

View Point



'Analyze This'

How Communication Service Providers can use Analytics to Combat Recession

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Introduction

In the wake of the global economic crisis, firms across industries and geographies have come under tremendous pressure to reduce costs. Most have responded by adopting a 'Capex Freeze' and 'Opex Reduction' mentality, which has been evident in their spending decisions, including those involving their outsourcing partners. Communication Service Providers (CSP) has been no exception!

While the value of outsourcing has never been in doubt, CSPs today are demanding more value 'per dollar of outsourcing spend' from their partners. There is a noticeable reluctance to commit on outsourcing investments unless the Return On Investment (ROI) is tangible and immediate. Against this backdrop, Analytics as a BPO service offering assumes significance, considering its potential to deliver quick and tangible Return On Investment (ROI) against relatively minor investments on the part of CSPs.

Addressing CSP Pain Points through Analytics

CSPs can combat the impact of recession on their margins in two ways

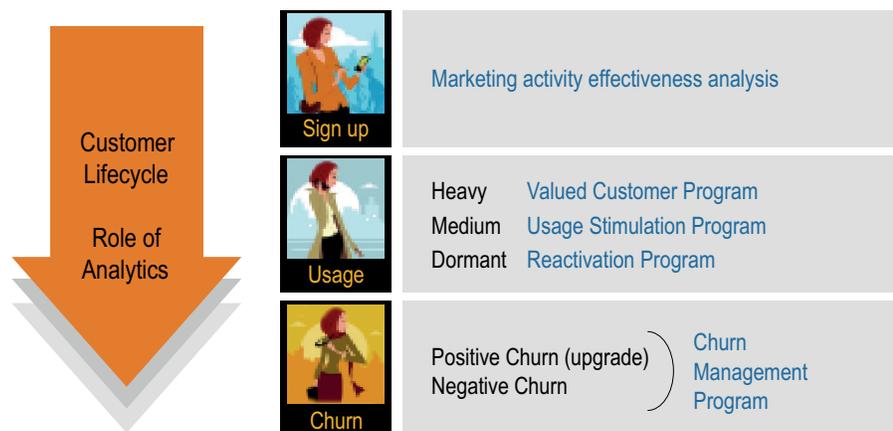
- Increasing Revenues
- Reducing costs

Analytics can enable CSPs to extract the maximum value out of their revenue maximization and cost reduction initiatives.

Using Analytics to Increase Revenues by reducing Churn

The entry of non traditional players to the CSP market and subsequent change in market dynamics, market saturation e.g. UK has more SIM cards than people and the continued drop in Average Revenue Per User (ARPU) had already made 'customer experience management' the number one priority for CSPs. Recession has served to further galvanize the efforts of CSPs in this regard. Analytics, through its ability to identify critical customer signals, can provide immense value add to CSPs in this regard. Interpreting these early warning signals can lead to devising of effective programs which will enable CSPs to offer positive 'customer experience' aiding increased loyalty and usage.

The scope of analytics spans across the entire CSP customer life cycle as depicted in the adjacent graphic. An area where it offers standout value is customer churn management. However, developing an effective churn management solution is not an easy task - as evidenced by 'customer churn' still being a primary pain point for CSPs, despite the existence of a large number of churn management solutions in the market.



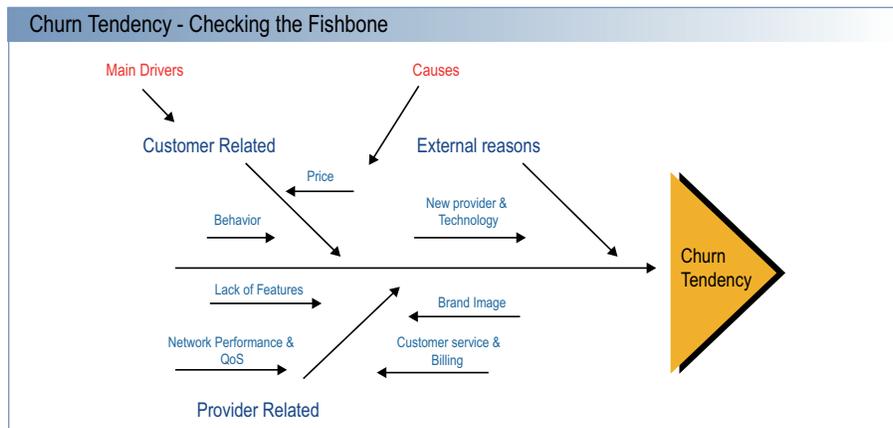
Developing an effective Churn Management Solution

There are a number of issues which creates road blocks in the development of an effective churn management solution. Data needs to be combined from various sources like billing systems, CRM tools, call centres, transaction data warehouses, etc. to get a holistic picture. This task is difficult as different types of data are usually captured in different data warehouses and in different formats. Added to this is the sheer magnitude of data that may need to be processed. Resource crunch from a skill set perspective (fewer resources with appropriate statistics/ operations research/econometric background), as well as a lack of resources that have a cross-

functional understanding of domain, data warehousing concepts and quantitative skills are also issues that often reduce the utility of the churn management solution created.

Domain competency is of utmost importance in this regard as the churn solution gets driven by the needs of the department that proposes it and this could result in key variables from other departments being ignored - unless the analytics practitioner has enough understanding of the industry nuances. Also, the current solutions have a tendency to club upgrades (positive attrition) and attritors (negative attritions) in the same bucket.

Identifying and quantifying those factors with the greatest impact on churn is only valuable if the root causes of these performance deficits can be identified and dealt with. A rigorous Root Cause Analysis can identify potential drivers of churn as shown in the below pictorial.



Experienced domain practitioners can then facilitate the generation of hypotheses through iterative sessions of brain storming that then capture business logic for testing through modeling. Hypothesis testing will enable the analytics practitioner to cull out the factors which are pertinent to churn.

#	Hypothesis	Example of Variable
1	Customers with higher Minutes of Usage are more likely to churn if the service quality is poor	Monthly Minutes of Usage
2	Frequent billing issues for a subscriber can increase churn rates	# of billing issues in a quarter
3	A subscriber who has signed up for more products/VAS with the CP is less likely to churn	# of products subscribed to
4	Lower number of dormant days in a month would mean lower churn	Days of dormancy in a month
5	A phone brand tie up with more features and higher product quality & service will cause lower churn	Phone brand subscribed to

Variable	Max Length	Field Type
DT_DY	8	Date
FLG_SRVC	1	Character
ID_PRI_CUS	19	Numeric
ID_TRN	14	Character
NUM_CO	8	Character
NUM_REG	8	Numeric
NUM_REG_OP	8	Numeric
NUM_STR	12	Numeric
MIN_USAGE	8	Numeric
TM_TRN	3	Numeric
TYP_TRN	4	Character

Analysis of Maximum Likelihood Estimates						
Parameter	DF	Estimate	Error	Chi-Square	P>Chi-Square	Exp(Est)
Intercept	1	-2.8415	0.2911	93.4595	<.0001	0.06
high_MoU100	1	1.3382	0.3564	14.055	0.0002	0.283
#_incorrect_billing2	1	1.1814	0.3285	12.938	0.0003	0.307
cross_products	1	0.8326	0.2746	9.1945	0.0024	2.299
dormancy_days10	1	0.7604	0.2595	8.5889	0.0033	2.139
phone_brand	1	3.9304	1.3566	8.3939	0.0038	50.925
zip_code	1	4.9303	1.7866	7.6156	0.0058	138.419

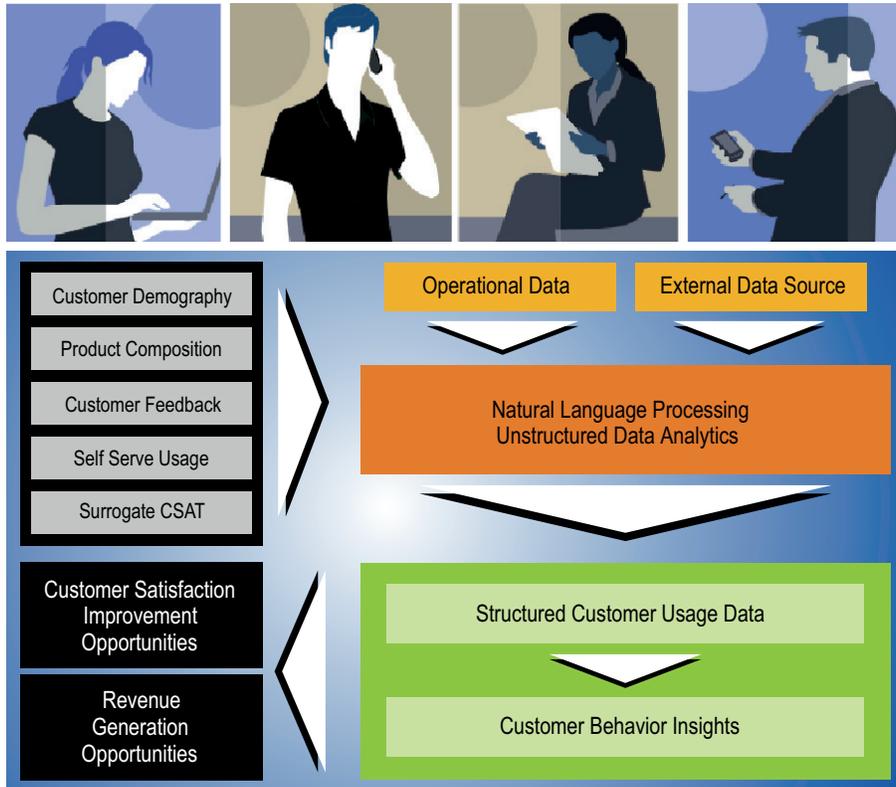
Generate hypothesis → Create derived variable for testing hypothesis → Validate hypothesis through model output

By comparing driver strengths, opportunities to improve service and satisfaction, pro-actively read early warning signals of churn can be prioritized. It would then be possible to advise CSP clients on measurable market programs to understand how effectively churn can be reduced for a given driver.

Increasing ARPU through 'Voice of Customer' Analytics

Every customer interaction is a rich source of information on customer experience and behavior. Leveraging this 'Voice of Customer' information, through the use of analytics, can help positively impact ARPU. Unfortunately, the unstructured nature of this information makes it very difficult to mine using ordinary analytical techniques. Analytic tools which can develop semantic insights from unstructured data by leveraging natural language processing capabilities are needed to provide real time intelligent analytics about customer experience and usage.

A natural language processing tool can be used to create an interactive interface for the customer care executive to gather information about the customer through an intuitive questionnaire during call progress. Using this surrogate information and other sources of information such as operational data, internet customer forums, blog sites etc, and a rich pool of information can be created which can be mined to get customer insights. The below pictorial explains the structure of a typical natural language processing tool.



Another major area where such a tool can come in handy is to glean customer insights from the vast amounts of unstructured customer data available in customer feedback forms, written complaints, blog comments etc. filtering the unstructured data by searching for specific phrases can be used to sensitize the telecommunications provider to pertinent customer signals.

The insights gained can be used in two ways:

- Target a customer segment, eg. fine tune market offerings for a customer segment based on real time customer feedback gained through this type of analytics tool
- Target individual customer, eg. Enhance Upsell/ cross sell opportunities during interaction of the customer with a customer care representative, create Just-in time marketing campaigns, etc.

Analytics and Cost Reduction

Surveys show that the 'recession inspired' cost reduction initiatives of most companies focus on large variable costs that have an immediate, significant impact (e.g., travel and entertainment, administrative staff, suspending capital investments etc). Unfortunately, as soon as external pressure drops, these costs tend to creep back into the cost base. Research shows that only initiatives that focus on 'reducing the cost of revenues' or on reducing system inefficiencies have a significant long term impact. Analytics can play a major role in reducing system inefficiencies and thereby Opex, by enabling CSPs to maximize the utilization of existing assets.

The work done by Infosys for the fleet management team of a US based global telecom giant is a case in point. The project involved use of analytics to drive down maintenance costs by extending the life of vehicle parts before they are replaced on fleet vehicles. The use of analytic techniques has enabled Infosys to predict the life expectancy of vehicle spares, thus helping the client to ensure that the spares are not replaced before their life time is over, resulting in savings to the tune of close to \$3 mn a year.

Moving up the Value chain - Analytics as a BPO Managed Service Offering

The one short-coming of the initiatives discussed so far is that ROI on the analytics investment made by a CSP depends entirely on how well they are able to implement the analytics solution. Execution flaws often come in the way of firms achieving the full potential of the analytics solution.

The way forward would be to develop analytics as an end-to-end service offering which would cover the entire spectrum of solution development, solution testing and subsequent solution sdelivery. Such an initiative would be of tremendous interest to CSPs as the risk of 'execution failure' is mitigated with the onus of successful analytics project implementation being passed on to the BPO partner.

CONCLUSION

In these recessionary times, when CSPs are combating tremendous margin pressures, initiatives which address the twin concern areas of 'increasing revenues' and 'reducing costs' will be of significant value. Analytics, with its potential to deliver quick and tangible Return On Investment (ROI) against relatively minor investments, assume considerable significance in this regard, all the more so if it is offered as an end-to-end managed service BPO offering, where the onus of ROI realization is transferred to the BPO partner.

About the Authors

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