

**THE IMPORTANCE OF CORPORATE DISCLOSURE: HOW MARKET TRANSPARENCY AFFECTS THE FIRM'S FINANCIAL HEALTH<sup>1</sup>**

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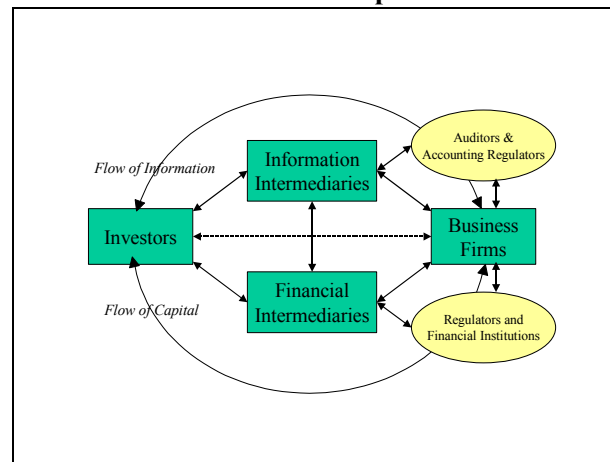
How companies and other information intermediaries disclose information to outside investors and the market influences how companies are perceived and how they operate financially in their markets. Through regulated financial reports, financial statements, footnotes, management discussion and analysis, and other regulatory filings, companies provide disclosure through a mix of formal and informal information channels. Companies also engage in voluntary disclosure, including management forecasts, presentations and conference calls with analysts, press releases, Internet (information) sites and other reporting formats. Corporate disclosure is mediated by an increasing number of information intermediaries, including financial analysts, industry experts and the financial press. The volume and importance of disclosure by these intermediaries has steadily increased, in part fueled by the debacles with Enron and WorldCom, and the subsequent calls for reform in government-mandated disclosure rules. And the Internet and advances in communications technology generally has spurred an increasing volume of consumer-mediated communications on companies, regulatory practices and the market, including web-logs ("blogs"), "e-opinions", consumer ratings and public bulletin boards.

The most widely available source of corporate disclosure is financial statements, usually mandated. In addition to financial statements, managers also provide other information to investors. Some, such as footnotes and management discussion and analysis, are disclosed within the financial report. Other disclosures are provided voluntarily through other information channels, including analyst presentations and conference calls, press releases and Internet sites. Through these disclosures, managers provide information that facilitates

external users of financial reports to better understand the true economic picture of the business.

Furthermore, management disclosures made outside financial statements are not directly certified by independent parties. Rather, their source credibility is enhanced through their use and evaluation by outside parties, including financial analysts and business journalists. These "information intermediaries" provide a measure of implicit certification of management's financial statements and non-financial disclosures. However, this certification is not in any way formal nor can it be argued to be necessary complete. Figure 1 shows the participants and flow of information and capital in formal (mandated) and voluntary disclosure. The bottom of Figure 1 illustrates the flow of capital between investors and companies. Capital can flow directly (examples: private equity financing, angel investing), and through financial intermediaries (examples: investment banks, brokerage companies). The top of Figure 1 illustrates the flow of information. Companies and investors can communicate directly through releases of financial reports and press releases, and they can communicate through intermediaries such as financial analysts and business reporting.

**Figure 1:  
 Flow of Information and Capital in Disclosure**



As part of an ongoing research project, Professors Kothari and Short are conducting an analysis of corporate and intermediary disclosure, and testing the effects of disclosure on the firm's market value,

<sup>1</sup> This research is sponsored by PricewaterhouseCoopers

cost of capital and related financial measures of performance. The goal of their research is to uncover patterns in disclosure made by the different parties in the flow of information and capital, and to test for the effects of these patterns on the firm's cost of capital. Through a better understanding of disclosure and its effects, managers will have the information needed to evaluate their disclosure practices and consider improving them if necessary.

### **Building the Disclosure Database**

To study disclosure and its financial impacts, Kothari and Short set about gathering disclosure (text) data from electronic data sources for a large sample of companies. Four electronic data sources were accessed, Dow Jones Industrial, Investex, Factiva and the Securities and Exchange Commission's Edgar site. All disclosures made by companies, analysts, and all business articles published by over 400 news journals, magazines and other publishers available electronically were downloaded for the period 1996-2001, for companies in four sectors, Pharmaceutical, Telecommunications, Financial Services, and Technology. Disclosure texts ranged, for example, from a one or two paragraph product or market announcement by a firm, to a many-page government-mandated 10K filing. All texts were downloaded in their entirety. The resulting text databases are very large – for the 72 companies making up the Pharmaceutical sector of the study, for example, 51,860 disclosure texts were downloaded.

Textual data was analyzed using Content Analysis to find and count frequencies and similarities in words and word meanings in disclosure texts. The underlying principle in content analysis is that the many words of a text can be classified into much fewer content categories, where each category consists of one or many similar words or word phrases, and that each word or phrase occurrence can be counted and the counts compared analytically. Word or phrase similarities are based on the precise meanings of the words themselves (for example, grouping synonyms together), or may be based on word groupings sharing similar connotations (for example, grouping together several words associated with a concept such as market share, revenue growth, or forecasted earnings). Content analysis therefore, can be useful in comparing different types or "levels" of communication, thereby helping to describe trends

in information disclosure and/or disclosure content. Establishing these levels and/or trends, associated with key stakeholders in disclosure, can serve to highlight important differences in the relative importance of formal and informal practices in disclosure.

The procedure for Content Analysis is that text is passed through and compared to a dictionary of words. Matches are counted and the text surrounding each match is saved to preserve context. Dictionaries can be built by the researcher, or supplied by an established Content Analysis program. Kothari and Short did both, building a business-specific dictionary of terms associated with six categories of company action, assets and performance, and they also used a highly regarded Content Analysis program developed by Professor Philip Stone at Harvard University, the General Inquirer (GI). The specific application of GI was to construct scaled scores of word frequencies and meanings in disclosure texts, and to output these scores into a matrix of weights (of information importance) that in turn could be analyzed in econometric analysis of company financials and cost of capital. In addition to the econometric analysis, Content Analysis can also be used to provide a detailed, descriptive mapping of information content.

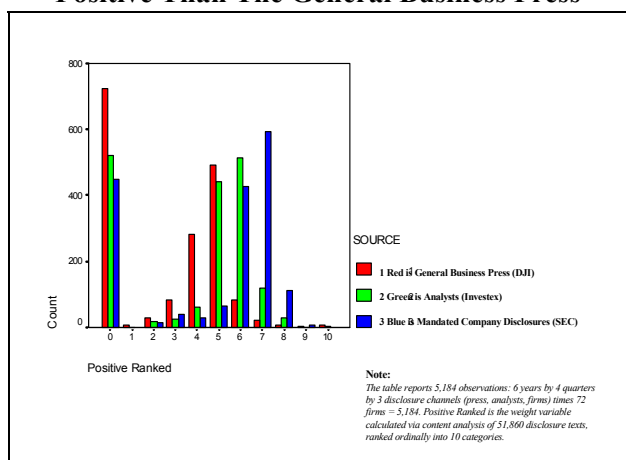
### **Early Results From The Pharmaceutical Sector: Who Says What, When Matters**

Content analysis of the data from 72 companies and 51,860 disclosure texts in the Pharmaceutical sector shows descriptively that companies and analysts tend uniformly to be more positive in their disclosures than the general business press. In disclosures related to views of external market conditions or the performance of firm strategy against stated objectives, companies and analysts generally are *much more* positive than the general business press, and the positive bias holds across all business content categories studied (the six categories include words and statements associated with the external market, with firm strategy, with human resources and organizational capital, with the firm's market recognition and strength of brand identity, with the firm's investment and financial performance, and with government regulation that can influence the firm's operations).

Figure 2 shows the relationship between the number (strength) of positive words and word meaning by

source of disclosure.<sup>2</sup> The variable “Positive” represents the intensity of positive words and word meanings in disclosure texts published by the three content sources over the period 1996-2001. The variable has been coded into 10 ordinal categories, where 1 represents “just positive” (fewest numbers of positive words and word meanings), and 10 is *very* positive (highest number of positive words and word meanings). Note in the cross-tabular table the strong “right shift” / preponderance of positives for company and analyst disclosure (height of the blue and green vertical bars on the high end of the positive scale), and in the table of counts, the higher number of counts in columns 2 and 3 for higher values of Positive. The size of the shift suggests a strong relationship. The associated statistical tests for cross tabulation and correlations are also highly significant.

**Figure 2:**  
**Companies and Analysts Are Significantly More Positive Than The General Business Press**



For negative words and word meanings in disclosure texts, we found that companies are the most negative (cautionary), followed by the general business press. Analysts are the least negative in their disclosures. The Content Analysis pattern observed suggests a close affinity between company and analyst disclosure in presenting positive assessments of firms, and we consider this finding highly significant in view of the evidence. In analyzing negative words and word meanings in disclosure texts, we find that analysts are less negative in their assessments than either companies or the general business press. In sum, analysts are uniformly more positive and less negative in their disclosures.

<sup>2</sup> Categories are: 1=Dow Jones Industrial/Factiva (general business press); 2= Investex (analysts); and 3=SEC/Edgar (company 10Ks and 10Qs).

When Kothari and Short turned to investigating the impact of disclosure on cost of capital using the information weights obtained from the GI, the results were significant. They investigated the impact of disclosure (positive news and negative news) on firms' cost of capital, standard deviation of daily stock return, standard deviation of analysts forecast error and stock performance. Using the cost of capital as an example, they first estimated each firm's expected cost of capital by its historical information. Then they constructed two composite disclosure measures: one for positive news and one for negative news. There were three disclosure sources (Company disclosures, Analyst disclosures, and General Business Press) and six categories of positive and negative news for each firm-quarter. They averaged across the sources and categories to get the composite measures. Finally, they regressed the cost of capital on the two disclosure measures and other control variables, such as firm's market capitalization, book equity/market equity and capital structure. The results support the view that disclosures have an impact on the cost of capital. The coefficient on the composite positive news measure is negative and statistically significant. This means that the more positive news disclosure, the lower the firms' cost of capital. The coefficient on negative news measure is positive, but not statistically significant. This means that more negative news disclosure does not decrease firms' cost of capital, if it does not reliably increase firms' cost of capital.

### Implications and Next Steps

Kothari and Short's research provides empirical evidence demonstrating the importance of positive news disclosure on cost of capital. They are continuing to investigate the importance of negative news disclosure. Their information analysis suggests strong and different patterns in disclosure content made by firms, analysts and the press, and suggests the importance of agency in assessment. As the role of information intermediaries increases, these early results highlight the importance of who says what, when, and through what channel, on the firm's cost of capital.

The next steps in Kothari and Short's research are to extend the information and econometric analysis to the other industry sectors in the study, and to deepen the analysis of potential news and disclosure factors which can be incorporated into the econometric model.

**CENTER FOR EBUSINESS MISSION**

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Examples of Current Focused Research Projects:

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- Implications of e-Commerce for New Services and Structure of Logistics Systems
- How Do Intangible Assets Affect the Productivity of Computerization Efforts?
- Wireless and Mobile Commerce Opportunities for Payments Services
- Two-Tier Support Business Models
- The Impact of the Internet on the Future of the Financial Services Industry
- Pricing Products and Services in the High-Tech Industry

The Center for eBusiness has recently entered into Phase II, adjusting its agenda to focus more explicitly on business value, while at the same time including technologies beyond the Internet and its purview. The early period of exploration and experimentation is coming to an end and there is now the opportunity, and the necessity, to focus more explicitly on using digital technologies to deliver measurable business value. Amidst all this change, the business fundamentals of investment, revenues, expenses, profits, and satisfying customers have only grown more important. At the same time, a broader, interrelated set of technologies is at our disposal. While the Internet has been an important catalyst, related digital technologies are often at least as relevant.

We are co-located with MIT Sloan's Center for Information Systems Research initiative and the Center for Coordination Science to facilitate collaboration. We also collaborate with the Media Lab and the Lab for Computer Science.



The Center for eBusiness gratefully acknowledges the support and contributions of its Sponsors.

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