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CUSTOMER CARE AT ETOTS.COM

Mike Yama, marketing manager at eTOTS.com—one of the world's leading online retailers—had recently accepted responsibility for all the company's customer-retention activities. This appointment represented something of a shift in focus for eTOTS. Up to that point in its brief history, the firm had spent almost all its marketing budget aggressively acquiring customers.

The company started in Holiday 1997 with mostly "word-of-mouth" promotion and banner ads. After meeting moderate success in the Holiday 1997 quarter (the Holiday quarter included October, November, and December), the firm enhanced its scalability by investing heavily in IT infrastructure and hiring specialized IT talent. The firm also signed its first partnership deals with major portals such as Yahoo! and AOL.

In 1999, the company hired a high-profile marketing executive to lead an effort to build the firm's brand through carefully crafted TV commercials and alliances with non-competing and well-recognized companies with similar target audiences. In the fall of 1999, the company also began building a data warehouse to augment its analytical and reporting capabilities.

In order to retain eTOTS's highest-value customers, in the spring of 2001, Yama began an initiative designed to deliver extraordinary customer service to a select group of customers. Those customers had become known internally as VIPs (very important persons), and most in the firm referred to Yama's initiative as the VIP program. This program involved the Customer Service department, Operations, and the IT department in addition to his own Marketing department. The scope of the agreed enhanced customer service included the following:

- Customer Service was to train customer service representatives (CSRs) about the existence of "different kinds of customers" and make sure the reps went "the extra mile" to satisfy selected high-value customers.
- Customer Service was to set up dedicated telephone lines and e-mail addresses to receive in-coming communications from these selected customers. The necessary enhancements included Customer Service's IT staff programming the call center so that calls to the

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This case was written by Ichiro Vic Shiraki (MBA '99), Professor Phillip E. Pfeifer, and Professor Paul W. Farris based on general experience. It was written as a basis for discussion rather than to illustrate effective or ineffective handling of an administrative situation. Almost all elements of this case are fictitious.

special numbers were routed to the top of the queue. In addition, embed routing logic was to be used to send these calls to the most experienced CSR on duty at the time the call was received. A visual "flag" on CSRs' consoles was also added to identify the caller as a VIP customer.

- Operations had committed to separating VIP orders and non-VIP orders in the warehouse, putting VIP orders on the top of the daily to-be-processed batch of orders and adding extra quality assurance steps to VIP orders. This enhancement required extensive programming work by the IT department.
- The IT department would make sure the whole "differentiated servicing" scheme worked seamlessly.
- The Marketing department, in cooperation with the Editorial department, was to compose special e-mail alerts and reminders for VIP customers making them aware of the special treatment available to them (high-priority and superior level customer service).
- Management decided not to communicate the extra quality assurance benefit to the VIP customers. After all, all orders are supposed to be handled well.

Short-term benefits from the VIP program were anticipated to include higher response (holiday repeat purchase) rates and higher spending from the customers selected to receive VIP treatment. Longer-term benefits included increased loyalty and profits from these high-value customers.

Although the firm had not yet conducted a formal economic evaluation of the program, a small-scale one-shot test on a similar enhancement program yielded a 2% incremental gain on repeat purchase rates and a 5% increase on spending for the previous holiday season.

The cost of the planned enhancements consisted of one-time fixed costs (IT enhancements, infrastructure improvements, and training) and variable costs (differentiated service and marketing).

Yama's next step was to come up with a scheme for identifying customers for VIP treatment. Obviously, not all customers should receive the enhanced service. Exactly how should he determine who "deserved" VIP treatment and who did not?

To help him construct a VIP identification scheme for the coming season (Holiday 2001), Yama thought it useful to try out candidate schemes using known Holiday 2000 purchase results. Taking advantage of the purchase records stored in eTOTS's data warehouse, he asked a marketing analyst to pull a random sample of 60,000 customers from the existing customer pool (of about 600,000 strong) as of September 1999. For all customers on the list, eTOTS had data on their one-year purchase history since then in addition to their purchase behavior for Holiday 2000 (October–December 2000). The data consisted of the following variables for each customer:

- Repeat purchase during Holiday 2000 (1 = Yes, 0 = No)
- MVA: Total monetary value of purchase during Holiday 2000
- Average order size during Holiday 1999
- Monetary value during Holiday 1999. (Dividing monetary value by average order size tells you how many orders the customer placed during Holiday 1999.)
- The same two variables for off-season 2000 (January–September)
- Recency: The number of months between the month of latest purchase and September 2000.
- Tenure: The number of months between the customer's joining month (the month of the customer's first order) and September 2000.
- S_IDX (Self Index): This was a measure of the percentage of orders the customer made for him- or herself. It was calculated as the ratio of the number of lifetime orders sent to the customer's billing address to the total number of lifetime orders.
- N_S_IDX: (Not Self Index): This was a measure of the percentage of orders the customer made for someone else. It was the ratio of the number of lifetime orders sent to a non-billing address to the total number of lifetime orders.
- Self: Defined to be one if the Self Index was one, and zero otherwise.
- Gift: Defined to be one if the Not Self Index was one, and zero otherwise.
- Joining-Month Variables: A series of 23 categorical variables designating the month of the customer's first order.

The idea was to use the data to build and test several candidate VIP designation schemes. The candidate VIP designation schemes could use information prior to Holiday 2000. The actual Holiday 2000 results would be used to test and compare the candidate schemes to determine which was best at identifying customers who purchased (and purchased a lot) during Holiday 2000. The "winning" scheme would be the one implemented in September of 2001 to identify VIPs for special treatment during Holiday 2001.

To further refine the project, Yama randomly split the 60,000 records into two halves. One half was to be used for scheme building, the other half for scheme testing. The scheme testing half was further divided into two files: one containing information on the 30,000 test customers prior to September 2000, and the other containing the Holiday 2000 purchase results for these same 30,000 test customers.

Table 1. Customer data.

File Name	Description of Contents
VIP Exercise Training Set (UVA-M-0649X1)	Complete data for the 30,000 customers in the training set.
VIP Exercise Decision Set (UVA-M-0649X2)	Data prior to September 2000 for the 30,000 customers in the test set.
VIP Exercise Secret Answers (UVA-M-0649TNX)	Holiday 2000 purchase data (0/1 repeat purchase variable and MVA) for the 30,000 customers in the test set (faculty only).

Exhibit 1 contains summary statistics for the data in the training set. **Exhibit 2** contains correlations among all variables in the training set. **Exhibit 3** contains summary statistics for the data in the decision set.

Yama saw several approaches to developing a VIP designation scheme:

- He might use a simple business rule. An RFM-based rule would be straightforward, easy to communicate to other departments, and easily accepted. But how effective would it be?
- He might build a statistical model using pre-holiday data to predict holiday results. He might do this himself or get some in-house help.
- He might turn to outside database marketing consultants to build a model and develop a designation scheme. This would be costly and would preclude the marketing department from learning more from the customer data. Also, handing out customer data to an outside vendor was tricky from a customer privacy standpoint.
- Finally, Yama might explore a more comprehensive and expensive solution—hiring a so-called “eCRM” consultant. These consultants promised to look at your customer data, build modeling procedures, and automate the customer relationship management process. Their solutions included customer segmentation, selection, and the delivery of differentiated treatment. They tended to recommend expensive IT solutions that might not be in eTOTS’s best interest. Hence, he would have to evaluate competing solutions very carefully. This solution was deemed infeasible for the short-term.

Exhibit 1

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Descriptive Statistics for Training Set

	Average	*Median*	*Minimum*	*Maximum*	*St. Dev.*
HOL_REP	0.333	0	0	1	0.471
HOL_MVAL	49.549	0	0	3718.31	127.895
S_99HOL	24.930	0	0	1191.54	51.949
M_VAL99H	46.492	0	0	4077.53	116.082
S_00OFF	11.370	0	0	1825.94	30.780
M_VAL00O	23.246	0	0	5477.82	84.369
REC	13.506	14	0	34	7.321
TENURE	18.952	21	12	34	4.066
S_IDX	0.636	1	0	1	0.433
N_S_IDX	0.362	0	0	1	0.433
Self	0.526	1	0	1	0.499
Gift	0.264	0	0	1	0.441
J_9711	0.002	0	0	1	0.049
J_9712	0.008	0	0	1	0.087
J_9801	0.001	0	0	1	0.032
J_9802	0.002	0	0	1	0.039
J_9803	0.004	0	0	1	0.065
J_9804	0.006	0	0	1	0.075
J_9805	0.003	0	0	1	0.051
J_9806	0.005	0	0	1	0.072
J_9807	0.006	0	0	1	0.078
J_9808	0.007	0	0	1	0.085
J_9809	0.012	0	0	1	0.107
J_9810	0.027	0	0	1	0.162
J_9811	0.149	0	0	1	0.356
J_9812	0.283	0	0	1	0.451
J_9901	0.040	0	0	1	0.196
J_9902	0.036	0	0	1	0.186
J_9903	0.055	0	0	1	0.228
J_9904	0.048	0	0	1	0.214
J_9905	0.061	0	0	1	0.239
J_9906	0.060	0	0	1	0.238
J_9907	0.060	0	0	1	0.237
J_9908	0.058	0	0	1	0.233
J_9909	0.068	0	0	1	0.252

Exhibit 2

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Correlations for Training Set

	HOL_REP	*HOL_MVAL*	*S_99HOL*	*M_VAL99H*	*S_00OFF*	*M_VAL00O*	*REC*	*TENURE*	*S_IDX*	*N_S_IDX*	*Self*	*Gift*
HOL_REP	1											
HOL_MVAL	0.548	1										
S_99HOL	0.311	0.340	1									
M_VAL99H	0.314	0.438	0.751	1								
S_00OFF	0.297	0.293	0.240	0.296	1							
M_VAL00O	0.267	0.337	0.215	0.360	0.741	1						
REC	-0.459	-0.310	-0.444	-0.407	-0.528	-0.424	1					
TENURE	-0.021	0.011	0.010	0.013	-0.047	-0.034	0.391	1				
S_IDX	-0.048	-0.034	-0.057	-0.049	-0.053	-0.043	0.053	-0.038	1			
N_S_IDX	0.051	0.036	0.059	0.051	0.055	0.044	-0.054	0.042	-0.994	1		
Self	-0.168	-0.126	-0.183	-0.186	-0.174	-0.158	0.248	-0.028	0.881	-0.881	1	
Gift	-0.074	-0.061	-0.075	-0.081	-0.068	-0.067	0.143	0.051	-0.882	0.882	-0.630	1
J_9711	-0.014	-0.005	-0.006	0.001	-0.004	-0.002	0.096	0.182	-0.063	0.064	-0.052	0.067
J_9712	-0.045	-0.023	-0.027	-0.026	-0.026	-0.021	0.189	0.304	-0.119	0.119	-0.093	0.124
J_9801	-0.016	-0.005	-0.012	-0.003	-0.006	0.013	0.065	0.103	-0.046	0.046	-0.034	0.047
J_9802	-0.022	-0.012	-0.016	-0.013	-0.011	-0.007	0.083	0.116	-0.053	0.053	-0.041	0.056
J_9803	-0.015	-0.015	-0.022	-0.011	-0.001	0.001	0.081	0.176	-0.032	0.032	-0.026	0.036
J_9804	-0.026	-0.016	-0.021	-0.018	-0.014	-0.010	0.097	0.187	0.005	-0.005	0.006	0.000
J_9805	-0.020	-0.009	-0.013	-0.011	-0.012	-0.009	0.068	0.114	-0.007	0.007	0.001	0.012
J_9806	-0.023	-0.013	-0.017	-0.010	-0.014	-0.003	0.080	0.144	0.013	-0.013	0.016	-0.007
J_9807	-0.005	-0.011	-0.001	-0.002	-0.002	0.000	0.036	0.137	0.010	-0.009	0.010	-0.010
J_9808	-0.009	-0.005	-0.010	-0.009	-0.003	-0.008	0.048	0.128	0.006	-0.006	0.007	-0.007
J_9809	-0.006	-0.008	-0.016	-0.009	-0.001	0.016	0.046	0.135	0.023	-0.022	0.014	-0.023
J_9810	0.015	0.004	-0.002	0.004	0.009	0.014	0.034	0.165	0.034	-0.033	0.014	-0.038
J_9811	0.043	0.047	0.050	0.059	0.006	0.004	0.052	0.313	0.063	-0.061	0.032	-0.070
J_9812	0.018	0.021	0.049	0.022	-0.037	-0.042	0.121	0.316	-0.037	0.040	-0.018	0.045
J_9901	-0.018	-0.006	-0.023	-0.014	-0.001	0.003	0.022	0.053	0.012	-0.011	0.020	0.000
J_9902	-0.010	-0.011	-0.017	-0.016	0.007	0.004	-0.002	0.002	0.013	-0.012	0.012	-0.008
J_9903	-0.013	-0.006	-0.021	-0.021	-0.001	0.001	-0.011	-0.056	-0.004	-0.006	0.010	0.001
J_9904	-0.010	0.000	-0.019	-0.005	0.009	0.014	-0.036	-0.108	0.002	-0.002	0.000	-0.006
J_9905	-0.021	-0.016	-0.019	-0.018	0.006	0.000	-0.055	-0.185	0.008	-0.007	0.007	-0.003
J_9906	-0.015	-0.017	-0.019	-0.021	0.007	0.006	-0.080	-0.246	0.003	-0.001	0.002	-0.006
J_9907	0.001	-0.010	-0.012	-0.016	0.012	0.010	-0.110	-0.307	0.000	0.001	-0.001	-0.003
J_9908	0.011	-0.008	-0.001	-0.004	0.019	0.017	-0.139	-0.362	-0.017	0.012	-0.025	-0.001
J_9909	0.015	-0.006	0.001	0.007	0.026	0.020	-0.167	-0.463	0.000	-0.001	0.000	-0.001

Exhibit 3

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Descriptive Statistics for Decision Set

	Average	*Median*	*Minimum*	*Maximum*	*St. Dev.*
S_99HOL	24.525	0	0	956.78	49.430
M_VAL99H	46.449	0	0	10153.02	136.402
S_00OFF	11.183	0	0	452.94	28.893
M_VAL00O	22.699	0	0	3393.72	79.160
REC	13.547	14	0	34	7.289
TENURE	18.919	21	12	34	4.050
S_IDX	0.636	1	0	1	0.432
N_S_IDX	0.361	0	0	1	0.432
Self	0.525	1	0	1	0.499
Gift	0.262	0	0	1	0.440
J_9711	0.002	0	0	1	0.044
J_9712	0.007	0	0	1	0.084
J_9801	0.001	0	0	1	0.033
J_9802	0.002	0	0	1	0.040
J_9803	0.003	0	0	1	0.056
J_9804	0.005	0	0	1	0.073
J_9805	0.004	0	0	1	0.064
J_9806	0.005	0	0	1	0.069
J_9807	0.005	0	0	1	0.072
J_9808	0.008	0	0	1	0.089
J_9809	0.011	0	0	1	0.104
J_9810	0.029	0	0	1	0.167
J_9811	0.150	0	0	1	0.357
J_9812	0.282	0	0	1	0.450
J_9901	0.039	0	0	1	0.193
J_9902	0.038	0	0	1	0.190
J_9903	0.053	0	0	1	0.225
J_9904	0.049	0	0	1	0.216
J_9905	0.059	0	0	1	0.235
J_9906	0.060	0	0	1	0.237
J_9907	0.059	0	0	1	0.235
J_9908	0.060	0	0	1	0.237
J_9909	0.071	0	0	1	0.256