***INTRODUCTION***

*Cablevisión’s Customer’s Voice Team conducts satisfaction surveys in order to evaluate customer’s perception of Internet service quality. In addition, it is provided by Technical Areas with information on CM equipment performance – Key Performance Indicators (KPI).*

***OBJECTIVE***

*Study the possibility of developing a forecasting model for CM fail, correlating Network KPIs with satisfaction surveys’ results in order to define a probabilistic process performance model (processes metrics under statistical control).*

*KPIs metrics analyzed:*

* *TX*
* *RX*
* *MER*
* *CER\_UP*
* *CER\_DS*
* *SNR*

***STRATEGY***

1. *Determine if there is a probabilistic model for CM fail forecasting, developed from the correlation between Network KPIs and satisfaction surveys on Internet service quality.*
2. *Define solid predictor/s of broad band performance.*
3. *Identify the levels by which customer perceives service problems.*

***ANALYTIC SOLUTION***

***Process Performance Model based on a Tree Decision***

*A probabilistic model of binary regression tree called Classification Regression Tree (CRT) which maximizes the predictors’ homogeneity inside each node resulting by each bifurcation.*

*CRT is a complete binary tree algorism that divides data and generates homogeneous subgroups applying* ***Bertlett’s Test for Equal Variances*** *(H0: σ1 = σ2). This way, CRT divides data in segments so that they are as homogeneous as possible regarding the contrasted dependant variable.*

***MAIN RESULTS***

***Decision Tree by Bad KPI’s measurements %.***

* *Today* ***38%*** *customers are dissatisfied with CM service stability.*
* *If Bad KPI’s measurements % corresponding to KPI* ***SNU\_UP*** *of a customer chosen by chance is greater than 20.42%, the probability that he is dissatisfied with CM service stability is 48.2%. If Bad KPI’s measurements % corresponding to KPI* ***SNU\_UP*** *rises to 77%, the probability that the customer is dissatisfied will increase to 52%.*
* *If we also look at Bad KPI’s measurements % in KPI* ***TX*** *of the same client, and it is greater than* ***2%, the probability that this client is dissatisfied rises to 67%.***



Agregarle al final del texto…. *diferencia significativa dicha proporción.*