

# A Case Study in Applied Social Marketing: Developing an Occupational Safety and Health Product

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## ABSTRACT

This case study provides an example of how social marketing was applied to meet the needs of business customers. Federal regulations require that all companies develop a written program to track hazardous chemicals at their sites. The *HazComWriter*, created by the National Institute for Occupational Safety and Health (NIOSH), is a software tool designed to help companies prepare their required Hazard Communications (HazCom) written plan and list all hazardous chemicals at the company's worksite. The social marketing goal was to provide a product for small- to medium-sized companies to use for federal HazCom rule compliance. The *HazComWriter* is a direct NIOSH response to customer and stakeholder needs (including the Mine Safety and Health Administration, the mining community, and Occupational Safety and Health Administration-regulated companies).

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The identification and labeling of hazardous chemicals in the work place is an important step in protecting workers. The Mine Safety and Health Administration (MSHA) Rule 30 CFR Part 47 and the Occupational Safety and Health Administration (OSHA) Rule 29 CFR 1910.1200 (also known as the HazCom rules) require all companies to develop a written program to track hazardous

chemicals at their sites. More specifically, the rule requires that companies list all chemicals and determine which are hazardous; develop a written hazard communication program; label all containers used to store hazardous chemicals; obtain or develop Material Safety Data Sheets (MSDS) for all chemicals stored or produced; provide workers with training in working around hazardous chemicals; and make information about hazardous chemicals available to all workers.

Social marketing is defined as “the planning and implementation of programs designed to bring about social change using concepts from commercial marketing” (SMI 2008). Social marketing relies on the 4 Ps of marketing: product, place, price, and promotion (Schroer 2008). This article describes how social marketing-based research was effectively used to develop, test, and market a new compliance tool, the *HazComWriter*.

### **Formative Research**

By March 21, 2003, all mines in the United States were required to be in compliance with MSHA Rule, 30 CFR, Part 47. This new rule required mines to list all chemicals and determine which are hazardous, develop a written Hazard Communication Program, label all containers used to store hazardous chemicals, obtain or develop Material Safety Data Sheets (MSDSs) for all chemicals stored or produced, provide workers with training in working around hazardous chemicals, and make information about hazardous chemicals available to all workers. Prior to that deadline, NIOSH personnel met with representatives from several mining companies and MSHA to discuss what could be done to help companies comply. Their findings indicated that small- to medium-sized mining companies would have more difficulty with the new rule because they lacked the expertise and resources to prepare a compliant written HazCom document. As a result, the *HazCom Helper-MSHA-version* (Scott, Drake, and Brady 2003a, b) was developed.

One of the roles of social marketing research is to identify how the consumer perceives the problem and the product. NIOSH compiled a list of all the companies that either downloaded or requested CDs of the *HazCom Helper-MSHA-version*. The results showed that about 40% of all requests were from nonmining companies. Therefore, NIOSH developed the *HazCom Helper-OSHA version* (Scott, Drake, and Brandy 2005a, b) to meet this need. In 2006, the OSHA version was recognized by NIOSH as the best “educational materials product” and received an Alice Hamilton Award, one of the most prestigious awards given by the agency.

Additional social marketing data were gathered via one-page evaluations (Appendix) that were included with requests for CD versions of both products.

Customers were given an opportunity to evaluate the user friendliness, whether or not they had a HazCom plan prior to obtaining the *HazCom Helper*, how they found out about the product, and the usefulness of the product. Based on this customer feedback, NIOSH personnel determined that improvements were needed for overall design and appearance, functionality (e.g., need for sorting routines), added utilities (e.g., button-driven menus), user-friendliness, and product packaging. NIOSH personnel added these improvements and combined both versions into one final product, a user-friendly software tool, the *HazComWriter* (Scott 2007a, b), which satisfies both OSHA and MSHA rule requirements.

Feedback from the *HazCom Helper* (both versions) also included the following testimonials:

- “Good product. We had a program, but used the *HazCom Helper* to enhance what we already had.”
- “Very useful and beneficial to operators.”
- “I am glad I found your program, it has made this step much easier for me.”
- “I have looked at the NIOSH *HazCom Helper*. It is slick and helpful for the in-plant hazard communications program, especially for small businesses.”

### **Product Development and Description**

Three levels of the final product were identified. The core product (benefit) helps companies avoid costly MSHA or OSHA fines and penalties from noncompliance. The actual product (behavior) allows companies to use appropriate software to develop a HazCom plan. Finally, the augmented product (tangible object or service) is the *HazComWriter* software.

An attractive name and logo were needed for the final product. The name had to be similar to the *HazCom Helper* to maintain continuity and name recognition within the customer base, yet distinctly different. NIOSH personnel decided on *HazComWriter* because the software allowed the user to actually write a HazCom document. The red, orange, and brown logo (Figure 1) was created to provide marketing appeal by making it easy to recognize since no logo had been created for the earlier versions of the *HazCom Helper*.

The *HazComWriter* helps the preparer understand what information needs to be included in his or her HazCom plan and helps the individual(s) identify which chemicals are considered hazardous. The software includes prompts, suggestions, and help menus to lead the preparer step-by-step through the process of creating a HazCom plan. A list of all hazardous chemicals required by both MSHA and

FIGURE 1

## HazComWriter Logo



OSHA rules at a site can be entered (Figure 2), and the list can be saved and edited when necessary. This list is important to worker safety because it identifies and lists all hazardous chemicals at a worksite.

Some of the *HazComWriter* features added as a result of customer feedback included:

1. The list of hazardous chemicals can be stored in a spreadsheet.
2. User friendliness (i.e., the format is easier understand).
3. Support for both print preview and print utilities.

FIGURE 2

## Appendix A (List of Hazardous Chemicals)

**Chemical List**

File Entry Help

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**Entry**

Name:

CAS No.:

Manufacturer:

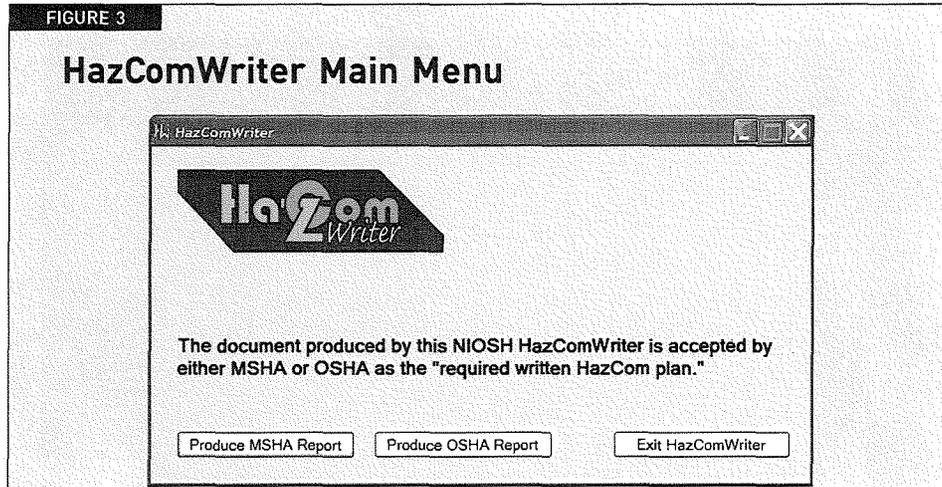
Location:

Amount Used:  Period:

**Edit**

Name	CAS No.	Manufacturer	Location	Amount Used	Period
Sulfuric acid	7664-93-9	Brainerd Chem. Co.	Chem lab	1 quart	year
WD-40	8052-41-3	WD-40 Company	Machine shop	1 gallon	month
Xanthate	143037-51-8	Chemtec	Mill	*5,000 gallo...	year
Gasoline	1330-20-7	Shell Oil Co.	Fuel depot	*50,000 gallo...	year
Propane	106-94-5	Daxol	Storage tank	*5,000 gallo...	year
Windex	111-76-2	SC Johnson & Son	Office/maintenance shop	2 gallons	month
Stoddard solvent	8052-41-3	Baxter Healthcare Group	Machine shop	5 gallons	month
Diesel fuel	68478-34-6	Sinclair Oil Corp.	Fuel depot	*6,000 gallo...	month
Dodecyl mercaptan	25103-68-6	Alfa Chem	Mill	400 gallons	month
Defoamer	64742-56-9	Calgon Corp.	Mill	500 gallons	month
Flocculant	64742-47-8	Great Western Chem. Co.	Mill	*1,000 gallo...	year
Sodium cyanide	143-33-0	Nash-Tech, Corp.	Mill	*10,000 gallo...	month

FIGURE 3



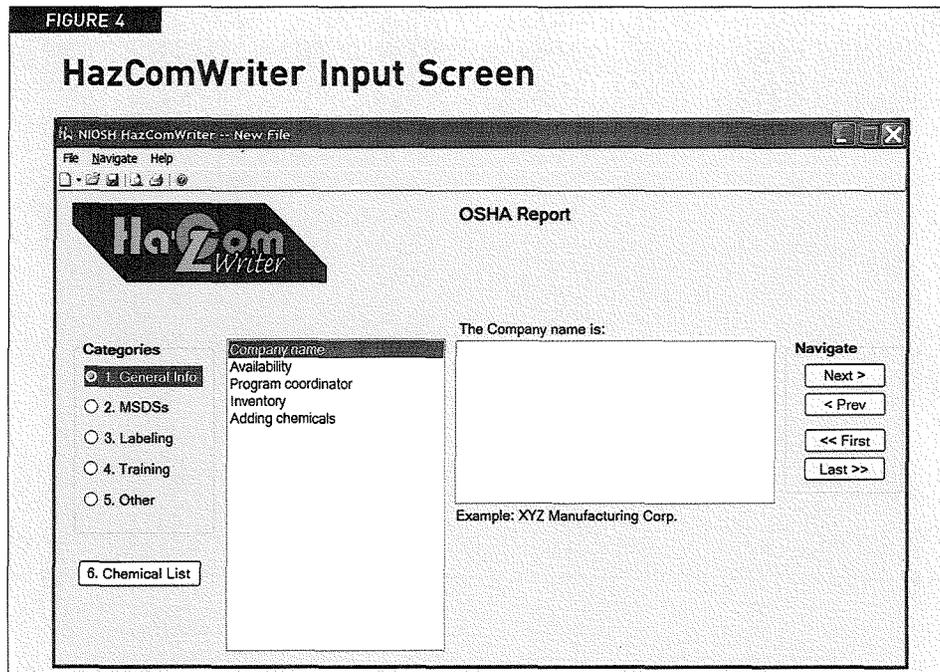
4. Easy navigational utilities.
5. A sort utility to rearrange the chemical list created by the user, Chemical Abstract Service (CAS) number, manufacturer, or location.
6. Functions to add/delete/edit data in either the hazardous chemicals list or the main part of the written program.

Figure 3 shows the *HazComWriter* Main Menu, and Figure 4 is an example of one of the input screens.

The following *HazComWriter* input parameters are included in the software and are important because they can be customized, based on MSHA and OSHA requirements, and can provide space for detailed information.

- **General information** (organization name, location of written plan, program coordinator, inventory, adding chemicals).
- **Labeling information** (labeling containers, secondary containers, help with labeling, labeling system, in-house labeling, reviewing labeling procedures, review how often, responsible for chemical pipes).
- **MSDS information** (review MSDSs, new chemical procedure, where MSDSs are kept, no MSDS on file, alternate location, replace outdated MSDSs).
- **Training information** (training format, nonroutine tasks, initial training).
- **Other information** (informing contractors, information to contractors).
- **Appendix A (list of hazardous chemicals)** (chemical name, chemical manufacturer's name, CAS number, location of chemical, amount of chemical used per time period).

FIGURE 4



The primary benefit of this product is to assist companies in developing a HazCom written plan. In turn, this benefit helps companies avoid costly fines and penalties resulting from noncompliance with MSHA or OSHA regulations and ultimately protecting the health and safety of workers. Other benefits of using the NIOSH *HazComWriter*, include:

- Reduced administrative burden in preparation of the written document.
- Improved quality of the written document.
- Increased worker awareness of hazardous chemicals in the workplace.
- Assurance that the written plan will meet either MSHA or OSHA standards.

### Dissemination and Feedback

The *HazComWriter* has been promoted at major health and safety conferences and demonstrated at several regional workshops organized by professional associations including the Society of Petroleum Engineers (SPE), the Society for Mining, Metallurgy, and Exploration, (SME), and MSHA. In addition, three separate NIOSH Technology News bulletins (numbers 503, 510, and 524) were mailed to hundreds of companies. Each of these bulletins is available at NIOSH

FIGURE 5

## HazComWriter Poster

you need a hazard communications plan...

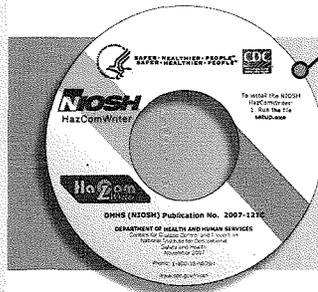
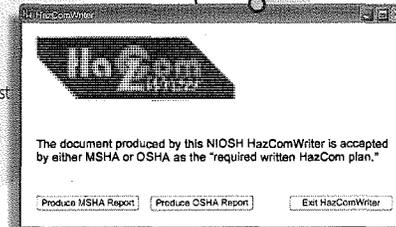
we have your solution

Introducing the HazComWriter. NIOSH's first dually-compliant hazard communications software package.

# HazComWriter

### features

- OSHA & MSHA compliant
- easy-to-use
- fast
- sortable chemical list
- and...free!



available in November 2007

for more information:

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**NIOSH**



mining program's website as well (<http://www.cdc.gov/niosh/mining/pubs/technewspubs.htm>). Figure 5 is the NIOSH poster created for promotion of the *HazComWriter* at conferences and workshops.

Users of the *HazCom Helper* (both versions) and the *HazComWriter* include: companies (mining, pharmaceutical, and environmental), MSHA trainers, contractors (landscaping and safety training), consultants (risk management), universities, hospitals, and forensic pathologists. More than 4,000 *HazCom Helper* CDs

(both versions combined) have been requested and distributed and more than 1,000 copies downloaded from the NIOSH website. More than 500 copies of the *HazComWriter* have been distributed as CDs at conferences, requested from NIOSH, or downloaded in the last quarter of 2007.

NIOSH received both solicited and unsolicited feedback on the *HazCom Helper* (both versions) and found that: 1) all companies that requested the *HazCom Helper* already had a written HazCom plan; 2) most responders used the *HazCom Helper* to develop a new written HazCom plan; 3) most responders rated the *HazCom Helper* as easy to use; and 4) most responders rated the *HazCom Helper* very useful as a tool to comply with the HazCom compliance regulations.

Because the *HazComWriter* was developed with federal funds, the product is free to the consumer. Customers may order a copy of the *HazComWriter* CD from NIOSH or download the product from the NIOSH mining program's website: <http://www.cdc.gov/niosh/mining/products/product153.htm>

### **Summary**

Based on feedback from customers and stakeholders, the MSHA and OSHA versions of NIOSH's *HazCom Helper* were combined into one easy-to-use software tool, the *HazComWriter*. While the new version includes all applications of the earlier *HazCom Helper*, several new features are now available in the *HazComWriter*, most notably, the ability to generate and store chemical lists in a spreadsheet format, as well as a sorting function for the chemical list.

The social marketing goal of this project was to provide a product for small- to medium-sized companies to meet federal HazCom rule compliance requirements and ultimately protect workers from hazardous chemicals. The success of the *HazComWriter* is a result of NIOSH effectively using a social marketing approach to identify a gap in the industry, work with government agencies and customers to recognize the need for a product, develop a product, and market the product to targeted consumers.

## References

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## Appendix

### Evaluation of HazCom Helper-MSHA Version

1. Did you have a written HazCom plan before you used the HazCom Helper?

1 YES 2 NO

2. Did you use the HazCom Helper to develop a written HazCom plan?

1 YES 2 NO

3. Why or why not?

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4. What commodity do you mine?

1 SAND/GRAVEL

2 COAL

3 METAL

4 STONE

5 OTHER: \_\_\_\_\_

5. Rate the "user friendliness" of the HazCom Helper.
- 1 EASY
  - 2 MODERATE
  - 3 DIFFICULT
6. How did you find out about the HazCom Helper?
- 1 MSHA WORKSHOP
  - 2 CONFERENCE
  - 3 NIOSH WEBSITE
  - 4 MSHA WEBSITE
  - 5 COLLEAGUE
  - 6 OTHER: \_\_\_\_\_
7. How useful was the HazCom Helper in helping your mine comply with the MSHA Rule 30 CFR Part 47?
- 1 NOT AT ALL
  - 2 SOMEWHAT
  - 3 MODERATELY
  - 4 VERY
8. Is there anything else you would like to tell us about the HazCom Helper?

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