Web-based Business Reporting in Indian Corporate Sector

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ABSTRACT

Internet has the widest reach as mode of communication in the present world of globalised economies. Recently the companies have started reporting their financial results and other information relating to business on their websites. Almost every company today maintains its website. It has been observed that information disclosed by companies on their websites largely depends on disclosure practices of competitors and industry standards. The present paper examines the disclosures of financial and non-financial information on websites by Indian companies. A sample of top 200 companies, which constitute BSE-200 Index, has been taken for the study. The sample comprises 19 diverse industry sectors. To measure the type and extent of web disclosure by the sample companies a worksheet referred as *Internet Disclosure Index* (IDI) has been prepared. The results summarized indicate that there is a positive relationship between industry sector to which a company belongs to and its internet reporting practices.

Keywords: *Web reporting, Internet disclosure index, financial reporting index, non-financial reporting index*

1. Introduction

The various developments in the field of information technology (IT) during recent times have influenced almost all the sections of the economy. The use of IT in various functional areas of business management has become quite popular these days. Internet use as mode of communication has the potential to exhibit distinctive and attractive features of information and makes it an efficient and cost effective measure as compared to the traditional methods of print media. Recently the companies have started reporting their financial results and other information relating to business on their websites. Almost every company today maintains its website. Business reporting on websites relates to financial and non-financial information regarding resources and performance to stakeholders of a company.

The significance of web business reporting has increased during recent times under the influence of economic, market and regulatory pressures wherein companies are expected to accumulate and publish information regarding financial performance, social and environmental issues, corporate governance and marketing information with more frequency, detail and variety of formats. It has become quite a popular practice of communicating with stakeholders. It has rather become mandatory for every public organization to disclose information on website with the implementation of Right to Information Act, 2005. However, the information disclosed on website has yet to standardize in format and content and different companies are adopting different

practices in this regard. Corporate reporting is taking new shape and raising many implications for proper regulation of markets.

While reporting on websites the companies tend to meet industry standards in this regard. Signalling theory suggests that disclosure of information to stakeholders is bound to differ with various industrial sectors. But within the industry companies are expected to follow industry standards. If a company within an industry fails to follow the industry disclosure practices then it may be interpreted that the company is hiding some bad news (Craven and Marston 1999). There is also evidence on association between industry and the extent of financial information provided on corporate websites (Oyelere et al. 2003). The companies also monitor competitors' websites to benchmark their own site content so as to avoid their company being perceived as "backwards" relative to industry peers.

The present paper examines the disclosures of financial and non-financial information on websites of Indian companies and identifies that the disclosures vary from industry to industry. The various sub sections hereinafter included in the paper relate to literature review, objectives, methodology, analysis and results and conclusions.

2. Literature Review

The main sources of literature review include various websites, selected referred national and international journals. It has been found in the course of review of literature that there are many studies conducted abroad, but very little work has been done on this subject in India.

Some prominent studies which deserve reference here include Lymer (1997), Marston and Leow (1998) and Craven and Marston (1999) who carried out a study on web reporting practices in UK based companies. Lymer and Tallberg (1997); Hedlin (1999); Brennan and Hourigan (2000); Hassan et al. (2000); Larran and Giner (2002); Lybaert (2002); Bonson and Escobar (2002); Marston (2003); Oyelere et al. (2003); Marston and Polei (2004); Adham and Ahmad (2005); Pervan (2005); Momany and Shorman (2006); and Boesso and Kumar (2007) examined web reporting practices in different countries including Finland, Sweden, Madrid, Irish, Kuala Lumpur, New Zealand, Spain, European Union countries, Netherlands, Croatia, Jordan and USA. So far there has been no study conducted on Indian companies.

Xiao et al. (1997) investigated that whether contingent factors: user type, size, listing status, gearing ratio, and management compensation plan could explain relationships between IT use and CFR.

Ashbaugh et al. (1999) made a study on corporate reporting on Internet on 290 companies. It was found that corporate size was statistically significantly correlated with Internet financial reporting. Craven and Marston (1999) examined the extent of financial information disclosure on the Internet by the largest companies in the UK in 1998. The study found that there was no significant association between industry type and disclosure. Debreceny and Gray (1999) studied financial reporting on the Internet and its implications for external audit by surveying forty five large listed UK, French and German corporations. A total of thirty-six of these corporations published their annual financial statements in HTML or Adobe Corporation's Acrobat.

A positive association between industrial sector and web reporting was established by Brennan and Hourigan (2000) who analysed the relationship between Internet disclosure and size, leverage, demand for corporate information and industry. Companies in the services and financial industries were significantly more likely to have a website. Hassan et al. (2000) conducted the survey and found that firm's size and profitability are significant factors motivating to disclose financial information on such sites. An industry effect was found only to significantly influence companies' decision to have a corporate Website.

Debreceny et al. (2002) revealed that a firm's size, listing on US stock exchanges and technology were firm specific determinants of IFR. Ettredge et al. (2002) showed that mandatory reporting was statistically significantly and positively correlated with size, return-profit ratio, need for capital, with information asymmetry and quality of reporting.

Oyelere et al. (2003) indicated that some determinants of traditional financial reporting—firm size, liquidity, industrial sector and spread of shareholding—are determinants of voluntary adoption of Internet financial reporting (IFR). Geerings (2003) highlighted a size effect i.e. large companies use the Internet for investor relations purposes more extensively than smaller companies. Marston (2003) concluded that variable of profitability, industry and listing of shares was not statistically significantly correlated with the existence of a web site or with the level of financial reporting.

Fahri et al. (2004), postulated a research model to contain three organisational independent variables – company size, financial condition, and technological readiness – that are believed to influence internet adoption within SMEs. Company size was found to be positively related to only the overall internet-adoption measure and none of its components. Marston and Polei (2004) researched into the 50 biggest German corporations for 2002 and 2003. Percentage of free float of shares and lisiting of shares were positively correlated with the level of financial reporting.

Adham and Ahmad (2005) examined the adoption rates of web site and e-commerce technology by all 562 Malaysian public listed companies. Of the 562 companies, only 62 percent (351) were found to have operable web sites; and of 351, 96 percent (336) were solely informational, leaving only 4 percent (15) that were equipped for e-commerce transactions. Khadaroo (2005) compared the internet reporting practices of Malaysian listed companies with those in Singapore and found that the listed companies of Singapore had greater web presence as compared to Malaysia. Pervan (2005) found that joint stock companies in the tourist sector were shown not to have a propensity for Internet financial reporting. The study concluded that bearing in mind the expected growth of GDP, the growth of the capital market, with the constant growth in the number of Internet users, investment in financial reporting on the Internet could be a useful decision for joint stock companies that wish to enhance the transparency of their operations.

Momany and Shorman (2006) investigated the extent of financial reporting on the internet of the Jordanian companies. On average, the results indicated that companies that report financial information on their websites were larger, more leveraged, had more concentrated ownership, had more international investors, and were more recent than non-web-based companies. Pervan (2006) analysed the voluntary financial reporting practices of Croatian and Slovene listed joint stock companies and found statistically significant but negative correlation was established for two sectors, tourism and marine transport. Only one sector, transport, was significantly and negatively correlated with the IFR score.

Boesso and Kumar (2007) identified that in addition to investors' information needs, factors such as company emphasis on stakeholder management, relevance of intangible asset, and market complexity affect both the volume as well as the quality of voluntary disclosures.

Li et al. (2008) designed a framework to establish adaptive web presence and evolution through web log analysis. They revealed the relationship between the web traffic workload and a few factors such as the domains names and geographic locations. Their patterns shed light on how to design a better web and enhance its performance. Tong et al. (2008) applied a holistic trust model and conducted a preliminary survey to evaluate the importance of the trust factors on the adoption of Internet-based inter-organisational systems (IIOS).

The literature reviewed here highlights the need to examine web-based corporate reporting practices in India. The present paper makes a modest attempt to fill up this gap.

3. Research Objectives And Hypothesis

The main objective of the study was to examine the disclosures of financial and non-financial information on websites of Indian companies. To achieve this objective, the focus was on determining the internal disclosure index and its relationship with industry.

Web-based corporate reporting is a voluntary practice adopted by companies. Political cost theory suggests that industry membership may affect the political vulnerability of firms. Firms in industries that are more politically vulnerable may use voluntary disclosure to minimize political costs, such as regulation, breakup of the entity/ industry etc. A positive association between industrial sector and web reporting was established by Brennan and Hourigan (2000); Hassan et al. (2000) and Oyelere et al. (2003). Keeping in view the findings of literature reviewed, the following hypothesis was formulated:

> *H_1 = There is positive association between industry type and Internet Disclosure Index of a company.*

4. Research Methodology

For the purpose of this study, a sample of top 200 companies, which constitute BSE-200 Index as on January 15, 2007 has been taken. The rationale behind selecting BSE-200 Index as sample base was that these 200 companies account for a sizeable share of market capitalization in Indian security market and reflect the performance of almost the entire corporate sector in the country. The industry wise distribution of sample companies has been shown in Table-1 below:

Table 1: Industry -Wise Distribution Of Sample Companies

Industry Sector	Number of Companies	Per cent
Capital Goods	18	9
Housing Related	15	7.50
Diversified	12	6
Finance	27	13.50
Textile	4	2
Transport Equipments	15	7.50
Health Care	19	9.50
Chemical and Petrochemicals	6	3
Agriculture	8	4
FMCG	12	6
Oil & Gas	16	8
Telecom	5	2.50
Power	5	2.50
Transport Services	6	3
Tourism	3	1.50
Information Technology	13	6.50
Metal and Mining	12	6
Media and Publishing	2	1
Consumer Durables	2	1
Total	**200**	**100**

The Table reflects that the maximum number of 27 companies come from financial sector. 19 companies are from health care and 18 from capital goods. The sample represents 19 industry sectors from Indian corporate sector.

To measure the type and extent of web disclosure by the sample companies a worksheet referred to as Internet Disclosure Index (IDI) has been prepared. The information has been collected under seven major themes: i) Financial Reporting Index (FRI); ii) Corporate Governance Information

(CGI); iii) Corporate Social Responsibility & Human Resource Information (CSRI); iv) Marketing Information (MI); v) Investor Relations Communication (IRC); vi) Right to Information Act (RTI) and vii) Technological Aspects and User Support (TAUS). Variables from ii) to vii) jointly constitute Non-Financial Reporting Index (NFRI). Definitions applied in the checklist model are based on an extensive literature review of prior web-based disclosure studies. A pilot survey was conducted on some websites of Indian companies and contents of Internet Disclosure Index (IDI) were revised accordingly.

The data for computing the Internet Disclosure Index has been taken from the websites of the sample companies. The maximum score of IDI as per the worksheet developed comes to 135. The maximum possible scores for each of the sub-categories are given in Table 2.

Table 2: Maximum Possible Scores Of Disclosure Index

Categories in Disclosure Index (Dependent Variable)	**Maximum Possible Score**
Financial Reporting Index (FRI)	36
Corporate Governance Information (CGI)	18
Corporate Social Responsibility & Human Resource Information (CSRI)	14
Marketing Information (MI)	9
Investor Relations Communication (IRC)	12
Right to Information Act (RTI)	7
Technological Aspects and User Support (TAUS)	39
Non – Financial Reporting Index (NFRI) *(It is a sub total of CGI + CSRI+ MI+IRC+RTI+ TAUS)*	99
Internet Disclosure Index (IDI) *(It is sub total of FRI + NFRI)*	135

Various descriptive statistics have been computed and analysed to explain the extent and type of IDI. To examine the relationship between IDI and industry groups variance analysis has been carried out in the study.

5. Empirical Results And Analysis

Internet disclosure index is a composition of Financial Reporting Index and Non-Financial Reporting Index. Non-financial reporting includes Corporate Governance Information, Corporate Social Responsibility and Human Resource Information, Marketing Information, Investor Relations Communication, Right to Information Act and Technological Aspects and User Support. Table 3 shows the mean, median, standard deviation, range, interquartile range, skewness and kurtosis values of all these variables, hereinafter called the dependent variables in this study.

Table 3: Descriptive Statistics of Dependent Variable

Dependent Variable	**Statistics**	**Sector**		**All Companies**
		Public	**Private**	
Internet Disclosure Index (IDI)	Mean	64.93	59.92	60.67
	Median	66	59	61
	Variance	159.168	245.195	234.595
	Std. Deviation	12.62	15.66	15.32
	Minimum	38	19	19
	Maximum	98	96	98
	Range	60	77	79
	Interquartile Range	17.25	24	22
	Skewness	0.125	-0.112	-0.138
	Kurtosis	0.664	-0.545	-0.413

Dependent Variable	Statistics	Sector		All Companies
		Public	Private	
Financial Reporting Index (FRI)	Mean	15.6	13.9	14.16
	Median	14.5	13	14
	Variance	34.731	35.567	35.637
	Std. Deviation	5.89	5.96	5.97
	Minimum	5	0	0
	Maximum	30	33	33
	Range	25	33	33
	Interquartile Range	9	8	8
	Skewness	0.532	0.04	0.101
	Kurtosis	-0.052	-0.086	-0.042
Non-Financial Reporting Index (NFRI)	Mean	49.33	46.02	46.52
	Median	48	46	47
	Variance	77.402	124.958	118.776
	Std. Deviation	8.8	11.18	10.9
	Minimum	30	19	19
	Maximum	68	71	71
	Range	38	52	52
	Interquartile Range	12.5	15	15
	Skewness	0.023	-0.116	-0.151
	Kurtosis	-0.257	-0.438	-0.368
Corporate Governance Information (CGI)	Mean	9.53	9.3	9.33
	Median	10	10	10
	Variance	10.809	12.15	11.9
	Std. Deviation	3.29	3.49	3.45
	Minimum	4	0	0
	Maximum	17	17	17
	Range	13	17	17
	Interquartile Range	4.25	5	5
	Skewness	0.027	-0.206	-0.18
	Kurtosis	-0.325	-0.513	-0.493
Corporate Social Responsibility and Human Resource Information (CSRI)	Mean	6.27	6.1	6.13
	Median	6.5	6	6
	Variance	9.168	11.234	10.878
	Std. Deviation	3.03	3.35	3.3
	Minimum	0	0	0
	Maximum	11	14	14
	Range	11	14	14
	Interquartile Range	6	4.5	5
	Skewness	-0.169	0.169	0.128
	Kurtosis	-0.811	-0.558	-0.585
Marketing Information (MI)	Mean	4.1	3.15	3.3
	Median	4	3	3
	Variance	4.162	3.405	3.614
	Std. Deviation	2.04	1.85	1.9
	Minimum	1	0	0
	Maximum	8	9	9
	Range	7	9	9
	Interquartile Range	3.25	2	2
	Skewness	0.508	0.571	0.574
	Kurtosis	-0.617	0.277	0.126

Dependent Variable	Statistics	Sector		All Companies
		Public	Private	
Investor Relations Communication (IRC)	Mean	6.8	6.27	6.35
	Median	7	6	6
	Variance	3.683	4.473	4.371
	Std. Deviation	1.92	1.92	1.92
	Minimum	1	1	1
	Maximum	11	11	11
	Range	11	11	11
	Interquartile Range	3	3	3
	Skewness	-0.762	-0.184	-0.261
	Kurtosis	2.26	-0.372	-0.19
Right to Information Act (RTI)	Mean	4.67	0	4.67
	Median	7	0	7
	Variance	11.264	0	11.264
	Std. Deviation	3.36	0	3.36
	Minimum	0	0	0
	Maximum	7	0	7
	Range	7	0	7
	Interquartile Range	7	0	7
	Skewness	-0.745	0	-0.745
	Kurtosis	-1.554	0	-1.554
Technological Aspects and User Support (TAUS)	Mean	22.63	21.35	21.54
	Median	22	22	22
	Variance	14.516	23.514	22.29
	Std. Deviation	3.81	4.85	4.72
	Minimum	14	10	10
	Maximum	31	33	33
	Range	17	23	23
	Interquartile Range	5.25	8	7
	Skewness	-0.182	-0.159	-0.202
	Kurtosis	0.042	-0.598	-0.51

The overall average of Internet Disclosure Index (IDI) score is 60.67. The maximum value of IDI is 98, whereas the minimum value is 19. The variances in the degree of disclosure in case of private sector companies are higher as compared to public sector companies. The mean value of public sector companies (64.93) is better as compared to private sector companies (59.92) for IDI. A very high degree of variations in the type of web disclosures can be noticed from the table. No company could get the hundred per cent score of 135. However, the standard deviation is higher for private sector companies (15.66) as compared to for public sector companies (12.62). No company could get hundred per cent score on IDI.

The mean value of Financial Reporting Index (FRI) for public sector companies (15.6) is higher as compared to private sector companies (13.9). The table shows that fluctuations in the FRI score are higher in private sector companies. The analysis highlights that there is no consistency in disclosure of financial information made by public and private sector companies.

The overall mean value for NFRI is 46.52. The mean value of Non-Financial Reporting Index for public sector companies (49.33) is higher as compared to private sector companies (46.02). For Corporate Governance Information (CGI), the mean value is 9.33. Public sector companies have better disclosure of Corporate Governance Information on the websites as compared to private sector companies. The overall maximum score of CGI is very good as it is near to hundred per cent of the total disclosure possible.

For Corporate Social Responsibility and Human Resource Information (CSRI) a company can get a maximum score of 14. The average value of CSRI in case of public sector companies is 6.27 and for private sector companies is 6.1. Private sector companies are better in disclosing their CSRI as compared to the public sector companies.

The average value of Marketing Information (MI) for public sector companies is 4 and for private sector companies are 3. Some private sector companies, which are using websites for E-commerce purposes, are getting higher score of MI but some of them are not at all using websites for marketing purposes. But in case of public sector companies product information is one component which is disclosed on every public sector company website. Very few companies use websites for e-commerce purposes.

Investor Relations Communication (IRC) is getting an average score of 6.35. The skewness (-0.261) and kurtosis (-0.19) are negative. The mean value of RTI for public sector companies is 4.67 and for private sector companies is 0 as no private sector company is disclosing information under RTI on their website.

The average value for all companies for Technological Aspects and User Support is 21.54 and a high degree of variation in technological soundness of websites of different companies has been found in the study.

5.1. Industry -Wise Classification Of Disclosure Index

Table 4 shows Internet Disclosure Index classification as per industry sectors of sample companies. Average Internet Disclosure Index of Information Technology (IT) sector (74.31) is the highest, diversified sector (72.58) is second, transport services (66.83) IDI score is at the third place. Financial sector has mean IDI score of 64.11, metal and mining (64.83), oil and gas (64.75), power (63.8), agriculture (58.13) also has good average IDI scores. The standard deviation is the highest in case of media and publishing companies (46.67) and is the lowest for consumer durables companies (7.78), which have a minimum score of 47 and maximum score of 58. The value of C.V also confirms high variations in media and publishing sector.

Table 4: Industry-wise Internet Disclosure Index

Industry Sector	Mean	Minimum	Maximum	Std. Deviation	Coefficient of Variation (C.V)
Capital Goods	53.67	27	70	13.78	0.26
Housing Related	56.00	27	72	12.84	0.23
Diversified	72.58	47	98	13.70	0.19
Finance	64.11	38	82	10.79	0.17
Textile	55.50	44	67	9.61	0.17
Transport Equipment	56.53	28	81	17.53	0.31
Health Care	54.21	31	77	14.91	0.28
Chemical & Petrochemicals	56.67	44	75	12.61	0.22
Agriculture	58.13	30	80	15.99	0.28
FMCG	58.08	36	81	16.31	0.28
Oil & Gas	64.75	42	93	16.42	0.25
Telecom	45.80	34	58	9.44	0.21
Power	63.80	54	82	11.26	0.18
Transport Services	66.83	51	96	16.61	0.25
Tourism	54.00	48	65	9.54	0.18
Information Technology	74.31	54	92	10.80	0.15
Metal & Mining	64.83	36	93	16.30	0.25
Media & Publishing	52.00	19	85	46.67	0.90

Consumer Durables	52.50	47	58	7.78	0.15

The mean score of FRI ranges from 8.33 to 18.75. Diversified sector has the highest mean FRI score of 18.75. Financial sector ranks second in disclosing FRI (16.59), chemical and petrochemicals sector ranks third (13.83) in disclosing financial information.

The average NFRI score varies between 36.2 (telecom sector) and 56.17 (IT sector) across all industry sectors. In average NFRI score diversified sector (53.83) ranks second and transport services sector (53.17) ranks third.

The average CGI of IT companies are the highest (11.62) while it is the lowest for telecom sector (5.2).

The average MI score of transport services is 4.67. Textile and tourism sector has a maximum mean IRC score of 7. The maximum IRC score is achieved by capital goods and diversified sector. The mean RTI value of power sector is 2.8 and that of financial sector is 2.33. RTI disclosures have low adoption rates. Private sector companies are not disclosing any information under this category and the public sector companies still need to improve their disclosures. Industry-wise Technological aspects and user support (TAUS) information shows that average score of IT sector (26.08) is the highest.

The above analysis shows that there is no standardization of content and presentation of information on website for any of the industrial sector. Average Internet Disclosure Index (IDI) of Information Technology (IT) sector (74.31) is the highest, diversified sector (72.58) stands second and transport services (66.83) is at the third place. Diversified sector has the highest mean FRI score of 18.75. Financial sector ranks second in disclosing FRI (16.59), chemical and petrochemicals sector ranks third (13.83) in disclosing financial information. Average NFRI is the highest for 56.17 (IT sector), diversified sector (53.83) ranks second and transport services sector (53.17) ranks third. The above analysis shows that mean IDI score of IT sector, Diversified sector and transport services sector is the highest. In case of FRI disclosure, mean score of Diversified sector and financial sector is the highest. The mean NFRI score of IT and diversified sectors is also good. IT sector has the highest mean TAUS score amongst the sample.

5.2. Hypothesis Testing

To statistically examine the relationship between industry sector and information disclosed on website, the following hypothesis has been formulated and tested:

> *H_1 = There is positive association between industry type and Internet Disclosure Index of a company.*

Table 5: ANOVA On Internet Disclosure Index And Industry Sector

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	9306.531	18	517.03	2.479	0.001
Within Groups	37748.969	181	208.558		
Total	47055.5	199			

ANOVA results show that there is significant relationship between type of industry sector and the amount of information disclosed on companies' website (Table 5). The results are highly significant at 1 per cent level of significance. So, the hypothesis is accepted and it can be concluded that type of industry sector has a positive association with IDI score of a company.

6. Conclusion

It is highlighted from the above analysis that mean value of overall Internet Disclosure Index (IDI) is 60.67, which is almost 50 per cent of the disclosure score calculated as per IDI worksheet. The variances in the degree of disclosure in case of private sector companies are higher as compared to public sector companies. There is difference between disclosures of public sector companies and private sector companies. Public sector companies have better disclosure of Corporate Governance Information on the websites as compared to private sector companies. Private sector companies are better in disclosing their CSRI as compared to the public sector companies. Very few companies use websites for e-commerce purposes. A high degree of variation in technological soundness of websites of different companies has been found in the study.

On comparing web disclosures of different Industry sectors it is revealed that average Internet Disclosure Index (IDI) of Information Technology (IT) sector is the highest, diversified sector stands second and transport services is at the third place. Financial sector and chemical and petrochemicals sector also gets a higher rank in disclosing FRI. This shows that companies which belong to IT, diversified, transport services and financial sector are outperforming other companies in terms of disclosure of information on websites for stakeholders. The results are also confirmed by hypothesis testing, where (H_1) is accepted. It can be concluded that type of industry sector has a significant association with IDI score of a company. This shows that industry sector, to which a company belongs to, leaves an impact on the web disclosure practices of those companies. This is an important result which proves that industry standards and level of competition determines the reporting practices followed by companies belonging to that industrial sector.

In this competitive scenario all companies would like to meet industry standards. The higher the intensity of competition in any industry more would be disclosure made by companies to get competitive edge. This shows that web reporting or electronic business reporting is a tool used by companies for differentiation and attracting stakeholders. It has been found that many companies use websites for image management.

This subject of study is emerging and new in Indian context. The extent of Internet disclosure has been studied for 200 Indian companies in the present study. So, a lot of scope exists for further research. The same Internet Disclosure Index can be evaluated for a large sample in Indian context. A comparative study of companies of developed countries and Indian companies or with Fortune 500 companies can be done. Study of web reporting can also be carried out for sector specific companies like banking sector, IT sector etc to check the level of disclosure and suggest improvements in the disclosure practices.

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