HOW NARRATIVE REPORTING CHANGED THE BUSINESS WORLD: PROVIDING A NEW MEASUREMENT TOOL

Alexandros Garefalakis*, Augustinos Dimitras**, Christos Floros***, Christos Lemonakis****

*Department Accounting and Finance, Technological Education Institute of Crete, Estavromenos, Heraklion, Crete, 71004, Greece
**Department of Social Science, Hellenic Open University, Parodos Aristotelous St., Patra, Greece
***Department Accounting and Finance, Technological Education Institute of Crete, Estavromenos, Heraklion, Crete, 71004, Greece
****Department of Economics and Business, Neapolis University, Danais , Pafos, 8042,Cyprus

Abstract

Research on the quality of the narrative portion of the annual report has long been hampered by a lack of tools that permit an objective analysis of qualitative disclosure. This study is the first piece of accounting disclosure quality research which proposes a comprehensive index that uses Key Performance Indicators (KPIs) to enhance understanding of the quality of narrative information disclosure in a very important transitional period of 2002 to 2007. Our results show that after the adoption of IFRS, the level of narrative disclosure compliance with the IASB's Management Commentary Framework (MCF) is medium, ranging from 8% to 75%, averaging 53% and this shows that there is much room for improvement with respect to the financial statements. Thus, despite the continued demand for better comparability in financial reporting practices, in our sample, a large number of firms do not seem to converge toward a single set of standards for both the narrative and financial disclosure. On the other hand, the region forced to comply with mandatory requirements (e.g., the US) will not provide a greater amount of disclosure information in their MCF reporting than the regions that are not required to comply with these disclosure guidelines (e.g., Western Europe and Northern Europe).

Keywords: Management Commentary, Narrative Disclosure, IFRS, Financial Reporting Quality
Jel descriptors: M41, G30, M14

1. INTRODUCTION

In recent decades, the financial reporting model has been a subject of debate. Accounting policymakers and academics have emphasized the importance of financial reporting quality – in particular after corporate scandals such as those involving Enron, WorldCom, Global Crossing and etc (Healy and Palepu, 2001) – in ensuring efficiency and transparency in capital markets. (Donoher et al., 2007; ASB, 2009; Diamond and Verrecchia, 1991; Verrecchia, 2001; CICA, 2009).

The size and variety of these scandals is the main reason for the creation of the International Accounting Standards Boards (IASB), the Sarbanes-Oxley Act (SOX) and the International Financial Reporting Standards (IFRS) of 2002.

Increased transparency and disclosure are significant components of SOX. Explicitly, the Act mandates new disclosure regarding pro-forma reports, internal controls, off-balance-sheet financing and insider-trading activity (SOX, 2002). Unfortunately, SOX is one of the most costly pieces of legislation in the recent history of corporate America and thus provides grist for a developing literature in disclosure research (e.g., Bratton 2003, Cohen et al 2005). Additionally, during this period, European Community Regulation No. 1606/2002 required all European Union listed companies to prepare consolidated financial statements in accordance with the International Financial Reporting Standards (IFRS), beginning from 1 January 2005 (Pagletti, 2009). The IFRS was introduced in the EU to provide comparability and quality improvement in firms' financial statements.

Accounting professionals (ICAEW, 1999; CICA, 2009; IASB, 2010) and researchers (Beattie et al., 2004; Beretta and Bozzolan, 2008; Merkl-Davies and Bruni, 2007) have realized the importance of the narrative portion of financial statements as they improve the amount and quality of information provided to investors, lenders, etc. This is referred to as "Management Discussion & Analysis" (MD&A) in the USA, "Operating and Financial Review" (OFR) or "Guidance on the Strategic Report" in the UK and simply "Management Commentary" (MC) in most other countries. The International Accounting Standard Board (2009, 2010) defines the notion of MC as "the information that accompanies financial statements as a part of an entity's financial reporting. It explains the main trends and factors under lying the development, performance and

position of the entity's business during the period covered by the financial statements. It also explains the main trends and factors that are likely to affect the entity's future development, performance and position." The annual report commentary is an important communication tool for directors and management, allowing them to share their views on the company's performance, position and progress during a fiscal period as a complement to information provided in the financial statements (Shi Yun Seah and Tarc, 2006). However, the Management commentary Framework (MCF) is voluntary and leaves firms with plenty of room for discretion of what information they provide and how it is reported (IASB, 2010).

In the last decade, a number of studies have been focused on the narrative sections of corporate disclosure by examining the text (Lehavy et al., 2011). Beattie et al (2004) argue that there are five genres of narrative analyses in annual report texts: subjective analyst ratings, disclosure index studies, thematic content analysis, readability studies, and linguistic studies (Ginesti, 2013). Berger (2011) shows that prior methods have limitations in terms of approaches to measuring disclosure readability and tone and lack agreement in terms of what text is valuable in corporate narrative reports. Therefore, Berger (2011) agrees with Core (2001) in the call for new techniques from other fields of research that liberalize the boundaries of the empirical literature on corporate narrative disclosure.

The main objectives and the novelty of our study were: First, to investigating for a first time a very important transitional period of 2002 to 2007 which appeared to be the Worst Corporate Accounting Scandals of all times as well as the beginning of the most influential accounting and auditing changes of the last century. Essentially this period brought to light the major issues and shortcomings that were actually became part of the narrative information appeared in the financial statements of most companies. For this reason, the Management Commentary Framework (MCF) was considered imperative to be followed by internal auditors, accountants as well as external auditors and investors in order to restore the credibility and to measure reliably the quality of information provided in financial statements.

The second objective and novelty is to use the MCF (IASB, 2010) that includes guidelines in text which encoded (that text) using appropriate Key Performance Indicators (KPIs) from the base of Thomson Reuter (Asset4). This way is proposed for the first time in accounting research and is designed to easily and reliably convert hardly measurable qualitative information into quantitative information with the creation of a new index (the Management Commentary Index-Ma.Co.I.) to measure the quality of narrative portion of Annual reports. Many researchers argue that to create a valuable and reliable tool to measuring the quality of financial statements one should be able to try this tool's effectiveness to periods with actual adverse financial conditions; and thus measurements must provide you the corresponding results.

To evaluate the reliability of Management Commentary Index (Ma.Co.I) we used the Factor Analysis Method. The main goals of Factor Analytical techniques are the following: (1) to reduce the number of variables and (2) to detect structure in the relationships between variables, i.e., to classify variables. Therefore, factor analysis is applied as a data reduction or structure detection method (Thurstone, 1931). The Factor Analysis result shows us whether the management commentary index is of consistent quality throughout the KPIs selected from Asset4 database or not. For those interested in the rigorous evaluation of disclosure practices, the strength of this measure is that it permits assessment of a broader population of firms than that it was previously possible in an attempt to redress a gap in the available toolkit.

This paper is divided into six sections. Section 2 is a concise overview of the literature on narrative reporting quality evaluation. This section also opens the floor for the various measurement tools in the assessment of financial report quality area that are currently used. Section 3 analyses the structure of Management Commentary Index, while section 4 outlines the Validation and Reliability of the proposed Index. Section 5 includes the methodology, while the dataset is implemented, as well as the research structure and the suggested research questions are set. In section 6, the results of the study are presented and discussed at length followed by answers to original research questions while the key findings and implications of this study are recapitulated.

Finally, the section 7 provides concluding remarks.

2. LITERATURE REVIEW

The historical norm requires that a directors' report accompany the accounts presented by the company to the shareholders, while voluntary narratives are usually provided over time (e.g., Chairman's statement). However, this norm has been changing recently, as regulators are increasingly mandating or recommending specific narrative disclosures. An example of such a request is the Management's Discussion and Analysis of Financial Conditions and Results of Operations (MD&A), which was first required in the United States (US) by the SEC in 1968; in the United Kingdom (UK), a similar form of narrative was introduced by the ASB with the publication of guidance on the voluntary supply of the OFR (Operating and Financial Review) in 1993. MD&A and OFR are considered as "Management Commentary" by the IASB.

New regulatory policies were implemented after the Worst Corporate Accounting Scandals of All Time (see table 1).

Table 1. Worst Corporate Accounting Scandals of All Time

Worst Corporate Accounting Scandals of All Time		
Firm Name	***Industry***	***Years***
Enron	Energy and service corporation	December 2001
WorldCom	Telecommunications company	2002
Tyco Scandal	Blue-chip and security systems	2002
HealthSouth	Health care corporation	2003
Freddie Mac	Financial services	2003
American International Group	Insurance services	2005
Lehman Brothers	Financial services	2008
Bernie Madoff	Investment services	2008

These policies introduced revisions to narrative reporting guidance as part of an attempt to enhance corporate reporting models and shed light on corporate operations. Such regulatory changes were implemented by the SEC in 2001, which requested the discussion of critical accounting policies in MD&A. In 2003, the SEC released further guidelines placing emphasis on the identification and discussion of important Key Performance Indicators (KPIs), including indicators of nonfinancial performance, which corporate managers use for decision making purposes and which would provide important material for existing and potential investors (SEC, 2003). Also, in 27 October 2005, Discussion Paper Management Commentary published by IASB.

In the EU in 2003, the Accounts Modernization Directive mandated that all large and medium sized companies publish a Business Review in their Directors' Report (2003/51/EC); in 2004, the Transparency Directive required further alterations to narrative reporting from listed companies (2004/109/EC). Currently, UK listed organizations are required to distribute a directors' "Report with an improved Business Survey" (see FSA, 2004; 2008).

Thus, European Group Regulation No. 1606/2002 required all European Union listed organizations to set up their consolidated financial statements according to the International Financial Reporting Standards (IFRS) beginning 1 January 2005 (Pagletti, 2009). The IFRS was implemented in the EU to ensure comparability and quality improvement in firms' financial statements. Additionally, in 2009, the IASB issued an exposure draft enumerating non-mandatory for management commentary, and in December of 2010, the IASB finished the project and released an IFRS practice proclamation.

Since the adoption of IFRS, the majority of organizations tend to supply more extensive narrative reporting in their annual reports (for instance, see Campbell and Slack, 2008; Orens and Lybaert, 2007; Davison and Skerratt, 2007). Florou et al (2013) noted that the benefits of the adoption of IFRS include "more comparable data, lower transaction costs and greater international investment". In addition, Iatridis (2010) notes that IFRS also assists investors in making "informed financial decisions and predictions of firms' future financial performance and signaling higher quality accounting and transparency". Therefore, the IFRS would tend to decrease "earnings manipulation and improve stock market efficiency", while they would also tend to have a positive impact on stock returns and stock-related financial performance measures. This fundamental change in the quality of corporate reporting will be achieved by using additional narrative information in annual reports, thus paying attention on the management discussion and analysis statement in the annual report.

Deloitte (2006) found that the proportionate volume of narrative reporting represented 52% of an average annual report. Guidance from the United Kingdom (UK) urging organizations to deliver an OFR in 1993 prompted a huge increment in their supply before the obligatory prerequisites outlined in the UK Companies Act 2006. For instance, Deloitte (2006 n533; 2005 n450) found that 76% of UK FTSE 350 listed companies created a formal statement (an OFR) or obviously embraced OFR recommendations in 2006 (68% in 2000). The scarcity of empirical research establishing who uses corporate information and what information they utilize continues to be criticised (see, for instance, IFAC, 2008; Lee et al., 2008; AICPA, 1994; Young, 2006; ICAEW, 2006). Research breaking down user information needs has been suggested particularly in light of narrative reporting (see Campbell and Slack, 2008) and management commentary (see IASB, 2005, 2006, 2009, 2010). This paper attempts to make a contribution about the information that was disclosed in annual reports the period with the Worst Corporate Accounting Scandals of 2002 to 2007 and investigating the use of narrative reporting in this period.

Changes in world economies the previous couple of years have incited companies to re-evaluate the way they define, evaluate and measure corporate performance. Executives and Board members are persistently looking for approaches to upgrade the tools that link corporate strategy to performance, thus enhancing their correspondence with investors and stakeholders in narrative reporting (Babio et al., 2008). Information depicted in financial statements alone may not be adequate for investors and stakeholders to gauge the economic value that an organization has created or its value-creating potential or to predict the sustainability of current performance and cash flows. Providing consistent narrative reports to accompany financial statements is the key for the creation of intelligible and valuable information that is disclosed by a company. Narrative portions are supplemented by financial and non-financial point's material that supports the definition of business strategy and explains the progress that has been made toward stated goals.

2.1. Narrative analyses of annual report texts

For quite some time, studies on organizational communication have concentrated on the impact of organizational performance on the quality and efficiency of organizational communication (Abrahamson and Park, 1994; Abrahamson and

Amir, 1996). Jameson (2000) lauded the virtues of linguistic narrative studies and demonstrated their importance using an analysis of shareholder reports of equity mutual funds. There are five types of narrative analyses of annual report texts (Beattie et al., 2004):

a) Readability studies highlight the clarity of communication using readability indices.

b) Thematic content analysis concentrates on revealing underlying themes while breaking down the entire text.

c) Linguistic studies concentrate on the nuances of language as opposed to a one-dimensional assessment of readability.

d) Disclosure index (partial form of content analysis) considers the presence (or absence) of texts that are defined ex ante.

e) Subjective analyst ratings concentrate on analyst ratings of disclosure information quality and sufficiency.

Narrative analysis studies have focused on either i) the efficiency of disclosure (the first three types of narrative analysis studies) or ii) the breadth and depth of disclosure quality (the remaining two types).

2.2. The efficiency of disclosure

We define efficiency of communication as the relative ease of reading (complexity of the text) or, as it were, "the means by which something is being conveyed". For example, Courtis and Hassan (2002) addressed the contrast in readability of annual reports in various languages (English and Chinese adaptations in Hong Kong and Malay and English in Malaysia) and found that indigenous language renditions were moderately easier to read than their English counterparts.

In the Jones and Shoemaker (1994) review research, there were 32 readability studies (26 of which address annual report narratives). The purpose of the studies is to quantify the cognitive difficulty of the text. This generally involves a readability formula such as the Flesh index. This index is based on a combination of sentence length and word syllable count. Comparing the computed score to the external benchmarks evaluates the degree of difficulty of the text. The annual report narratives are often difficult or very difficult to read. Although this method is as objective and reliable as possible, several problems are associated with the application of readability scores to accounting narratives.

Clatworthy and Jones (2001), in their studies, examine the effect of the thematic content of accounting narratives on the variability of annual report clarity. Moreover, the linguistic formula captures a much richer set of content characteristics and is not connected with readability scores. Sydserff and Weetman (1999) utilized theoretical and applied linguistics to build a text focused technique for scoring narratives. They then showed how investigators can adjust this formula to accounting narratives, particularly the OFR. Moreover, Shi Yun Seah and Tarca (2006) discovered contrasts in weighted and unweighted measures of information disclosed in Management Discussion and Analysis (MD&A) and Operating and Financial Review (OFR) reports among 174 firms in five industry groups in the 2003 financial year.

In addition, thematic and readability formulas have different limitations as per Beattie (2004). The problem with language analysis is that it does not have one type of route for assessing pessimistic or optimistic words. Moreover, two noteworthy disadvantages are apparent when you consider thematic analysis in relation to other qualitative analytic methods. First, it depends more on inadequately directed analyses or inappropriate research questions than on the method itself. Furthermore, the adaptability of the method – which takes into account an extensive variety of scientific choices – implies that there is a wide range of things that can be said regarding the data.

2.3. The depth and breadth disclosure quality

The focus of disclosure quality (when the text supplements other quantitative information and financial material in company annual reports) is "what is being communicated". Beattie, et al. (2004) characterized quality as including two dissociations – 1. the measure of exposure and 2. the spread of disclosure. The measures proposed in their study incorporate "the actual amount of disclosure, relative to the amount expected" and the spread of disclosure “across topics using concentration measures across main topics, sub-topics, and non-empty sub-topics” (Beattie, et al., 2004). Beretta and Bozzolan (2008, 2004) recognize quality as the amount of correspondence. They characterized richness of communication to include the width of disclosure in addition to the profundity of disclosure. They developed a composite index that considers the amount of disclosure and the plethora of its content.

Healy and Palepu (1993) demonstrated that financial reporting in annual reports does not help managers communicate viably with their shareholders. Managers will endeavor to enhance the credibility of their financial reporting by voluntarily providing additional disclosure. Voluntary disclosure lessens agency problems because agents might express the organization's long-term strategy or determine nonfinancial indicators that may help principals to analyze the viability of the strategy (Hossain and Hammami, 2009a). Empirical accounting research on disclosure has concentrated fundamentally on cross-sectional variation in contracting variables to clarify management’s financial reporting decisions (Core, 2001). In addition, as indicated by Gigler and Hemmer (2001), an expanding number of empirical studies began to build hypothetical and theoretical links between the properties of mandatory financial reports and the amount of information that managers provide through voluntary exposure.

According to Srinivasan and Srinivasan (2015), content analysis of voluntary and mandatory disclosure is the prevailing tool of these studies (Swales, 1988; D'Aveni and McMillian, 1990; Tennyson, Ingram and Dugan, 1990; McConnell, Haslem, and Gibson, 1986; Smith and Taffler, 1995; Abrahamson and Amir, 1996; Patelli and Pedrini, 2013; Tsalavoutas, 2011; Smith and Taffler, 2000; Hossain and Hammami, 2009b). The principal strain of firm-based disclosure quality measures depends

on Content Analysis (CA) (basically computerized analysis) or the application and the creation of indices. Although Frazier et al. (1984) present a computerized content explanatory-based strategy for assessing narrative accounting disclosure (footnotes), this methodology is not suitable for less formulaic disclosures, for example, the MD&A.

Computerized content analysis and recorded disclosure data are limited in their ability to address the assessment of disclosure quality for the MD&A of smaller firms. This area of research incorporates studies such as those by Botosan (1997) and Hooks and Moon (1993). Hooks and Moon (1993) provide a checklist of disclosures required and/or proposed by the SEC in the mid-1990s. However, this checklist is intended for general evaluation and does not yield a quantitative score that is suitable for further investigation. Moreover, the SEC has recently extended the types of items that are suitable for consideration in the MD&A. The Hooks and Moon (1993) checklist is now out of date.

Analysts' ratings of the information environment are based on a rich data set that consolidates information about the firm, its industry, and prevailing patterns in disclosure; along these lines, these ratings are able to reproduce investor perceptions of disclosure quality in a genuine investing environment (as in Healy et al., 1999; Lang et al., 1996 and 2001; Botosan et al., 2002).

However, limitations are created from the existing base of information about the company, its industry, and patterns of disclosure, which preclude the ability to analyze the actual disclosure. These measures additionally consign the analysts' evaluation procedure to a "black box", which allows little assessment of the role of business reports in defining choices or judgment. Additionally, they are hard to acquire. Existing databases cover a limited range of years, and only the largest firms are evaluated. Thus, this information essentially introduces a data-driven size bias into studies. Moreover, they are not valuable for analyzing firms with recent public offerings, those in trouble, or those in general danger of contracting issues (i.e., small or closely-held firms). Analysts who are keen on investigating disclosure quality issues among smaller, less well-known, distressed, or younger companies are therefore not able to utilize existing archival databases.

According to Kothari et al. (2009), the most accurate method to measure the quality of narrative information is the disclosure index method. This study addresses the limitation of this method by updating the scope of the MC for the prevalent data environment, offering an approved Management Commentary lndex (Ma.Co.I) for transforming qualitative disclosure into a quantitative variable suitable for statistical analysis and allowing more in-depth assessment of the MC. To the best of our knowledge, this is the first accounting disclosure quality research that makes a contribution about the information that was disclosed in annual reports the period with the Worst Corporate Accounting Scandals of 2002 to 2007 and investigating the use of narrative reporting in this period.

This period is very crucial because it provides the appropriate elements to propose a new index in order to evaluate the quality of narrative information; one should first investigate the period with the Worst Corporate Accounting Scandals of all times. This research provides evidence to better understanding the non disclosed information and place more emphasis in the following period. Also we want to investigate is the disclosure quality in moderate disclosure levels to evaluate these scandals.

3. THE STRUCTURE OF MANAGEMENT COMMENTARY INDEX (MA.CO.I)

The Ma.Co.I provides the capacity to assess the disclosure quality of the firm's Management Commentary and to produce a quantitative value for that quality that might then be utilized as a part of further empirical analysis. Our technique is implemented in two stages as depicted below:

3.1. First stage

One study singled out by numerous analysts as the beginning of disclosure scoreboards was performed by Cerf (1961). In this study, a disclosure index was created to quantify the degree of disclosure in the corporate annual reports of 527 US companies. Singhvi and Desai (1971) built a disclosure index consisting of 34 disclosure items, such as Cerf's 31 items and weights, to distinguish attributes connected with disclosure quality and to examine the plausible ramifications and quality of financial analysts' decision-making process for investing. Cooke (1989) refined a disclosure scoreboard comprised of 224 items, which in substantial parts originated from past disclosure indexes.

Despite the fact that disclosure scoreboards demonstrated significant variety in terms of the degree and estimation of disclosed information, these authors share in the enthusiasm for data issued to investors. A sequential audit of the most frequently cited disclosure information demonstrates how current disclosure scoreboards have advanced and how numerous checklists are based on earlier disclosure studies (Rimmel, 2003). Therefore, the measure of revealed information in annual reports is of inevitable significance to disclosure theory, as these types of studies regularly accept that the measure of disclosure is an intermediary for the nature of the disclosure (Beattie et al., 2004). Moreover, numerous studies on disclosure accept that an elevated amount of disclosure reflects the attempt by enterprises to fulfill the data needs of a varying group of stakeholders.

During the last decade, many studies have proposed the use of indexes (Lori Holder-Webb, 2007; Ginesti et. Al., 2013 and Macchioni et al., 2013) however, they mainly focus on a small sample of enterprises from a limited sample of countries within a relatively short time period. Gianluca's, 2013 and Macchioni et al 2013 not only use a short timeframe of one year (ex. 2013 and 2011 respectively) and corporations from a single country but also fail to include in their limitations the effects of the economic crisis on the entities under investigation, a characteristic of great importance. We propose a new checklist called the Management Commentary Index (Ma.Co.I) that was developed for the detailed evaluation of financial reporting quality

and was initially presented by the FASB and the IASB in the 2010 publication, “Practice Statement Management Commentary” or “Management Commentary Framework” (IASB, 2010; Lori Holder-Webb, 2007).The amount of narrative information revealed in an annual report is what determines an MC’s quality. The Ma.Co.I includes of 37 constituent points that are classified into five categories as follows:

Category 1: The nature of the business
Category 2: Objective and strategy
Category 3: Key resources, risks and relationships
Category 4: Results and prospects
Category 5: Performance measures and indicators

Each category explores a different aspect of a company. Category 1 addresses the nature or structure of a company, i.e., competition issues, regulatory matters, and macro contexts that illustrate the role of the company in the market. For category 2, the strategy plans and goals of a company are included and prioritized. Category 3 comprises the company’s key resources as well as the risks involved and relationships with other institutions or entities. Special focus is given to the inter- and intra-associations and the managing of crucial risk parameters. Category 4 emphasizes the company’s outcomes and prospects and addresses the financial and non-financial progress of a company. Finally, category 5 provides insights into the historical or diachronic company progress as it is derived from performance measures and other indicators

These five categories are presented in Table 2, with their codes for the points and the number of points used in this research. The points selected after thoroughly consideration of Management Commentary Framework (MCF) of 2010 which proposes specific guidelines that must be disclosed in Annual Report for maximizing the quality of information (see also Appendix 1 for details).

Table 2. Descriptions of Points

Codes of Points	***Description of Points***
Category 1: Nature of the Business	
1	Description of the nature of the business and business segments
2	Discussion of products
3	Discussion of business/board structure
4	Discussion of operating environment
Category 2: Objective and strategies	
5	Discussion on financial objectives/strategies of the business
6	Time frame for achieving financial objective
7	How non-financial objectives monitoring and create or preserve value
8	Significant changes in objectives and strategy
9	A strategy of the vision and value of the business
10	Discussion of how value & objectives relates to strategy
Category 3: Key resources, risks and relationships	
11	Discussion of key financial resources available to the company
12	Discussion of the key non-financial resources available to the company
13	Adequancy of financial and non-financial resources
14	Analysis of capital structure
15	Analysis of financial arrangements
16	Discussion of liquidity and cash flows of the business
17	Plans to address any identified inadequacies or surplus of resources
18	Potential impact of the identified risks and how they are managed
19	Identification of key external and internal risks and opportunities
20	Explanation changes in risk management
21	Discussion of key relationship in place e.g. employees
22	How key relationships are managed and likely impact on business
Category 4: Results and prospects	
23	Explanation of the development and performance of the entity during the year
24	Explanation of the financial position at the end of the year
25	Discussion of significant changes in financial position
26	Variability of quarterly sales over the last three years. AND Net Income growth (three-year annual growth).
27	Extent to which past results are indicative of future progress /results
28	The management of the firm set specific objectives and explain how to achieve them?
29	Analysis of improvements/prospects of the entity AND how implement its targets/strategies about future.
30	Identification of objectives/targets for non-financial measures
Category 5: Performance measures and indicators	
31	Discussion of key financial measures used to measure and assess improvement progress
32	Discussion of key non-financial measures used to measure and assess progress
33	Changes in the quantified measures or indicators reported
34	Identification of key financial and non-financial indicators that it uses to monitor progress
35	Explanation of how each measure, or quantified indicator, reported in MC has been defined and calculated
36	Consistent reporting of performance measures and indicators
37	Discussion of the purpose of each reported measure should be disclosed

3.2. Second stage

In the second stage, we derived the Narrative information that was requested from the Final Management Commentary Framework (MCF) of 2010 using the points in Table 2 above. This required modern methods and tools can overcome the problems (in Literature) of previous methods and deliver accurate and reliable information provided by the annual financial statements of each company. In regard to the Management Commentary Framework, which addresses the changing needs of users, corporate reporting should offer more

information with a forward-looking perspective and must emphasize those factors that produce longer-term value, in addition to providing extra-financial measurers and information on the performance of key business procedures. Thus, Key Performance Indicators play a central role. Managers use KPIs more and more to assess their business, but investors and analysts could also take advantage of them to a much greater degree. In principle, Key Performance Indicators are of particular interest because they are assumed to be leading indicators of future financial results (Elzahar et al., 2015).

Parker (2005) found that if used correctly, KPIs can offer solid and concise information that complements the narrative discussion in firm reports. Doni et al. (2011) used the Enhanced Business Reporting Consortium (EBRC) framework, which is structured from a set of Key Performance Indicators based on three business management domains (Demand Management, Support Services and Supply Management) and realized that stakeholders and investors would be better off if they were able to compare and make use of this strategic information in decision making.

Moreover, Tauringana and Mangena (2009) investigated the reporting of Key Performance Indicators using 32 UK media sector firms listed on the London Stock Exchange (LSE) over the period 2004 to 2007. In fact, to the best of our knowledge, the only study focusing on KPIs reporting that is related to this study is, to some extent, the paper by Dorestani and Rezaee (2011). The authors examine the association between the accuracy of analysts' forecasts and non-financial KPIs disclosure for a sample of US companies for the two-year period comprising 2006 and 2007.

Based on these findings, our study used a sample of Key Performance Indicators (KPIs) for a new measurement index (Ma.Co.I) that measures the quality of Annual reports. An important aspect of this research is that it uses 70 KPIs for 37 points, taken by the Management Commentary Framework (MCF) of 2010. This was the case because some points require more than one KPI to cover the information suggested by the MCF. Therefore, the maximum quality score of the index is reached when the annual financial statement includes 70 KPIs. The information on the number of appropriate KPIs is given by the Factor Analysis method. Some points need more than one KPI to cover the appropriate amount of information (for example, refer to Appendix 2, where point 2 uses 3 KPIs). Furthermore, the Appendix 2 proposes the final checklist of Management Commentary Index (Ma.Co.I) with 70 KPIs.

4. VALIDATION AND RELIABILITY OF MANAGEMENT COMMENTARY INDEX

Validity specifies the range within which an instrument measures what it is purported to measure; in this study, validity pertains to whether the Ma.Co.Index efficiently measures the content of the Ma.Co.Index in a manner that is complete and can be replicated. This requires establishing the content and construct validity of the measure, as well as the continuity of results, by applying the measure between evaluators (inter-rater reliability).

4.1. Content Validity

Content validity is the degree to which an apparatus or operationalized variable maps against the pertinent content domain (Trochim 2000). In the case of Ma.Co.I content, the content domain is essentially established by the MCF of 2010, who set the voluntary reporting requirements for all publicly traded firms. The Ma.Co.Index is generated in response to an IASB requirement to provide this information in a well-defined report (Appendix 1).

To the extent that the accountability for determining the reporting guidelines eventually rests with the IASB, the criteria that compose the content domain are definitively established. To the extent that the Ma.Co.Index is drawn directly from that material, the Index possesses content validity.

4.2. Construct Validity and Reliability

Construct validity regulates the degree to which insinuations can be made from the variable arising from the measurement process (Trochim 2000). To establish the construct validity of the Ma.Co.I score, this study follows two measures. The first measure used the main methodology established by Elzahar et al, 2015, pp.13, who develop a measure for the quality of the KPI disclosure. In line with the Financial Reporting Council (2009), disclosing the information suggested by the guidelines should specify the quality of the Key Performance Indicator. Thus, our measurement tool considers the content of the Key Performance Indicators disclosure that should enrich the discussion and analysis.

The disclosure score of the Ma.Co.Index indicates the extent of disclosure compliance with the MCF. Based on this, a dichotomous scoring approach is applied by manually capturing each KPI's disclosure quality. If a required quality dimension is met, it is scored as one; otherwise, it is scored as zero. If a quality dimension is not applicable to a specific KPI, it is scored as 'not applicable' (NA) (e.g., Cooke, 1992). Consequently, the Ma.Co.Index total disclosure score is measured for each firm with the following formula:

$$T = \sum_{i=1}^{m} d_i$$

where:

d_i is the score of each Key Performance Indicator ("1" if the item is mentioned and "0" otherwise), and m is the maximum number of KPIs (70 disclosure items in total) that is expected to be disclosed by firms in compliance with MCF. The value of T depends on the number of KPIs disclosed by the firms. In addition, the quality and quantity score of the Ma.Co.Index for each firm lies between 0 and 100 or 0 and 70.

To derive our second measure of KPIs disclosure quality, we draw on the ASB (2006) guidelines. These guidelines describe the key qualitative characteristics of each KPI (see also Appendix 3) that must be selected to derive the appropriate information for each point.

Elzahar et.al, 2015 argue that if the KPIs disclosures meet these characteristics, the reporting

should be of high quality. In addition, to eliminate any doubts about the characteristics of the KPIs in our research, we selected all KPIs from the world expert database on the specific subject, i.e., the Thomson Reuters Corporate Responsibility Indices (TRCRI), which adheres to these characteristics.

4.3. Reliability

A necessary and important step in the development of an index for calculating content is to ensure that multiple individuals are able to use the index with consistent (reliable) results. One method to assess this reliability is statistical comparisons of the inter-rater consistency. To this end, we provide an example of how we calculate the overall quantity and quality of Annual Reports with KPIs items (see also Appendix 4). To increase the reliability of the results, the page and paragraph of the item had to be specified.

Before scoring all of our sample firms, we conduct a pilot study on a randomly selected sample of twenty annual reports to address the validity and reliability of our instrument (cf., Tsalavoutas et al., 2010). We first develop decision rules, and these are used as a reference while coding. Furthermore, each researcher independently codes the annual reports of the pilot study sample to ensure consistency in applying the rules. Additionally, we perform nonparametric tests (Kruskal-Wallis) to compare the quality scores that were coded separately. These indicate that there is no significant difference between the median scores, verifying the reliability of our research instrument (results are available upon request). While following this process we noticed that companies fail to disclose KPIs in the Business Review as well as in other areas of the annual report.

Another way to measure reliability is factor analysis (OECD, 2008). Factor analysis is an important tool that can be used in the development, refinement, and evaluation of tests, scales, and measures in various fields of scientific research including corporate financial distress, portfolio selection, financial analysis, exposure to risk factors and clinical contexts. There are many excellent works on factor analysis, including Geweke (1977), Sargent and Sims (1977), Engle and Watson (1981), Peña and Box (1987), Stock and Watson (1998, 2002a, 2002b, 2004), Quah and Sargent (1993), Forni, Lippi, and Reichlin (2005), Breitung and Kretschmer (2005), Doz, Giannone, and Reichlin (2006), Heaton and Solo (2006), and Williams, et al. (2012). Wherry (1984) explains in detail the interpretation of secondary factors in hierarchical factor analysis as an alternative to traditional oblique rotational strategies. This research approach is based on the multivariate data reduction techniques of principal component analysis and exploratory factor analysis. The methodology reduces the number of dependent (performance) variables by employing principal component analysis to construct a reduced-form performance vector.

Decision variables, whether technological or organizational, are grouped and reduced using exploratory factor analysis. The main goals of factor analytic techniques are the following: (1) reducing the number of variables and (2) detecting the structure in the relationships between variables, i.e., classifying variables. In this study, to examine the reliability of this instrument, factor analysis was applied using principal component analysis for user satisfaction as well as managerial performance and financial performance constructs. We evaluate whether this study is sufficient for this analysis. In all five construct variables, values of KMO are higher than 0.5 (Hinton, et al. 2004), and the results of Bartlett's test of sphericity are significant; thus, we proceed to factor analysis.

Table 3. Tests for Factor Analysis in total sample

	Categories	*Number of Points per category*	*Number of KPIs*	*Variables Reductions %*	*KMO*
PIFRS	1	4	7	80,55	0,622
	2	6	7	72,72	0,779
	3	12	29	93,69	0,876
	4	8	13	83,87	0,933
	5	7	16	89,13	0,942
AIFRS	1	4	7	68,42	0,857
	2	6	7	70,38	0,755
	3	12	29	69,66	0,955
	4	8	13	68,83	0,942
	5	7	16	78,73	0,969

We examine all variables per category in terms of reliability. In this case, reliability analysis was conducted to test the internal consistency of each variable using Cronbach's alpha. According to Hair et al. (2009), the lower limit is generally 0.60. Cronbach's alpha for all cases (e.g., PIFRS and AIFRS) are above 0.894. In addition, the total Variable reduction % for the period PIFRS is 92%, and for the AIFRS, it is 75.67. Therefore, factor analysis is applied as a data reduction or structure detection method (Thurstone, 1931). We grouped related items to reduce the number of variables. The originally identified factors were minimized. Now, we proceed by analysing the core factors in this study.

We continue our analysis with the T-test method, more specifically conducting the Levene tests for differences in the dispersions of the individual samples. The T-test is carried out for each region (the US, Western Europe-WE, North Europe-N.E.) according to the category of the areas concerned and involves the two sets of values, one for the period prior to the adoption of International Accounting Standards (pre-IFRS) and one for the period after the adoption of International Accounting Standards (after-IFRS).

Table 4. Statistical check t for the comparison of averages by region

Regions	*t*	*Areas t statistic significance (Bilateral / 2-tailed)*
US	-12,515	0,000 (***)
WE	-7,712	0,000 (***)
NE	-7,180	0,000 (***)

No statistical significance is found in Table 4 (Sig. = 0.760> 0.05), and thus we conclude that the dispersions do not differ and the results of the T-test for the creation of the Ma.Co.I index are reliable and statistically significant at the 1% significance level.

In summary, after the appropriate analysis and techniques are established, the Ma.Co.Index can be characterized as valid and reliable, as in the case of the new tool in Appendix 2, and thus, we can proceed to the examination of our research methodology and Research Questions.

5. RESEARCH METHODOLOGY

5.1. Sample and Data

Our measurement tool analyses the narrative reporting quality of 524 of the largest companies in Western Europe (WE), Northern Europe (NE) and the United States (US). These regions were chosen for the following reasons:

First, the US and Europe were the Regions that first created the Narrative frameworks MD&A, OFR and Management Commentary (MC), which is the basis for the creation of the Ma.Co.Index. Moreover, we deliberately divided our sample into two parts to make the examination easier and more accurate. The first part includes countries that are required to use Management Commentary (MC) (e.g., the US), and the second part includes European countries where MC is voluntary. Subsequently, EU countries were divided into Western European Countries (Switzerland, France, Germany, the Netherlands, and Belgium) and Northern European Countries; Southern European and Eastern European countries were not included as by definition these countries tend to be poorer, and the companies residing in them rarely achieve the levels of quality of Western companies. Furthermore, these regions and sectors have been selected because capital markets are important financial resources for the companies in each country.

Table 5. Sample's firms' origin and sectors

Country	*REGION*	*Number of firms in the sample*	*Sectors*
AUSTRIA	WE	8	1, 3, 6
BELGIUM	WE	14	1,2,4,5,6
DENMARK	NE	10	1,2,4,5,6
FINLAND	NE	11	1,3,5,6
FRANCE	WE	36	1,2,3,4,5,6
GERMANY	WE	28	1,2,3,4,5,6
IRELAND	NE	6	2,5,6
NETHERLANDS	WE	15	1,2,3,4,5,6
NORWAY	NE	12	2,3,5,6
SWEDEN	NE	25	1,2,3,4,5,6
SWITZERLAND	WE	28	1,3,5,6
UNITED KINGDOM	NE	65	1,2,3,4,5,6
UNITED STATES	USA	266	1,2,3,4,5,6
Total sample	-	**524**	-

We did work to have a representative sampling based on stock market significance and geographical and industrial variety (Hossain and Adams, 1995). Our sampling was determined by five criteria from the TRCI database:

A. *Company's position*
B. *Market including financial and commercial performance*
C. *International presence*
D. *Peer groups*
E. *Previous report performance*

It is noteworthy that, occasionally, these criteria contradict or complement one another.

5.2. Sample special characteristics

We investigate the period 2002-2007 because it represents an ideal transition period (scandals period and important accounting changed period) to objectively verify the quality and quantity of narrative information offered by the financial statements in the regions (the US and Europe), the reason for which the narrative Frameworks (MC, MD&A and OFR) were first created. This period is considered ideal because it was during this time that the global financial and audit community acknowledged that the financial status of many companies does not reflect the quality and reliability they profess; one of the largest scandals in late 2001 was perpetrated by Enron and other large companies such as WorldCom and Global Crossing. In this study, the research period is interrupted in 2007 due to the reliability of the results; in the middle of 2008, the largest bankruptcy of the post-war decades occurred, the collapse of Lehman brothers, which sparked the greatest economic crisis of the last 100 years.

Additionally, during this period, huge accounting and auditing changes were created and implemented so that the credibility of investors and the entire economy could recover. The most important of these are listed in the following timeline.

Timeline of events affecting the narrative accounting portion:

- In 2002, the International Accounting Standards Board (IASB) was established by certain countries, including the United States, to develop International Financial Reporting Standards (IFRS), a new global accounting standard.

- On July 30 of 2002, the Sarbanes–Oxley Act, also known as the "Public Company Accounting Reform and Investor Protection Act," was created.
- In 2003, The New York Stock Exchange received SEC approval for new corporate governance standards for listed companies, requiring boards to have a majority of independent directors, as well as nomination, compensation and audit committees to consist solely of independent directors.
- In 2005, the European Union (EU) announced that its member states will require IFRS in the preparation of consolidated financial statements of listed companies.
- On 27 October 2005, the Discussion Paper Management Commentary was published by IASB.
- In January 2006, the statement Operating and Financial Review (OFR) was replaced by the FRC's Guidance on the Strategic Report.
- In February 2006, the FASB and the IASB issued a Memorandum of Understanding (MoU). In the MoU, the two Boards reaffirmed their shared objective of developing high-quality, common accounting standards.
- In 2007, the SEC issued a rule that allows foreign issuers to file financial statements with the SEC using IFRS without having to reconcile with U.S. GAAP. Until 2007, foreign companies that filed with the SEC were required to reconcile their financial statements with U.S. GAAP.

Moreover, there is no prior research that analyzes in such depth the information of the management commentary over such a wide time interval (2002-2007) and across such a wide range of companies and countries (e.g., Robb et al, 2001; O' Sullivan and Percy, 2004; Brown and Tarca, 2007; Beattie et. al, 2004; Davis and Tama-Sweet, 2012).

Finally, as previously mentioned, we wanted to examine the quality and quantity of information in the financial situations of this transitional period, avoiding the irregularities of the period before 2002 and after 2007, so that the results of our study are not compromised or misrepresented.

5.3. Research questions

This study submits Research Questions (RQ) after considering the firms of all countries in a single sample consisting of three sub-samples (e.g., firms from NE, WE and the US), where there are clear differences in approach to the MC requirements and their enforcement. In contrast to questions 1 and 2, where the analysis is divided by region to determine whether the Ma.Co.Index – which measures the quantity and quality of narrative information – increased after the adoption of IFRS and whether the mandatory requirements for the narrative portion adopted by the US translate into significantly qualitative financial statements. We divided our analysis into two parts. The analysis per Region and the analysis of Full Sample; the following research questions are considered:

5.4. Per Region

RQ 1: In transition period (2002-2007) the firms provide in average a medium amount (< 55%) of narrative disclosure information?

RQ 2: Is there a substantial difference in disclosure level in the MC reports among Western Europe, Northern Europe and the US regions for the pre-IFRS and post-IFRS periods?

RQ 3: Regions forced to comply with mandatory requirements (e.g., the US) will provide a greater amount of disclosure information in their MC reporting than the Regions that are not obliged to comply with these disclosure guidelines (e.g., Western Europe and Northern Europe).

5.5. Full Sample

RQ 4: Which categories and which KPIs in the Ma.Co.Index are affected (positively or negatively) after the adoption of IFRS?

6. ANALYSIS

6.1. Per Region

The first two research questions are answered by the results in table 5, where a positive difference in the quality of the Ma.Co.Index is identified after the introduction of international accounting standards in all three regions examined. This shows us that the application of IFRS has positive effects on the quality of financial statements, although not at the rate that some would expect. Thus, even today, several modifications are made in order to strike the right balance between the quantity and quality of financial and narrative information regardless of country, size, region, law and language.

The second important element that arises from table 6 below is that the mandatory disclosure of narrative information (MD&A) applied by the US does not provide more qualitative results in the annual financial statements in relation to the voluntary disclosure applied by the EU thus far. Thus, discussions about the problems that exist in the financial statements do not seem to suggest that they result from voluntary disclosure, as some studies suggest. Whether any serious company wants to disclose its details (financial or narrative) in order to provide better and more reliable information to its investors and its shareholders or not does not seem to be affected by it. We simply believe that these companies do not have a specific standard such as the Ma.Co.I that provides the quality of information that they desire. Thus, we propose that our index is very important for both companies and their auditors, as they have a common standard, and as a result neither of them avoids major responsibilities.

Research questions 3 to 6 examine in detail all of the categories and KPIs of the Ma.Co.Index in the full sample.

Table 6. Ma.Co.I values per geographic region

Regions	*A-IFRS*	*P-IFRS*	*Average*	*T-test*
U.S.A.	0,535445757	0,482081828	0,508763793	**0,000 (***)**
Northern Europe (N.E.)	0,527938728	0,481518482	0,504728605	**0,000 (***)**
Western Europe (Δ.E.)	0,530106257	0,475331831	0,502719044	**0,000 (***)**

(***): Statistical significance at 1%

6.2. Full Sample

Research Question 4 examines which categories and which KPIs in the Ma.Co.Index were affected (positively or negatively) after the adoption of IFRS. During the period 2002-2007, we observe that the financial statements of the companies in our survey following the introduction of IFRS are more qualitative as a whole (Table 7); nevertheless, it should be clear that the quality rate is marginally above average, and this shows that there is much room for improvement with respect to the financial statement.

Table 7. Qualitative categorical results in both periods

A%		*B%*		*C%*		*D%*		*E%*		*Full Sample %*	
PIFRS	***AIFRS***	***PIFRS***	***AIFRS***	***PIFRS***	***AIFRS***	***PIFRS***	***AIFRS***	***PIFRS***	***AIFRS***	***PIFRS***	***AIFRS***
0,66	0,68	0,55	0,55	0,57	**0,65**	0,35	0,40	0,25	0,29	0,47	0,51

Specifically, we note that during the period 2002-2004 before the introduction of IFRS, in the total sample of our survey rate, the quality percentage of the financial statements reaches 47%, while during the period 2005-2007 after the introduction of IFRS, there is an increase of 51 %. More specifically, in class A (The nature of the business), 68% is the highest percentage of index quality MA.CO.I; this is logical as in this category, information for the investor is included, for example, the company's activity branch, the markets addressed, its products and its structure in general. Next, class C (Key resources, risks and relationships) is the category with the largest increase in the proportion of published information – 65% – after the implementation of IFRS in relation to the prior period – which was 57%. Increasing quality at this level is very important and encouraging because in this category, information about the Risks, Resources and Relations of the company are described, which was one of the goals of the International Accounting Standards. In classes D (Results and prospects) and E (Performance measures and indicators) there is a significant increase of 5% and 4%, respectively, but here, we see that the information lags significantly in comparison with the other categories because its rates are below 50%. Finally, in category B (Objective and strategy), we observe that the quality of information remains constant for both periods.

7. CONCLUSION

The current research adds new insights related to the quality and the form of narrative reporting in the business sector to the existing literature. Few researches have attempted to analyze the Management Commentary of financial statements as a management information tool; however, the results presented a theoretical basis of assessment that opens the floor for future directions on quality financial disclosures. The narrative information provided is gained considerable attention in current years. Thus, examining quality and core characteristics of disclosure, it could enhance in greater transparency and evident comparability between companies.

The novel of this research is not only one but multiple. First, provides a new index (tool) that can be customized to translate qualitative information provided in the MC into a quantitative measure that can be used in a variety of experimental and other research contexts. The tool permits evaluation of any publicly-traded company, unlike the size-biased and other characteristics (e.g. country and region). Moreover, the tool yields a quantitative score that reflects the percentage of disclosure opportunities (with respect to the MC) that the managers of the firm chose to exercise and thus permits objective comparison between firms. Likewise, the tool may be useful for investors and analysts who wish to track the quality of a given firm's disclosures from year to year, or to develop a benchmark for MC quality for a given industry and evaluate firms against that. Moreover, the tool could also be used in an experiment to assess the degree to which individual characteristics (such as experience, training, education, etc.) affect a person's perception of the quality of an MC.

The efficiency of the proposed tool is that it includes financial and non-financial KPIs, in a way that one can effectively trace back significant narrative information and directly correlate it with relative financial information, either on a yearly or over a three year base fragment. In this way, qualitative as well as quantitative information are implicitly identified, so as to guarantee the success of the selection of KPIs chosen per category.

Second novelty, there is no prior research that analyzes both the depth of information management commentary over such a wide transition period (2002-2007), along with such a wide range of companies, countries and regions.

Third, this research results disclose the credibility of the Ma.Co.Index in both ways, either by statistical methods used or by actual financial events actually took place. Results of the analysis performed, demonstrate the informative dimension of the proposed index, and as such are also displayed in Tables 3 and 4. The collapse of Lehman Brothers, a major financial event that triggered the greatest global economic crisis of recent years is being indirectly revealed taking into account results in Table 6 (% values of Ma.Co.Index per geographical region). The accountability of this information can be identified from table 5, as quality of Ma.Co.Index amounts up to 47% for the pre-IFRS and 53% for after-IFRS period, for both sample regions. The results may indicate an increase for the after-IFRS period, but the published information remains at moderate levels of quality of financial statements, to increase in a way the likelihood of a setting a possible negative event. Using Ma.Co.Index is an emphatic reinforcing monitoring and management tool to be able to identify and practically relate quality of disclosure with possible occurrence of either positive or negative financial events.

Furthermore, the mandatory narrative disclosures which the United States imposed in their firms do not increase the quality of Annual reports; the results show equivalent quality information between voluntary and mandatory principles. Moreover, in categories D and E companies should emphasize more because these categories have the lowest results of disclosure information in the financial statements.

Finally with the proposed framework one can be aware in assessing the degree to which individual characteristics (such as experience, training, education, etc.) may affect a person's perception of the quality of MC information.

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APPENDIX

Appendix 1. IFRS Practice Statement Management Commentary published by the IASB, 2010 pp 12-16

No of Points	*Categories*
Category 1: The nature of the business	
Point 1	(a) the industries in which the entity operates;
	(b) the entity's main markets and competitive position within those markets;
	(c) significant features of the legal, regulatory and macro-economic environments that influence the entity and the markets in which the entity operates;
Point 2, Point 3	(d) the entity's main products, services, business processes and distribution methods;
Point 4	(e) the entity's structure and how it creates value.
Category 2: Objective and strategy	
Point 5 , Point 7	Management should disclose its objectives and strategies in a way that enables users of the financial reports to understand the priorities for action as well as to identify the resources that must be managed to deliver results. For example, information about how management intends to address market trends and the threats and opportunities those market trends represent provides users of the financial reports with insight that may shape their expectations about the entity's future performance.
Point 6	Management should also explain how success will be measured and over what period of time it should be assessed.
Point 8	Management should discuss significant changes in an entity's objectives and strategies from the previous period or periods.
Point 9, Point 10	Discussion of the relationship between objectives, strategy, management actions and executive remuneration is also helpful.
Category 3: Key resources, risks and relationships	
Resources	
Point 11, Point 12	Management commentary should set out the critical financial and non-financial resources available to the entity and how those resources are used in meeting management's stated objectives for the entity. Disclosure about resources depends on the nature of the entity and on the industries in which the entity operates.
Point 13, Point 17	Analysis of the adequacy of the entity's capital structure, financial arrangements (whether or not recognized in the statement of financial position), liquidity and cash flows, and human and intellectual capital resources, as well as plans to address any surplus resources or identified and expected inadequacies, are examples of disclosures that can provide useful information.
Risks	
Point 18	Management should disclose an entity's principal risk exposures and changes in those risks, together with its plans and strategies for bearing or mitigating those risks, as well as disclosure of the effectiveness of its risk management strategies. This disclosure helps users to evaluate the entity's risks as well as its expected outcomes. Management should distinguish the principal risks and uncertainties facing the entity, rather than listing all possible risks and uncertainties.
Point 19	Management should disclose its principal strategic, commercial, operational and financial risks, which are those that may significantly affect the entity's strategies and progress of the entity's value. The description of the principal risks facing the entity should cover both exposures to negative consequences and potential opportunities.
Point 20	Management commentary provides useful information when it discusses the principal risks and uncertainties necessary to understand management's objectives and strategies for the entity. The principal risks and uncertainties can constitute either a significant external or internal risk to the entity.
Relationships	
Point 21	Management should identify the significant relationships that the entity has with stakeholders, how those relationships are likely to affect the performance and value of the entity, and how those relationships are managed.
Point 22	This type of disclosure helps users of the financial reports to understand how an entity's relationships influence the nature of its business and whether an entity's relationships expose the business to substantial risk.
Category 4: Results and prospects	
Results	
Point 23, Point 24	Management commentary should include explanations of the performance and progress of the entity during the period and its position at the end of that period. Those explanations provide users of the financial reports with insight into the main trends and factors affecting the business.
Point 28	In providing those explanations, management should describe the relationship between the entity's results, management's objectives and management's strategies for achieving those objectives.
Point 25, Point 27	In addition, management should provide discussion and analysis of significant changes in financial position, liquidity and performance compared with those of the previous period or periods, as this can help users to understand the extent to which past performance may be indicative of future performance.
Prospects	
Point 30a	Management should provide an analysis of the prospects of the entity, which may include targets for financial and non-financial measures.
Point 29	This information can help users of the financial reports to understand how management intends to implement its strategies for the entity over the long term.
Point 30b	When targets are quantified, management should explain the risks and assumptions necessary for users to assess the likelihood of achieving those targets.
Category 5: performance measures and indicators	
Point 31, Point 32	Performance measures are quantified measurements that reflect the critical success factors of an entity. Indicators can be narrative evidence describing how the business is managed or quantified measures that provide indirect evidence of performance. Management should disclose performance measures and indicators (both financial and non-financial) that are used by management to assess progress against its stated objectives.
Point 33a	Management should explain why the results from performance measures have changed over the period or how the indicators have changed. This disclosure can help users of the financial reports assess the extent to which goals and objectives are being achieved.
Point 34	The performance measures and indicators that are most important to understanding an entity are those that management uses to manage that entity. The performance measures and indicators will usually reflect the industry in which the entity operates.
Point 37	Comparability is enhanced if the performance measures and indicators are accepted and used widely, either within an industry or more generally. Management should explain why the performance measures and indicators used are relevant.
Point 36	Consistent reporting of performance measures and indicators increases the comparability of management commentary over time. However, management should consider whether the performance measures and indicators used in the previous period continue to be relevant.
Point 33b	As strategies and objectives change, management might decide that the performance measures and indicators presented in the previous period's management commentary are no longer relevant. When management changes the performance measures and indicators used, the changes should be identified and explained.
Point 35	If information from the financial statements has been adjusted for inclusion in management commentary, that fact should be disclosed. If financial performance measures that are not required or defined by IFRSs are included within management commentary, those measures should be defined and explained, including an explanation of the relevance of the measure to users. When financial performance measures are derived or drawn from the financial statements, those measures should be reconciled to measures presented in the financial statements that have been prepared in accordance with IFRSs.

Appendix 2. The Management Commentary Index (Ma.Co.I)

Number of Points	Description of Points	Number of KPIs	Description of KPIs
	A. Nature of the Business		
1	Description of the nature of the business AND business segments	1	A detailed description of a company's operations. It may include any or all of the following items: A general comment concerning the company's type of business (1) The size of the company, if relevant (2) Number of offices, stores, restaurants, … (3) Represent the Business line as reported by the company.
2	Discussion of products	2	Does the company have a policy to protect customer health & safety? AND Does the company have a products and services quality policy?
		3	Does the company describe the implementation of its product responsibility policy?
		4	Does the company monitor the impact of its products or services on consumers or the community more generally?
3	Discussion of business/board structure	5	Does the company describe the implementation of its balanced board structure policy?
4	Discussion of operating environment	6	Does the company have a policy for ensuring equal treatment of minority shareholders, facilitating shareholder engagement or limiting the use of anti-takeover devices?
		7	Does the company describe the implementation of its shareholder rights policy?
	B. Objective and strategies		
5	Discussion on financial objectives/strategies of the business	8	Does the company describe the implementation of its integrated strategy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its integrated strategy through the establishment of a CSR committee or team?
6	Time frame for achieving financial objective	9	The maximum time horizon of targets to reach compensation incentives.
7	How non-financial objectives monitoring and create or preserve value	10	Does the company monitor its integrated strategy through belonging to a specific sustainability index or conducting external audits on its reporting?
8	Significant changes in objectives and strategy	11	Does the company set specific objectives to be achieved on resource efficiency? AND Does the company comment on the results of previously set objectives?
		12	Does the company have the necessary internal improvement and information tools to develop attractive and performance-oriented compensation policy?
9	A strategy of the vision and value of the business	13	Does the company have a policy for maintaining an overarching vision and strategy that integrates financial and extra-financial aspects of its business?
10	Discussion of how value & objectives relates to strategy	14	Does the company set specific objectives to be achieved on the integrated strategy?
	C. Key resources, risks and relationships		
11	Discussion of key financial resources available to the company	15	Return on equity (ROE).
		16	The company's credit rating as provided by Fitch (AAA (24 points); AA+ (23 points); AA (22 points); AA- (21 points); A+ (20 points); A (19 points); A- (18 points); BBB+ (17 points); BBB (16 points); BBB- (15 points); BB+ (14 points); BB (13 points); BB- (12 points); B+ (11 points); B (10 points); B- (9 points); CCC+ (8 points); CCC (7 points); CCC- (6 points); CC+ (5 points); CC (4 points); CC- (3 points); C (2 points); D (1 points); DD (1 points); DDD (1 points)).(26)
		17	Net debt to equity.
		18	Long-term debt to equity.
		19	Retained earnings divided by equity.
		20	Dividend payout ratio.
12	Discussion of the key non-financial resources available to the company	21	Does the company describe the implementation of its shareholder loyalty policy through a public commitment from a senior management or board member to avoid the misuse of inside information? AND Does the company describe the implementation of its shareholder loyalty policy by having the processes in place to avoid the misuse of inside information?
		22	Does the company describe the implementation of its board functions policy?
		23	Does the company describe the implementation of its compensation policy?
		24	Does the company describe the implementation of its diversity and opportunity policy?
13	Adequancy of financial and non-financial resources	25	Does the company report about the challenges or opportunities linked to the integration of financial and extra-financial issues?
14	Analysis of capital structure	26	Return on invested capital (ROIC).
		27	Average of the last five years of capital expenditures divided by sales.
15	Analysis of financial arrangements	28	Does the company set specific objectives to be achieved on the use of inside information?(31)στοχοθετηση
16	Discussion of liquidity and cash flows of the business	29	Operating cash flow (or unlevered free cash flow (UFCF)) growth (three-year annual growth).
		30	Current ratio (Total Current Assets /Total Current Liabilities).
17	Plans to address any identified inadequacies or surplus of resources	31	Does the company have a policy for reducing the use of natural resources? AND Does the company have a policy to lessen the environmental impact of its supply chain?
18	Potential impact of the identified risks and how they are managed	32	Does the company claim to apply quality management systems, such as ISO 9000, Six Sigma, Lean Manufacturing, Lean Sigma, TQM or any other similar quality principles?
19	Identification of key external and internal risks and opportunities	33	Does the company reports about take-back procedures and recycling programmes to reduce the potential risks of products entering the environment? OR Does the company report about product features and applications or services that will promote responsible, efficient, cost-effective and environmentally preferable use?

Appendix 2. The Management Commentary Index (Ma.Co.I) - Continued

20	Explanation changes in risk management	34	Does the company report on crisis management systems or reputation disaster recovery plans to reduce or minimize the effects of reputation disasters?
21	Discussion of key relationship in place e.g employees	35	Does the company have a policy for maintaining a loyal and productive employee base?
		36	Does the company describe the implementation of its employee satisfaction policy?
		37	Does the company monitor its reputation or its relations with communities?
		38	Does the company have a competitive employee benefits policy or ensuring good employee relations within its supply chain? AND Does the company have a policy for maintaining long term employment growth and stability?
22	How key relationships are managed and likely impact on business	39	Does the company set specific objectives to be achieved on the employee satisfaction strategy?
		40	Does the company have a policy for maintaining a well-balanced membership of the board?
		41	Does the company have a policy to strive to be a good corporate citizen or endorse the Global Sullivan Principles? AND Does the company have a policy to respect business ethics or has the company signed the UN Global Compact or follow the OECD guidelines?
	D. Results and prospects		
23	Explanation of the development and performance of the entity during the year	42	Does the company report data or studies which generally show improvements in the satisfaction and loyalty of its employees?
		43	Has the company issued a profit warning during the year?
24	Explanation of the financial position at the end of the year	44	Does the company publish a separate CSR/H&S/Sustainability report or publish a section in its annual report on CSR/H&S/Sustainability?
25	Discussion of significant changes in financial position	45	Does the company's extra-financial report take into account of the global activities of the company?
26	Variability of quarterly sales over the last three years. AND Net Income growth (three-year annual growth).	46	Variability of quarterly sales over the last three years.
27	Extent to which past results are indicative of future progress /results	47	Is the management and board members remuneration partly linked to objectives or targets which are more than two years forward looking?
28	The management of the firm set specific objectives and explain how to achieve them?	48	Does the company set specific objectives to be achieved on resource efficiency? AND Does the company comment on the results of previously set objectives?
29	Analysis of improvements/prospects of the entity AND how implement its targets/strategies about future.	49	Is the senior executive's compensation linked to CSR/H&S/Sustainability targets
		50	Does the company have the necessary internal improvement and information tools to develop appropriate shareholder rights principles?
30	Identification of objectives/targets for non-financial measures	51	Does the company set specific objectives to be achieved on emission reduction?
		52	Does the company set specific objectives to be achieved on its products or services quality and responsibility?
		53	Does the company set specific objectives to be achieved on its reputation or its relations with communities?
		54	Does the company set specific objectives to be achieved on employment quality?
	E. Performance measures and indicators		
31	Discussion of key financial measures used to measure and assess improvementprogress	55	Does the company report data or studies which generally show improvements in the satisfaction and loyalty of its customers?
32	Discussion of key non-financial measures used to measure and assess progress	56	Does the company describe the implementation of its community policy through a public commitment from a senior management or board member? AND Does the company describe the implementation of its community policy through the processes in place?
		57	Does the company monitor or measure its performance on employment quality?
33	Changes in the quantified measures or indicators reported	58	Operating income percentage change in the last three years.
		59	Does the company have a golden parachute or other restrictive clauses related to changes of control ?
34	Identification of key financial and non-financial indicators that it uses to monitor progress	60	Does the company monitor the use of inside information through the use of surveys or measurements?
		61	Does the company monitor the customer satisfaction or its reputation and relations with communities through the use of surveys or measurements?
		62	Does the company describe, claim to have or mention the processes it uses to accomplish environmental product innovation?
35	Explanation of how each measure, or quantified indicator, reported in MC has been defined and calculated	63	Does the company monitor the employee satisfaction through the use of surveys or measurements?(23)
		64	Does the company set specific objectives to be achieved on customer satisfaction or fair competition?
		65	Does the company monitor the board functions through the establishment of a corporate governance committee?
		66	Does the company have an external auditor of its CSR/H&S/Sustainability report?
		67	Does the company monitor the shareholder rights through the establishment of a corporate governance committee?
36	Consistent reporting of performance measures and indicators	68	Does the company claim to apply quality management systems, such as ISO 9000, Six Sigma, Lean Manufacturing, Lean Sigma, TQM or any other similar quality principles?
37	Discussion of the purpose of each reported measure should be disclosed	69	Does the company explain how it engages with its stakeholders?
		70	Is the company's CSR report published in accordance with the GRI guidelines?

Appendix 3. Qualitative characteristics for KPIs disclosure (ASB, 2006)

ASB (2006) (Paragraph 76, page 23):
For each KPI disclosed in the OFR:
1) the definition and its calculation method should be explained
2) its purpose should be explained
3) the source of underlying data should be disclosed and, where relevant, assumptions explained
4) quantification or commentary on future targets should be provided
5) where information from the financial statements has been adjusted for inclusion in the OFR, that fact should be highlighted and a reconciliation provided
6) where available, the corresponding amount for the financial year immediately preceding the current year should be disclosed
7) any changes to KPIs should be disclosed and the calculation method used compared to previous financial years, including significant changes in the underlying accounting policies adopted in the financial statements should be identified and explained.
Reflecting on the examples provided by the Reporting Statement (ASB, 2006: pp. 29-38), we capture data related to item four as two different types of information (either quantitative or narrative discussion). This is why eight qualitative characteristics are listed in Table 5.

Appendix 4. Example of measuring quantity and quality of KPIs reporting (Hypothetical firm 3i Group plc)

Year	2002	Overall Quantity	40
Firm	3i Group plc	Overall Quality	0,52

Category 1		
Number of Points	***Number of KPIs***	***Answers***
1	1	1
2	2	1
	3	0
	4	0
3	5	1
4	6	1
	7	0
Quantity of Kpis		4
Quality of KPIs		0,57

Category 2		
Number of Points	***Number of KPIs***	***Answers***
5	8	1
6	9	0
7	10	1
8	11	1
	12	0
9	13	1
10	14	0
Quantity of Kpis		4
Quality of KPIs		0,57

Category 3		
Number of Points	***Number of KPIs***	***Answers***
11	15	1
	16	N/A
	17	1
	18	1
	19	1
	20	1
12	21	1
	22	1
	23	0
	24	0
13	25	0
14	26	N/A
	27	1
15	28	0
16	29	1
	30	N/A
17	31	0
18	32	0
19	33	0
20	34	0
21	35	1
	36	1
	37	0
	38	1
22	39	0
	40	1
	41	1
Quantity of Kpis		14
Quality of KPIs		0,58

Category 4		
Number of Points	***Number of KPIs***	***Answers***
	42	0
23	43	1
24	44	1
25	45	0
26	46	1
27	47	1
28	48	0
29	49	0
	50	0
30	51	0
	52	0
	53	0
	54	0
Quantity of Kpis		4
Quality of KPIs		0,31

Category 5		
Number of Points	***Number of KPIs***	***Answers***
31	55	1
32	56	0
	57	0
33	58	0
	59	0
34	60	0
	61	0
	62	0
35	63	0
	64	0
	65	1
	66	1
	67	0
36	68	0
37	69	1
	70	0
Quantity of Kpis		14
Quality of KPIs		0,58