

**What are the types of CRM analytics?**

Statistical methodologies

<b>Model Types</b>	<b>Purpose</b>	<b>Sampling Designs/Data Needs/Software (only minimally required software will be mentioned)</b>
Acquisition models	To acquire new customers based on publicly available lists; segmentation of such prospective lists or lists created in the process of telephone and/or web campaigns for specific marketing or customer care programs or customer interactions	Sample of best prospects who are known by previous research vs others used as a probability model; associated socio demographic details for each individuals; no internal data that could be used. The sampling is stratified sampling. SAS, SPSS, S-PLUS
Attrition/Retention Models	Attrition models score customers with least likely to highly likely scores of leaving the company, or product category, or disease category, using categorization, likelihood, and probability models; Retention models are the complementary models of attrition; depending on the focus of the business problem, we directly use either retention model or a attrition model scores	Same as (1) with some additional advantage using internal data; an interesting twist here is that we will have data about those who are attriting and those who are not attriting; these variables which are coming from internal operations, are very powerful and need to be used along with other external socio demographic or purchase behavior data; SAS  Sometimes, because of the uneven distributions of data across various known influencing factors, we may want to do

		matched samples to model the response vs non-response.
Cross-Sell, Up-Sell, Lateral-sell models	To either move laterally across similar products, or move up to more appropriate product but more expensive with more offerings, or laterally sell services for the existing product the consumer is interested	Same as in (2); Of all the models discussed so far, it is typically much easier to build effective models of “lateral-sell” model. SAS and S-Plus
Profiling/Clustering/factor analysis	<p>Delineate the characteristics of potential customers, prospects, loyal customers, based on both previous campaign data and socio demographic data, whichever is available depending on the problems to solve.</p> <p>While most of the time we may be able to directly reduce the number of variables(drivers) from the long list of variables(drivers) that come with the data, it is possible that the drivers are defined by (linear) combinations of original variables and it is good enough to know these new drivers( some times it may be difficult to explain these new drivers) to classify and score customers.</p>	Generally these are multi-dimensionally related tabulations, for appropriately selected stratified samples. Note that the sampling type and frame will affect the interpretations of results.
Segmentation/Classification/Regression Trees	The purpose of these models is to find groups/segments that have propensity for better response if we make offers on either products, services, or for prospective selling. The idea is to find mutually exclusive and totally exhaustive of all customer groups	Similar to other

	<p>with likelihood (probability) estimates, sometimes with the estimate of average value of the groups.</p> <p>There is a huge class of models that could be explored for a specific usage, namely, continuous regression model, logistic regression model, classification methods, regression trees, neural networks, genetic algorithm</p>	
Life Time Value (LTV) models	<p>These are typically most sought after because it tells a marketer who is likely to be most valuable over a period of time vs others. However, the assumptions are stronger here.</p> <p>Typically we need data historically lot more compared to other models, so that we can model the past of similar groups of consumers and project the results for potential future years of the consumers. Finally summarize the value of the consumer as a present value calculation.</p> <p>This is the most ambitious of all models and typically large variance in the estimates of the future time periods and they are larger the higher the number of number of years need to be used for present value calculations</p>	

Prospective and Retrospective Models	While all the above models are retrospective, in the sense that categories of response are already known and we go back and identify the factors based on statistical considerations, the prospective models are able to proactively manage variations for test vs control from the beginning because we are able to assign matched experimental units to both test and control cells to optimize the power of the algorithm before the experiments start.	This brings in also, the ability to use matched control studies as a way to allocate data across test and control and to model the data.
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Ultimately all these models need to be translated to a single expected ROI metrics for each one of the customers or potential customers and hence to the entire organization, for all consumers who are expected to respond. ROI will involve the money planned to be spent vs money expected to be earned.

These calculations typically fall under expected revenue and expected profits models. These could be done for each one of the above categories of analysis. Translating these into a single measure for each of the consumer will drive our marketing decisions in terms of understanding those 20% of the customers who drive 80% of the revenue.

Follow the path of customer intelligence to reach the destination of profitable customer relationships.