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(Vol.50, No.3—3/02 Pub.520)

AN EVALUATION OF THE USEFULNESS OF WEB-BASED FINANCIAL AND ENVIRONMENTAL PERFORMANCE INFORMATION PROVIDED BY OIL AND GAS COMPANIES

Kathryn A. S. Lancaster, Ph.D., CPA

Carolyn A. Strand, Ph.D., CPA

Janice Carr, Ph.D., CPA*

Introduction

Environmentally conscious investors require financial information in addition to environmental information to evaluate a company's performance. Sources of such information include organizations that specialize in providing environmental performance data, such as the Council on Economic Priorities (CEP) or the Investor Responsibility Research Center (IRRC). Both of these organizations research, evaluate, and rank companies based on a variety of metrics, and both charge for their service. Through company websites, the Internet offers another potential source of information, since most companies have a "web presence." However, information supplied on a company website has the risk of bias (i.e. the website may be a marketing tool for the company). This potential bias leads to the question of whether information provided by firms is sufficient for an environmentally conscious investor to make an informed decision.

* The authors are, respectively, Associate Professor at California Polytechnic State University, Assistant Professor at Seattle Pacific University, and Associate Professor at California Polytechnic State University.

The present study examines company websites because of the increased probability that investors will seek information from this source during their decision process. The authors believe this is the case because most large companies now have a website with increasing amounts of financial information. In a survey of more than 4,000 decision-makers, dotcom.com found that the majority of businesses with a registered website are existing companies who are developing an on-line presence to attract new customers and to improve customer relations (Anonymous 2000a). Nielsen/NetRatings report that there were an estimated 148 million Internet users in September, 2000. The typical user is a white, 33 year old male with an annual household income of $66,916 and some college education (Nielsen/NetRatings 2000; and Anonymous 2000b). Another study reports that Internet use by minorities, females, and the elderly is on the rise (Anonymous 2000c). It is likely that more people will use the Internet to conduct research on company performance when making investment decisions.

This study focuses on firms in the oil and gas extraction and production industry for several reasons. Although oil and gas companies may not be every environmentally conscious investor's first choice, several of these companies are repositioning themselves as energy-producing firms to broaden their business base. For example, one of BP Amoco's subsidiaries claims to be the world's largest manufacturer of solar electric panels and systems. Also, if oil and gas firms have "good news" (i.e., environmentally responsible with external validity), they should be more likely to include a discussion about their environmental performance on their website. In addition, oil and gas firms currently represent a very desirable investment option due to their favorable stock prices. Taken together, these factors might make investment in the oil and gas industry an interesting choice to the environmentally conscious investor.

The following section provides a review of the literature on Internet financial reporting (IFR) in general, and then specifically for the oil and gas industry. The next section describes the study and the results. The last section discusses the results and provides specific guidance for more responsible and complete IFR for the oil and gas industry, particularly relating to environmental disclosures on corporate websites.

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Literature Review

Louwers et al. (1998) described a high-quality website as one that has *quality of information* (breadth, depth, frequency, and timeliness) and *accessibility of information* (financial information that is easy to find). Breadth refers to the mixture and completeness of information. Specifically, the site should offer highlights of financial information, the full financial report, downloadable data, and charts. Depth refers to the number of periods of historical information the site covers, and any explanation of the financial data. A link to the U.S. Securities and Exchange Commission's (SEC's) EDGAR site would be considered helpful. Third, frequency of updates and the number of times information is conveyed in a given period is desirable in a high-quality website. For example, some companies provide monthly financial data, some quarterly data, and others provide only annual data. To be timely, the data must be up-to-date.

Louwers et al. (1998) note that some companies put financial data on their website as soon as it is available, and others make the data available only after the published annual reports are mailed. Information that is easy to access means that the user can quickly and easily locate the financial information on the company website; that is, the financials are only a few clicks from the company's home page. A menu down the left-hand side or on top greatly improves both the accessibility and usability of the site.

Ashbaugh et al. (1999) evaluated 290 firms across seven industries to determine whether they maintain a website and the extent to which firms practice IFR. They searched the Internet between November 1997 and January 1998 and conclude that 253 firms had an Internet presence. Seventy percent of the firms with websites provide either (1) a comprehensive set of financial statements, (2) a link to their annual report housed on a third party site, or (3) a link to the SEC EDGAR system. Ashbaugh et al. (1999) also asked survey participants why they engage in IFR. The respondents indicated the key objective was to communicate to current and prospective investors. To conclude, Ashbaugh et al. found a great deal of variation in the quality (the timeliness of financial disclosures) of information and in the usefulness (ease of access, amount of data disclosed, and ability to analyze data) of firms' IFR practices. The results also suggest that firms are more likely to

have an Internet presence if they are larger and more profitable, which is predictable given the cost of designing, implementing, and maintaining a website.

Kreuze et al. (1996) analyzed the 1991 annual reports of 645 Forbes 500 corporations to determine the extent of environmental disclosures in annual reports. These authors found that 73 percent of the firms did not disclose environmental issues anywhere in the annual report. A 1992 survey by then Price Waterhouse (PW) reported that 62 percent of the respondents with known environmental liability exposures failed to report these liabilities in their financial reports (PW 1992; Surma and Vondra 1992). A similar survey by PW in 1994 concludes that a greater number of respondents accrued environmental liabilities (and recognize them earlier, during, or upon completion of the Remedial Investigation and Feasibility Study) than they acknowledged in 1992.

Ernst and Young Consulting (1999) analyzed the websites of the top global oil and gas companies. Their analysis suggests that most companies provide financial, product, service, and community service information. However, this study does not report sufficient details of these categories of information to be helpful to investors.

The present study expands upon these earlier studies by reporting on the IFR practices of oil and gas firms to determine whether companies in the oil and gas industry report a sufficient amount of data on both financial and environmental performance to satisfy the environmentally conscious investor's need for information. This study examines environmental performance disclosures to determine whether firms disclose their environmental performance records and whether firms with better environmental responsibility records are more likely to include environmental information on their website. This study also explores the possibility that larger firms may have a higher quality website with greater availability of financial information. Given the cost of designing, implementing, and maintaining a website, the authors suspect that this might be an issue to consider.

Description of Study

Sample

Firms for this study were selected from the most recent Council on Economic Priorities (CEP, dated 1998) ranking as

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to environmental performance of petroleum refineries and the Investor Responsibility Research Center (IRRC, dated 1996) list of S&P 500 firms that belong to the petroleum (oil and gas) industry. This resulted in an initial list of 27 firms. Between 1996/1997 (CEP and IRRC data) and the date the websites were accessed for this study (2000), a number of mergers had occurred in the oil and gas industry. The result of these mergers reduces the sample size to 18 firms. These firms, with their website URLs and respective CEP and IRRC rankings, are identified in Table 1. In both cases, a ranking of 1 denotes the company with the best environmental performance.

Table 1
Sample Company Names and Environmental Ranking

Company Name	Website	CEP Ranking*	IRRC Ranking**
Amerada Hess	www.hess.com	12	5
Amoco	www.bp.com	4, 6, 15	2
Ashland, Inc.	www.ashland.com	5	9
Baker-Hughes Inc	www.bakerhughes.com		6
Burlington Resources, Inc.	www.br-inc.com		3
Chevron	www.chevron.com	3	15
Coastal Corporation	www.coastalcorp.com	14	8
Enron Corporation	www.enron.com		1
Exxon Mobil	www.exxonmobil.com	2, 8	10, 12
Kerr-McGee Corporation	www.kerr-mcgee.com		17
Occidental Petroleum Corporation	www.oxy.com		4
Phillips Petroleum Company	www.phillips66.com	13	14
Shell Oil Company	www.shell.com	9	
Sunoco Company Inc.	www.sunoco.com	1	16
Texaco Corporation	www.texaco.com	11	11
Tosco Corporation	www.tosco.com	10	
Unocal Corporation	www.unocal.com		7
USX Marathon Group	www.marathon.com	7	13

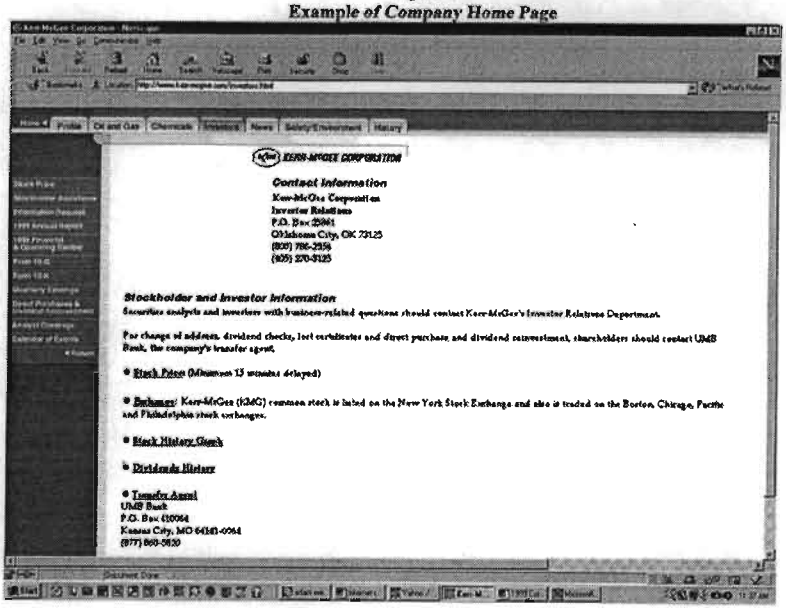
*The CEP was selected because it calculates a score for each firm, which is based on their environmental impact (60 percent); their environmental management systems and policy (30 percent); and on their environmental reporting and communications (10 percent). This score is used to rank firms in a particular industry. Investors may purchase this ranking as part of a research report published by the CEP.

**The IRRC Compliance Index is an important source of information because it normalizes the total cost of penalties shown for all the environmental statutes in a single year. The index reflects the relative amount of resources spent on environmental penalties. The IRRC Index is an important source of information due to the comprehensive nature of the data, the in-depth analysis on fines assessed, a description of the number of Superfund sites the company is involved in, and waste generated with respect to various measures.

Methodology

Each firm's website was accessed during the last two weeks of October, 2000. The authors evaluated the site of each of the 18 sample firms to examine the financial and environmental performance that is reported. This evaluation was conducted using the categories identified by Louwers et al. (1998): breadth, depth, frequency, timeliness, and accessibility. An example of a company website is provided in Figure 1. The accessibility of Kerr McGee's was enhanced by both the major section tabs along the top of the page and the subsection buttons down the left side of the screen.

Figure 1
Example *of Company Home Page*



Results

Table 2 reports the descriptive statistics of the 18 firms included in our sample. The firms have average annual sales of $38.79 billion, average total assets of $29.19 billion, and an average market capitalization of $77.38 billion. The firm with the greatest market capitalization ($308.1 billion) is Exxon/Mobil, which also has the highest annual sales of $223 billion. In comparison, the firm with the smallest market capitalization is Ashland, Inc., ($2.281 billion) and the lowest sales figure is

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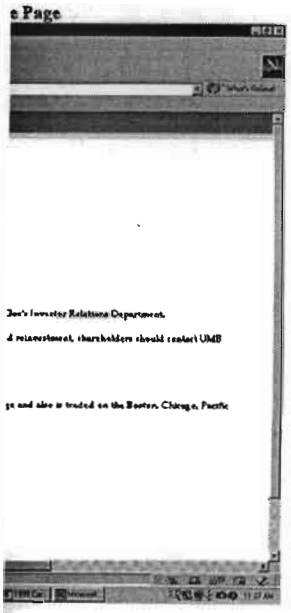

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reported by Burlington Reserves ($2.870 billion). Occidental Petroleum Corporation has the greatest return on equity as well as the greatest return on assets. Texaco has the lowest Beta (.36), while Tosco has the highest Beta at 1.07.

Table 2
Descriptive Characteristics of Sample Firms

Characteristic	Minimum	Maximum	Average
Sales (000)	$2,870	$223,000	$38,790
Assets (000)	$1,688	$144,521	$29,188
Market Capitalization (000)	$2,281	$308,100	$50,162
Return on Equity	7.00%	47.03%	20.27%
Return on Assets	3.00%	11.09%	6.97%
Beta	.36	1.07	.74

Overall, the websites investigated for this study appear to be more extensive than the ones examined by Ashbaugh et al. (1999) from the latter part of 1997 through January 1998. At that time, these authors found that the content on many of the firm's sites was limited to an address and a description of the business. Ashbaugh et al. (1999) found that 30 percent of the firms with websites did not disclose any financial data. The current study research shows that all the firms in the sample have a considerable amount of content, which is often organized into the following sections: "About the Company," "Investor Relations," "News," "Products and Services," and "Corporate Responsibility." The financial and environmental disclosures on the website of each of the sample firms were evaluated based on the criteria identified by Louwers et al. (1998). The results from the financial information portion of this evaluation are reported in Table 3.

Table 3
Summary of Financial Disclosures

Quality Measure	Percent of Firms with Characteristic
Accessibility	
Link on Home Page with Constant Top-or Sidebar	**72**
Investor Relations Link	**83**
Searchable Site	**61**
Breadth	
Stock Price on website	**72**
Stock Chart on website	**72**
Current Annual Report	**89**

Access to 10K	78
Edgar Link	39
Depth	
SEC filings	83
Ability to Download and Manipulate Information	17
Frequency	
Quarterly Financial Information	78
Link to Presentations	56
Link to Press Releases	89
Timeliness	
Current Quarter Results	89

The majority (72 percent) of the websites were very accessible with links on the home page and a consistent menu template present on each page. Eighty-three percent of the firms had a specific "Investor Relations" link where most investor-related information was organized. Access to financial information was one click away from the homepage for 15 of the firms.

With respect to breadth, 72 percent of the firms provided current stock price (often updated every 20 minutes) on their website. The remaining firms had a link to a third party site that provided the current stock price. Seventy-two percent of the firms also provided a link to a stock chart. The two most common sources of this information for the companies were Stockmaster (now known as the Red Herring Investment Center) and CBS Marketwatch. Eighty-nine percent of the companies provided a complete current annual report, which was most often rendered in a downloadable Portable Document Format (PDF) file.

Three companies also provided downloadable Excel files of financial statements and footnotes. Such files are easy to use without re-keying the information, and may be used to compute ratios and perform comparison analysis. For example, BP Amoco has a downloadable Excel workbook with 58 worksheets for 1999. This workbook includes the financial statements and all the footnotes. In addition, 78 percent of the firms provided access to their 10Ks, with seven providing a link to another party. Only 39 percent of the firms provided a link to EDGAR, although all of the sample firms must file and all of those filings are accessible on EDGAR.

Loewers et al. (1999) suggest measuring depth by the number of periods of historical information included on the site. Eighty-three percent of the companies provided either a link to EDGAR or annual reports for multiple periods. If the company included

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the reports on their website, they were most often PDF files. The years of information ranged between one and ten, with an average of 4.5 years of financial data. Three companies allowed the user to download Excel files, and at least two years of financial performance information was available.

The frequency and timeliness of the information provided by the majority of the oil and gas companies is commendable. Quarterly financial data was provided by 78 percent of the firms; and 56 percent provided links to presentations (normally those made to financial analysts). Eighty-nine percent of the firms included a list of their press releases. The timing for the analysis of this study coincided with the release of third quarter financial performance for most companies; many of the companies included a replay or transcripts of conference calls. Users were able to listen to the quarterly earnings announcements for five companies via a live webcast. With the exception of two firms' websites, it appears that the companies view their websites as an integral part of their information channel.

However, the results of this study suggest that fewer companies perceive environmental performance information to be as important as their financial performance. The results of the search of environmental information are presented in table 4. The authors found that four of the firms did not include any information about their environmental performance. Also, this performance indicator was more difficult to locate than financial information. Only 33 percent of the firms had a link to their environmental performance disclosures on their home page. In addition, more diversity in placement of environmental information was noted. Two companies placed environmental information within the "Investor Relations" section, while others placed it in their general company area or in a values and ethics section.

Table 4
Summary of Environmental Disclosures

Quality Measure	Percent of Firms with Characteristic
Accessibility	
Link on Homepage	**33**
Easily Viewable	**50**
Breadth	
Full Environmental, Health, and Safety Report	**50**
Depth	
Detailed Release Information	**44**
Multi-year Comparisons	**22**
Frequency	
More than One Year of Information	**28**
Timeliness	
Current year (1999) Report	**39**

Fifty percent of the firms include a full Environmental, Health, and Safety (EHS) Report. Similar to the annual report, this is often downloadable as a PDF file. Companies often include their emissions records as well as their capital expenditures in their EHS report. Although, the SEC and authoritative accounting bodies provide environmental contingency and capital expenditure guidance, there are currently no definitive guidelines about what to (or not to) include in an EHS report. The EHS report is published at the discretion of the firm. Consequently, the EHS report is often used as a marketing tool and as an opportunity to highlight any awards and environmental restoration projects. Forty-four percent of the firms included detailed information about their releases and 22 percent of the companies included graphs that compared their year-to-year releases. Only 28 percent of the firms included multiple years of environmental performance or effluent release data, and 39 percent of the firms had an environmental report that could be considered current (1999 report).

When comparing each sample firm's environmental ranking to their disclosures, the firms in the lower half of the CEP ranking are less likely to include full EHS reports, and two of the four firms with no environmental performance information are in the bottom half. The other two firms are not included in the CEP ranking. When the IRRC compliance index is compared to the disclosures, the results are mixed. Firms are just as likely to include a full EHS report if their performance is in the bottom half as they are if their performance is in the top half. The firm

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	Percent of Firms with Characteristic
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with the best IRRC ranking, Enron, had very proactive environmental disclosures in that they discuss steps they were taking to further reduce emissions and include forecasted emissions through 2003. Conversely, Kerr McGee, the firm with the worst ranking, did not have any hard data on their website. This firm's website includes information on awards they have received, but do not include either performance data or an EHS report.

Discussion and Recommendations

Overall, the study results indicate a great deal of variation in the quality of information and usefulness of firms' IFR. The results also suggest that firms are more likely to have an Internet presence if they are larger and more profitable, which is predictable given the cost of designing, implementing, and maintaining a website.

If an investor is interested in the financial performance of an oil and gas firm, sufficient information is provided on the company's website to make an informed decision. Of course, the serious investor would want to compare each company's performance to others in the same industry, to other firms, and/or to a general index, such as the S&P 500. This study found that financial coverage was consistent across sample firms. As might be anticipated given recent advances in web development, the breadth, depth, timeliness, and frequency of information appear to have greatly improved since the Ashbaugh et al. (1999) study in late 1997.

However, the same cannot be said upon examining environmental disclosures. While some information is available, it is difficult to make comparisons across companies. Therefore, one must rely heavily on information provided by another source such as the CEP or the IRRC to rank companies. The results of this study confirm that few firms disclose enough to adequately evaluate whether the company is environmentally conscious or environmentally proactive. This suggests that companies need more guidance about what types of information environmentally conscious investors desire to evaluate performance.

The authors offer the following suggestions to oil and gas firms who wish to make their websites more useful to investors in general and to environmentally conscious investors in particular. First, inclusion of downloadable files (such as Excel or XBRL) increases the ability to perform specific ratio analyses and

make other comparisons without re-keying the data. PDF files, while providing the information, do not lend themselves to data extraction or manipulation. Next, all companies should use a menu template, which remains on the screen. Those sites that had this feature were much more accessible than those that did not. Third, more consistent coverage across companies and additional years of environmental performance data is necessary to adequately evaluate a given firm's environmental performance. These suggestions are summarized in Table 5.

Table 5
Recommendations for Improving the Usefulness of Company Websites

- Include downloadable, manipulative files
- Use a menu template
- Provide comparable coverage across time

The goal of this study was to report on the current status of company websites for the oil and gas industry with respect to the information disclosed on financial and environmental performance. An extension to this research project would be to define "best practices," particularly with respect to environmental disclosures. There are a number of discretionary environmental disclosure guidelines. For example the American Petroleum Institute has its Strategies for Today's Environmental Partnership (STEP), which provides guidance on a wide variety of EHS issues. See Appendix. These STEP guidelines could be used to provide the framework for developing a "best practices" template that might include improving EHS performance, documenting performance improvements, and responding to public concerns. Similar to GAAP, which emphasizes comparability and consistency across time for a particular firm and between companies for a specific time, development of such a template would standardize company disclosures across time, and allow the reader to compare companies. This template would permit the environmentally conscious investor to confidently access a company's website knowing the company's environmental performance record is objectively reported.

Appendix
Strategies for Today's Environmental Partnership (STEP)

Strategies for Today's Environmental Partnership (STEP) was established by the members of the American Petroleum Institutes. These member companies have accepted a shared

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responsibility for the industry's environmental, health and safety performance. They understand that this performance influences how the industry is viewed by the public, regulators, and its employees. The foundation of this commitment is the API Environmental, Health and Safety Mission and Guiding Principles, which became part of API's bylaws in 1990.

STEP provides a unifying framework that the petroleum industry can use to improve Environmental, Health and Safety (EH&S) performance. This framework is flexible, yet systematic, and can help companies to share best practices; to enhance operating efficiencies and reduce costs; to document performance improvements; and to respond to public concerns about industry performance and future commitments.

STEP focuses the oil and gas industry on achieving four continuous improvement objectives:

- Improving industry environmental, health and safety performance;
- Documenting performance;
- Communicating performance improvement; and
- Building sustained understanding and credibility through dialogue with concerned groups and individuals.

The Mission of STEP:

The members of the American Petroleum Institute (API) are dedicated to continuous efforts to improve the compatibility of operations with the environment while economically developing energy resources and supplying high quality products and services to consumers. The members recognize their responsibility to work with the public, the government, and others to develop and to use natural resources in an environmentally sound manner while protecting the health and safety of their employees and the public. To meet these responsibilities, API members pledge to manage their businesses according to the following principles, using sound science to prioritize risks and to implement cost-effective management practices:

- To recognize and to respond to community concerns about raw materials, products and operations;
- To operate plants and facilities, and to handle raw materials and products in a manner that protects the

environment, and the safety and health of employees and the public;

- To make safety, health and environmental considerations a priority in planning and development of new products and processes;
- To advise—promptly—appropriate officials, employees, customers and the public of information on significant industry-related safety, health and environmental hazards, and to recommend protective measures;
- To counsel customers, transporters and others in the safe use, transportation and disposal of raw materials, products and waste materials;
- To economically develop and produce natural resources and to conserve those resources by using energy efficiently;
- To extend knowledge by conducting or supporting research on the safety, health and environmental effects of raw materials, products, processes and waste materials;
- To commit to reduce overall emission and waste generation;
- To work with others to resolve problems created by handling and disposal of hazardous substances from operations;
- To participate with government and others in creating responsible laws, regulations and standards to safeguard the community, workplace and environment;
- To promote these principles and practices by sharing experiences and offering assistance to others who produce, handle, use, transport or dispose of similar raw materials, petroleum products and wastes.

(Source: API Website, <http://www.api.org/pasp/step/index.htm>)

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