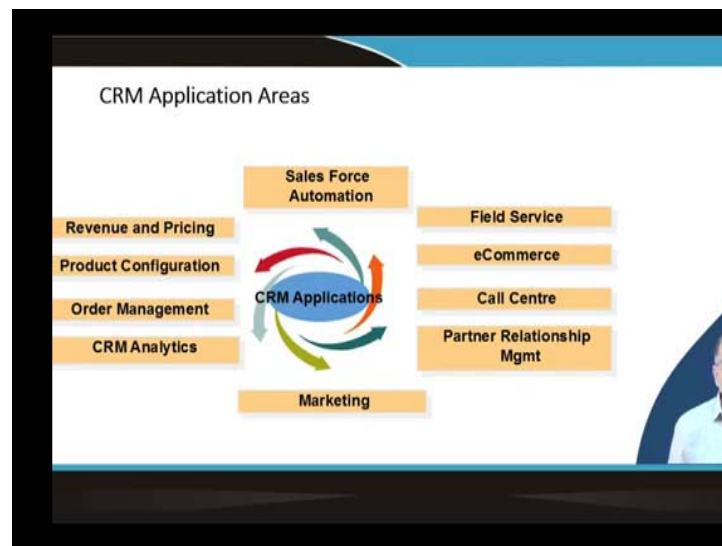
CRM application areas: The various areas, where CRM is used are :- Sales Force Automation, Revenue and Pricing, Product Configuration, Order Management, CRM Analytics (of course, everywhere any modern software has to have analytics), Marketing, Field Service, e-Commerce, Call Centre, Partner Relationship Management. I will just quickly cover all of these areas so, I have to go through a bit fast. For some of them nothing much to explain because it is very understandable.

Sales force automation; - typical areas of sales force automation like you know sales force is all the frontline sales who are going into the market and selling. So, that is the dealing with dealers and this is called sales force automation.

Contact management, - deals with all the contacts to whom they need to go for business. It is all information dependent, where I am going and meeting a potential customer, if I know some information about him or her, in advance, it helps me in dealing with him. Lead management, opportunity management, sales forecasting and pipeline, sales performance management, territory management, quote generation. These are typically standard selling activities and nothing new. It is all technical sales and retail sales or whatever. These are typical sales functions and not directly dealing with the 'relationship management' part.

But what CRM mainly does is where automation of the application helps with giving insights and information. The subject we are talking today is "managing information" not the "technical sales" part. CRM helps in giving information related to the areas of Territory management and Quote generation. It is helping in quote generation because you know the product and you know the customer, you know what he wants etcetera. Often, as soon as you meet him, he wants you to immediately give him a quote using CRM.

Sometimes you can use even handheld devices which we will talk later maybe through your iPad or special handle devices or a simple tablet or maybe even your phone. So, we can connect to the company's CRM system and generate a quote on the spot and give him the quotation.

So, these are things with which we really impress the customer, by giving faster response. It is not an individual customer, you go to a retailer, you go to a distributor into the shops, you go and see if he wants a list of things which you can type it out there itself in your I-pad or Tablet and give him a quotation right away there itself. It can be sent by email and the retailer gets the quotation in his computer.

So, the job is done, very fast. Earlier, in the manual process, I would go back to my office, then sit it in my computer, type it out and send the quotation etcetera thus taking a long time. But with CRM things move very fast. So, that is what all automation is about. So, that is why you call it Sales Force Automation.

I will repeat what I said earlier. Sales force automation in daily jobs is aimed at increasing their productivity because you can now, do things much faster and better with more efficiency. That is what productivity is all about.

So, with these applications sales personnel no longer need to remember or store contact information of thousands of company, existing customer products. SFA helps them to manage new leads and sales opportunities and these have helped sales officers in better managing sales in their territory and tracking sales performance based on which they

have get incentive compensations. So, everything is now recorded and automated etcetera, and system driven. So, there is nothing manual work, entering in your dairy, with a pen and paper etcetera.
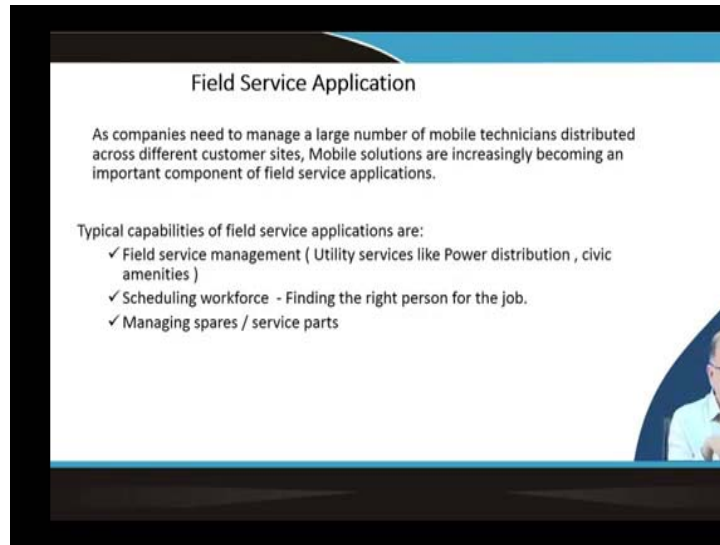
Field service application - As companies need to manage a large number of mobile technicians distributed across various customer sites. These are mostly used for utilities service areas, for example, electricity distribution and other civic maintenance services. When something goes wrong in say utility services like power distribution, civic amenities and there is a customer complaint, you have to send a technician. Using this tool, they can know which of the field service managers or technicians are currently free. So, as soon as I get a customer complaint, I can assign somebody or I can assign the right person, having the required expertise to the problem. So, for that requirement the skilled person is available and I assign him the job. In Europe, wherever they are using optimization techniques by locating the right person available closest to the problem area. Since here all technicians drive their cars, maps (like Google maps) are used for locating the nearest person and to help him by suggesting the shortest driving route to the maintenance spot. This helps to save time and cost and gives better and prompt service to the customers. So, that is how they optimize their field service force. So, that is through this application, Field Service Application and these are also now coming to countries like India. We have also stated using similar optimization softwares .

These are what I have discussed.
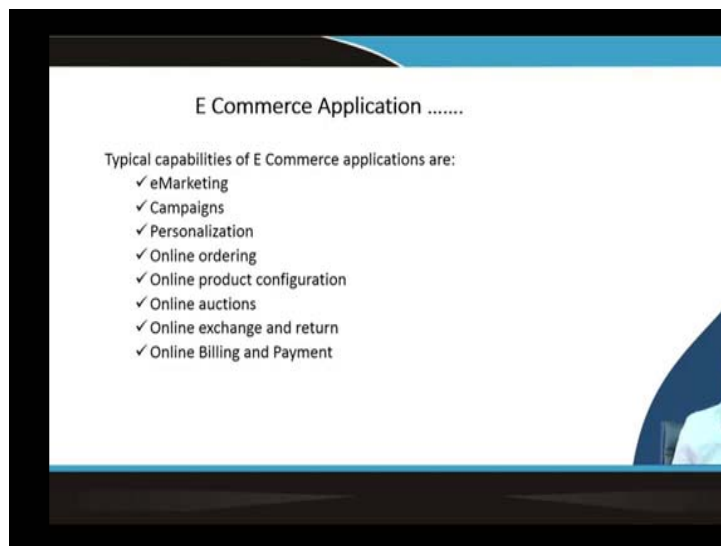
E-commerce applications: - Typical capabilities of e-commerce as I was telling e-commerce is heavily using CRM. eMarketing, Campaigns, Personalization, Online ordering, Online product configuration, Online auctions, Online exchange and return, Online billing and payments. So, we are doing all of that. So, when we use Amazon or Flipkart, we see e-marketing, lots of marketing advertisements keep coming in, campaigns, we know discounts etcetera offers are made.

Personalization- because they are capturing all clicks, they know what we like or dislike etcetera, what we ordered last time, last when we ordered. So, they will personalize, and those similar things will be projected on our screen as ads for example.

Online ordering, - we are doing it almost every day, everybody is nowadays using on-line ordering.

Online product configuration, - we can also decide what combination etcetera. We can do online auctions, you can take part when the e-auction sites like eBay etcetera, where you can you know quote, you can offer something that you will pay this much and if your quote is accepted, you get that material for that particular price whatever you proposed. Related applications are- auctions, online exchange and return, online billing and payment.
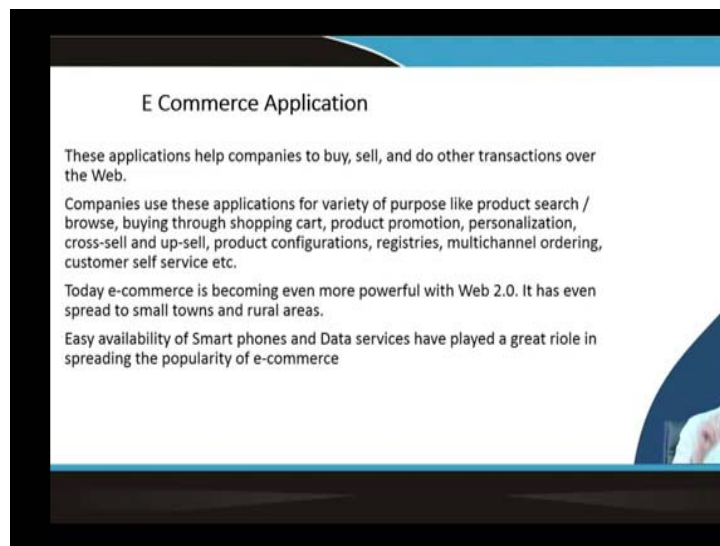
So, nowadays, we are very conversant with e-commerce because everybody is using it. Sitting at home in the lockdown period, we are ordering things, food, clothing, grocery, shirts, books etcetera. The companies use these applications for variety of purposes like product search, buying through shopping cart, product promotion, personalization, cross-sell, up-sell etcetera.

Today e-commerce is becoming even more powerful with Web 2 dot 0, second generation. It has even spread to small towns and rural areas. And, you can see people in the rural areas using, ordering things through their phone and people have become so smart that technologies have become all pervasive, they have spread out to small towns,

villages etcetera. People are using their mobile phone to order things. So, it is not restricted to metros and cities anymore. Easy availability of smart phones and data services have played a great role in spreading the popularity of e-commerce.
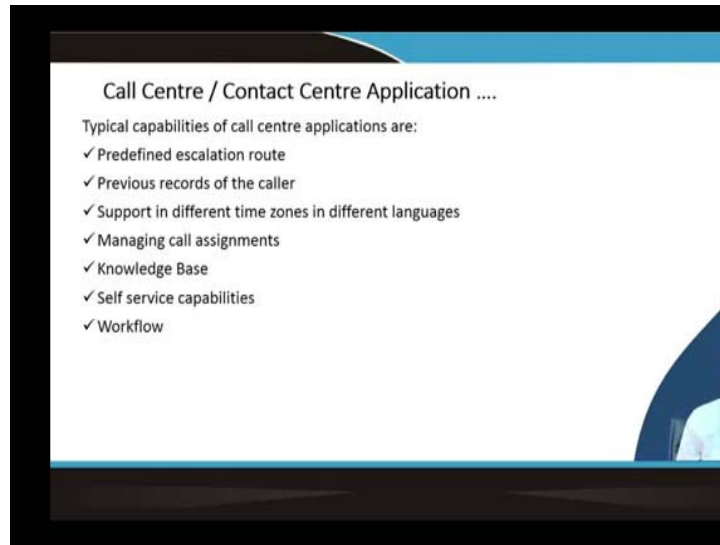
Call center, contact center applications; - Typical capabilities of call center applications, we all are quite familiar with in India. We are very big call centre service providers, lakhs of young people are working in call centers in India, we are one of the largest Call center service providers in the world. The next largest probably is Philippines in Asia, China is quite behind us.

The typical capabilities of call center applications are: - Predefined escalation route, Previous records of the caller, Support in different time zones in different languages, Managing call assignments, Knowledge base, Self service capabilities, Workflow etcetera.

In short, companies across the world, are using these call centers for giving service to their customers. Say a company in US having customers in US, there were problem. They call up a call centre. The call centre is actually located in Bangalore. So, a person sitting there receives the call and then, helps the customer so that his problem gets solved. And there are various types of call centers doing not only voice support, they are doing lot of transactions for back office work. Transactions for maybe some accounting, legal procedures, medical transcription etcetera, you see there are several things which

are happening here in India for companies which are located anywhere in the world e.g. United States, Europe, Germany , Japan anywhere.

So, all that work is coming here and are being delivered through call centre. The entire management and the knowledge management is part of that CRM tool which is being used to manage the entire team because everything is knowledge based. It is all management of knowledge and it is information based.

So, here, knowledge means information. It involves lot of IT including hardware, and software of course including CRM. The information system has to be managed because it has to work 24 by 7, because they are working on different time zones and even in different languages.

So, there has to be a knowledge base and there has to knowledge repository and so that people can take over the problem and also understand the problem, because you have to resolve the customer's problem over the phone and you cannot just say you will collect information and call back after some time to solve the problem.
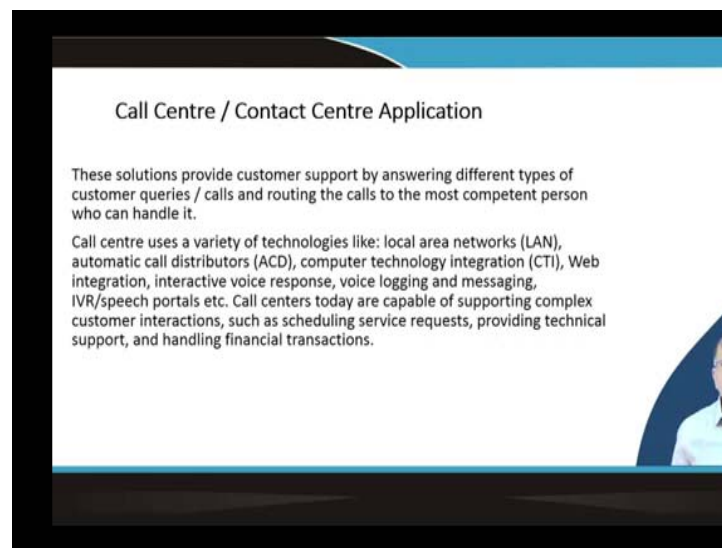
So, these solutions provide customer support by answering the different types of customer as mentioned. They use varieties of technologies like local area networks, automatic call distributor ACD for running these operations. Computer technology interaction (CTI) Web Integration, Interactive Voice Response (IVR), Voice Logging and Messaging etc. It goes to show that there is lot of technology involved in this business. We apparently just see maybe a person receiving a call and talking over phone,

but when he or she is looking at her screen to respond to that phone call, there are lot of technologies working behind that screen.

What we need to run all this is also MIS (Management information system) and are a part of the information system. Complex information system is involved in this because you know its 24 by 7 operation and is having somebody talking 1000s of kilometers away in a different time zone; maybe when it is daytime, there it's mid-night here, when the servicing is being delivered.

So, call centers today are capable of supporting complex customer interactions such as scheduling, service request, providing technical support, and handling financial transactions. This is becoming more and more sophisticated, developed and complicated. It is just not just receiving a phone call and giving a solution. Those things all still there, but there are many sophisticated applications in call centers as well.

Partner relationship management applications, typical capabilities of relationship management are partner addition, distributing leads, partner profiling, managing different partner programs etc.

Partner means with anybody you do a business; so, your vendor can be a partner, your supplier can be a partner, very important partners because with their help you are getting some service or product and then, with that, you are being able to service your customer at the same time. So, managing channel inventory, partner pipeline are the various capabilities of partner relationship management.

Marketing management application again typical capabilities of marketing are campaign management, customer interaction management, marketing planning, marketing resource, opportunity or lead management and loyalty marketing.

So, what is important from our course perspective in MIS is that these are all typical marketing activities. All of these are supported by this particular software called CRM application. That the name of the software could be different from vendor to vendor and when you are using a CRM software for the same marketing activities which you used to do earlier without that software, now you are able to get lot of information.

So, lot of data is getting captured centrally into that software and that is generating lot of information and report for you so that you can take decision - the right decision or the best decision in time and you can take it very early. So, you do not take much time to get it. Over the phone, looking at your screen, a customer calls you up like the example I showed you in the ERP session, you can respond to the customers queries by looking at your screen and punching some keyboards and getting some information about the customer itself.

You can tell him sir; this amount is outstanding; you have not cleared my last few supplies payment. So, then again, immediately you come at advantageous position. So, he is at the back foot now. He will try to defend, no fine, I have delayed. I will pay you etcetera, what can you give me now etcetera.

So, whenever you are doing let us say campaign management, for example, and you are capturing data for several customers because you are giving them forms, asking them to fill up their information like- date of birth blah blah etcetera. So, many personal information, phone numbers etc. get collected. And then, you give it over to your say call centre and then the call center starts calling up these numbers. Is there any requirement for a loan or whatever like those calls which come from call centers. All of us have experienced such calls for taking loans, buying insurance policies etc.

You have collected all the information through this campaign management. You have collected lot of data, and now you are using that. So, that is the purpose of that software, the CRM software is to collect data so that it can create and generate information, reports for you to utilize that either to take decision or to grow your business and do new business.

Your whole purpose as a marketing person is to increase revenue or business for your company and that you are doing utilizing this software which is helping you to do it better, faster with less time maybe even with less people. So, you are more productive, more efficient and you are more cost effective because you are using less people and less time.

So, your company had invested money in buying that CRM software, but now you have to reap the benefits. Two ways I told you earlier also that you reap the benefits; one is you reduce your current cost of operation and second is you increase your business revenue. So, you have more revenue and you make more profit.
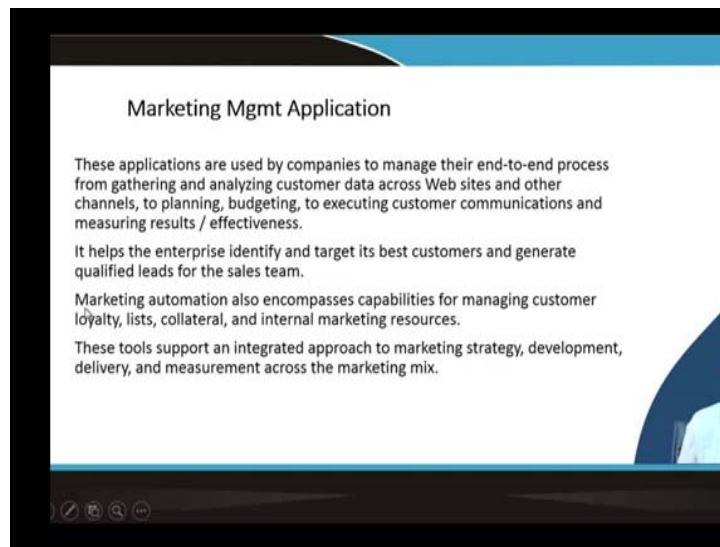
Like here it says marketing automation which is of our interest. Automation also encompasses capabilities for managing customer loyalty, lists, collateral and internal marketing resources.

So, when you have repeat customers and you give them special benefits because you know they are repeat customers, you generate something called as customer loyalty. So, you retain that customer and that customer always wants to come back to you because you give them something which they like. You give them some delight maybe you give them, some extra discount or whatever so that it is generating customer loyalty.

And all that you cannot do without the help of that software because you need the information, what the customer wants, what the likes, how many times you have given them discounts earlier, what was their reaction to that, what is their feedback, are they giving me 5-star feedback etcetera which, I can use in my e-commerce site. So, the other customers you know they get impressed that this product is getting 5-star feedback from so many people. So, it must be a good product. So, they will buy. So, that is how your revenue will increase.

So, this tool supports an integrated approach to marketing strategy, development, delivery measurement across the marketing mix. So, that is the importance and significance of the tool as it gives an integrated approach to all the marketing functions. These are standard functions which was always there; strategy, development, delivery. But the tool is used to measure all the things and across the marketing matrix. So, it is

measuring, getting data and once you get a data, the software can do a lot of things. So, it is measuring, analyzing etcetera and then, giving you intelligence.
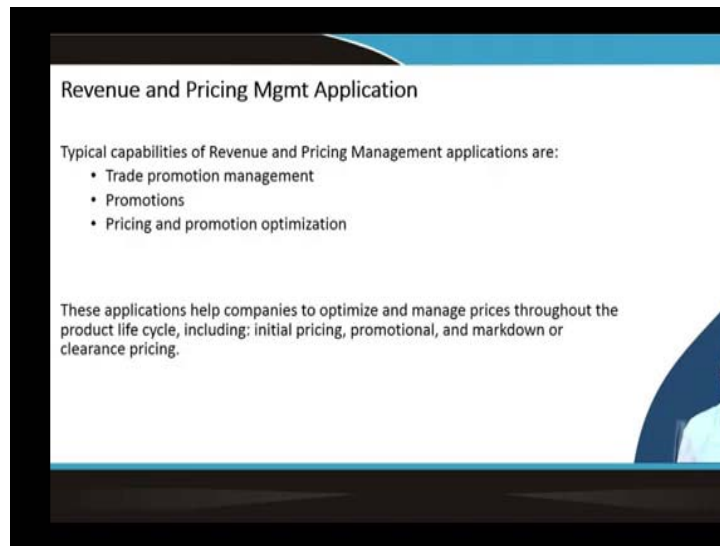

Revenue and pricing management application; - typical capabilities of revenue and pricing management applications are trade promotion management, promotions, pricing and promotion optimization. So, when you do a promotion and management, what you do? You offer lot of incentives or discounts etcetera - why? Because you want to attract new customers and you want to sell more. So, that is why you offer incentives during promotions.

So, maybe you are you doing a seasonal promotional activity. So, you want to go out to the field, attract customers and of course, then you want to sell more and there again also you need this sort of tools because each customer comes in and they fill up a form etcetera and you transfer all the data to your system, which you can use in future.

Because once that customer's basic data is captured, then you can use it for your future business and you can contact them, come up with more offers. You can again go back to them, with this new offer, and ask whether they would be interested?

So, these applications help companies to optimize and manage prices throughout the product life cycle including initial pricing, promotional and markdown or clearance pricing. So, there are various pricing things which you know the marketing people use and, these applications help you to actually manage that. So, that is a case of managing information system of revenue and pricing, which we are discussing right here.
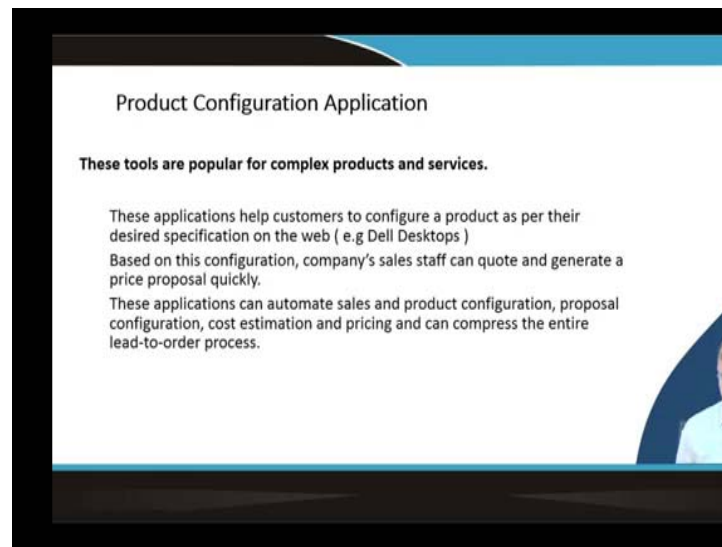
Product configuration application: These tools are popular for complex products and services. So, when you are designing a new product for examples, or helping customers to configure a product as per their desired specifications on the web. One example is Dell. When Dell came up with desktops, what they did was on their site you could go and select the components as per your choice. So, it was not a standard desktop that was being offered. As a customer, you could configure - so much of RAM and so much of hard disk space, this particular processor, this particular mother board or whatever so many USB ports etcetera and then, based on that configuration, the price will be calculated. And once they agree, yes fine, they can deliver at that price you make the payment and the desktop as per your design gets delivered.

First introduced by Michael Dell, of Dell Corp. about 10 or 15 years back, the company soon became one of the largest suppliers of desktops in the world. This is a very complex way of handling things. So, you can actually configure your likes into a product. Based on this the company's sales staff can quote and generate quotation. These applications can automate sales and product configuration, proposal configuration, cost estimation and pricing and compress the entire lead-to-order process. So, everything is happening online on a system software. So, you do that immediately, the calculation is done and the quotation is made, and you once approve the price, the order gets released and product gets delivered.

So, whole thing probably takes 15 minutes to 20 minutes. You have placed an order for a computer, configured by you, and not just not a standard computer. Thus, whatever

specifications you wanted, you have built it into that product and that is what is being delivered to you. Without much of or any manual intervention that is what is important. Nobody talked to you etcetera and you just did it online with options like drag and drop and things like that.

CRM analytics - so far any software, you know analytics is one of the key thing and in this we have - Sales analytics, Marketing analytics and Customer service analytics. So, analytics means once you have data, the analytics just happens and you get all sales related KPIs and reports, graphical dashboards etcetera. Marketing analytics generally come with predictive analytics so you can know how to improve customer segmentations and targeting tools to measure the effectiveness of a marketing sales promotion.

If I do a sales promotion, I have to invest some money, I have to go to a hotel, book a hotel rooms, spend money, invite customers and then, give them some tea-snacks or food or whatever. So, lot of money goes in to promotions. So, if I spend money, what is the sort of business it can forecast? So, where, the forecasting will be through these analytics. All this can help me in calculating the ROIs?

The analytics from previous information or data will tell you, fine if you can do such a campaign, invest money, probably you will get so many customer, then so many bookings. So, your ROI will be whatever x, y, z. Now, whether you accept it or not accept it, is up to you and that is the mangers discretion.

Customer service analytics are increasing in popularity as companies demand greater visibility into the performance of call centers and all support channels in order to correct problems, before they affect customer satisfaction levels.

So, we try to capture lot of customer data. Like whenever you order a food, say delivery by Swiggy, then after the order is over or is delivered, then there will be a feedback will come out and they will show stars and you have to rate 3 star, 4 star, 5 star etc. based on the service quality. Same, every time you travel in a taxi like OLA or Ubers.

So, every time you see people are asking for your feedback because that is the thing which they need for their advertisement.

So, what we are doing? We are spending our time to give them feedback which they are using for their business. But in return, what I am getting? I am not getting anything in money terms or whatever, but probably you can say in future, we will get better service. If that company does well, they will give us better service, may be better discount or whatever. We do not know, but some benefits may come.

But still we as a customer, everybody and all of us are spending our personal time to give customer feedback, satisfaction feedback in various things. In all e-commerce applications, ordering food, taking a taxi ride, buying things through Amazon, even in bank site you go, even State Bank, will ask you, "can you rate us now or maybe later" etcetera. So, everybody wants your rating, everybody starting from e-commerce to taxi to bank.

Some leading CRM products; name the commercial products which are available:

SAP CRM, Oracle Siebel, Salesforce dot com, Microsoft has got their product and Amdocs. So, these are the vendors. SAP CRM is from SAP, Oracle Siebel is from Oracle, Salesforce dot com is a company by itself, very famous CRM company organization. Microsoft all of us know and then, Amdocs is another vendor.

Thank you very much.