



**Randy Collica**  
Senior Business Analyst

# MORE THAN GOLD

HP soaring to the next level of CRM with SAS®

## Industry

Manufacturing

## Business Issue

Analyze large sets of text data to find out more about customer attitudes.

## Solution

SAS® Text Miner

## Benefits

Combines analytical strength with the ability to turn textual data into intelligence, creating a gold mine of marketing opportunities.

Randy Collica goes digging for gold every day. But he's no grizzled prospector; he's mining a different type of gold – one that's even more valuable: text.

That's right – text. Those big golden chunks of customer comments reflecting their desires, opinions, interests and needs, all buried in one form or another across the company. Whether it's in the e-mail documentation from HP's call center or in the thousands of messages hand-scribbled on warranty and product forms, HP strikes the mother lode of data mining by making better decisions based on what customers want and expect in the products and services they need. Now with SAS text mining, HP can reveal real customer attitudes – the nuances that no survey form can ever glean – to take customer relationship management to an entirely new and next-generation level.

“Until recently, we hadn't been able to combine revenue and product data from our customer data warehouse with the textual information received through our call center,” says Collica, Senior Business Analyst at HP. “Now we have the capability of putting those things together so that we not only understand the demographics and revenue data about our customers, but also we have this communication piece that allows us to do greater things with business intelligence and data mining.”

E-mail, customer surveys, warranty claims forms and feedback – there's no time to read everything, much less examine and classify the documents to extract the most essential bits of information.

The database for HP's call center alone contains 300,000 records and is growing every day. Using SAS Text Miner software – a rich suite of text processing and analysis tools – HP is able to:

- Uncover underlying themes or concepts contained in large document collections.
- Automatically group documents into topical clusters.
- Classify documents into predefined categories.
- Integrate text data with structured data to enrich predictive modeling endeavors.
- Base marketing and other business decisions on insightful customer information.



“In the past, we lacked the ability to make much sense of the influx of data,” Collica says. “With the volume of notes we have, if you're talking about physically reading each one for analysis purposes, it'd be like reading more than 500 copies of *War and Peace*. There's just no way any one person can do that. SAS has made it easy to make sense of the data, which we simply weren't able to do before.”

“SAS is the premier data mining solution, and now it gives me the ability to analyze my textual data at the same time. That is very powerful, and I don’t think it’s duplicated anywhere else.”

**Randy Collica**

Senior Business Analyst  
HP

**95 percent accuracy**

HP is the \$81.7 billion company that resulted from the 2002 merger of Hewlett-Packard and Compaq, which included the Tandem and Digital brands. Yet the products of the two individual companies remain in use around the world – with millions of users who need support but are open to up-selling opportunities. In short, the new company needed to know exactly which products its customers owned in order to build successful categories and strategies for consumer-centric marketing campaigns.

“Organizing those items into like categories is a very daunting task, especially when you have a million product numbers across four different former brands to deal with,” Collica explains. “Text mining allows us to take all the product information at different levels of the hierarchy – product descriptions, descriptions of product levels, the family description and so forth – and put them all together to predict which categories products should fall into. Otherwise, we’d have to do it manually, which would take a whole team of people. With SAS, our summer intern did it with 95 percent accuracy.”

Before turning to SAS for text mining, Collica and his colleagues worked on product classifications periodically, poring over data that, if they didn’t understand, they had to research.

“We’re not product experts,” Collica explains. “Before, it would take me several hours to research new products coming in just to know what bucket to categorize them in, but now I probably spend only 20 minutes about once a month to do this. It’s all automated, so now I can easily take the new SKU numbers and throw them into SAS Text Miner. It classifies them for me, so I don’t spend hours doing unnecessary research.”

**Automating warranty analysis**

HP’s engineers in the imaging and printer division are now working with Collica to implement a SAS text mining application that will get to the heart of warranty claims and identify issues or concerns faster than ever before. Historically, they have received handwritten notes from customers all over the world who were making warranty inquiries – say, for a printer that kept jamming – and they had to pore over these notes manually to make sure the issues were addressed.

“They were spending a lot of time reviewing the information – way too much time for them to find the useful information that they needed,” Collica says. “With SAS, they use a small group of analysts to find certain trends or clusters of specific problems and feed that information back to the engineering communities and product managers. Once they’ve got

everything categorized in a meaningful way, they are hoping that the new application will allow them to create predictive models that will flag something for special attention.”

**Mining the Web**

Ultimately, says Collica, HP’s ability to identify and retain customers better through text mining will help generate financial returns.

“We’re already digging deeper into our customer analysis that we weren’t doing before – finding out things about customer attitudes that we simply couldn’t have known without SAS,” Collica says. “There’s definitely value in that. There are a lot of customers out there; we want to keep them happy and satisfied.”

In the near future, Collica hopes HP will be using SAS to collect customer information from across the entire World Wide Web. “The Web contains an awful lot about our existing customers and customer prospects that we don’t have in our warehouse,” Collica explains. “With SAS, we will be positioned to analyze existing and new information better than our competition can analyze their data. SAS is the premier data mining solution, and now it gives me the ability to analyze my textual data at the same time. That is very powerful, and I don’t think it’s duplicated anywhere else.”



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