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Public Communication Services Answers the Call for Fraud Prevention with KXEN



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KXEN Analytic Framework

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CATEGORY: Analytic Applications and Performance Management

REVIEWER: William Lay, director of information technology for Public Communication Services.

BACKGROUND: Public Communication Services (PCS) is a privately held California corporation whose principles have provided phone management services for commercial pay phones and government institutions, including inmate facilities, for 18 years. PCS manages all types of inmate telephone operations for facilities nationwide from its central office in Los Angeles, California.

PLATFORMS: KXEN Analytic Framework is used to generate predictive models trained on data within PCS's data warehouse which hosts 10 gigabytes of collect call and billing information. KXEN operates on Windows 2000 on a standard PC with 512MB. The data warehouse and PCS's proprietary scoring application use the MySQL RDBMS, Java and C++ applications on Linux.

PROBLEM SOLVED: Collect calls present a substantial credit risk. PCS essentially "loans" the amount for the cost of call to the recipient and waits for reimbursement when the call is billed. It takes approximately six months to identify an account that will not pay. Non-payment rates are in the double digits, compared to approximately seven percent in the cell phone business. Non-payment is a key cost driver for the company. Using the KXEN Analytic Framework to create a predictive model with more than three-dozen variables, a pattern was found and fraudulent customers identified. By analyzing historical data, it was determined that if KXEN had been deployed three years earlier, PCS's collect call non-payments would have decreased dramatically, and the company's profit margins would have realized an increase of 2.5 percent. Another problem facing PCS is the assurance that the local phone companies list the calls on the recipients' billing statements. Specifically, certain so-called competitive local

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exchange carriers (CLECs) will not accept these collect charges for billing. If these bills go uncollected, PCS is responsible for the cost of the call transport. After three months of implementation, KXEN has helped decrease the CLEC loss by 22 percent.

PRODUCT FUNCTIONALITY: PCS is using the Robust Regression (K2R) and the Consistent Coder (K2C) components of the KXEN Analytical Framework. New customers are scored in near-real time using the CLEC model with nine predictive variables. A second model scores the current customer base (400,000 customers) daily using 37 predictive variables to identify fraud risks.

STRENGTHS: Given that PCS was responsible for the outstanding charges for unpaid calls, rapid implementation was critical, particularly in the area of data preparation. The KXEN Analytic Framework was installed and implemented within weeks and the IT department

was able to focus its efforts on the scoring application rather than the highly non-trivial task of "massaging" data to feed a mining application. Ease of use is key. PCS is able to build models with as many variables as are necessary without having to make any assumptions, binning or encoding. The robustness of the models was also a selection factor.

WEAKNESSES: The product is limited in that it is not able to use other AI algorithms such as neural nets or trees. In addition, some of the esoteric features of the framework are not available through the wizard program, which resulted in the need to use KXEN's proprietary scripting language. However, the language is fairly intuitive and after one e-mail to the support team, the first script was quickly deployed.

SELECTION CRITERIA: PCS explored building its own proprietary modeling solution, but created a business case to turn to KXEN, proving that time to market and resulting cost savings would justify purchasing KXEN and deploying the initial models in a very short time period. The company researched other modeling companies; however, the time needed to learn the product was too intense given our need to implement and use the system within a short timeframe.

DELIVERABLES: PCS uses the model to generate C code that is integrated into PCS's proprietary behavioral scoring application. Also used are the canned HTML reports, those which are prefabricated through the KXEN wizard, for use with the management team to help them understand the key business drivers.

VENDOR SUPPORT: The support team at KXEN has been generous with guidance on the product and the entire modeling process.

DOCUMENTATION: More advanced product features are not outlined within the documentation.